Hearing Date: October 9, 2026

ITEM 2

TEST CLAIM

PROPOSED DECISION

California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, Provisions C.3.j, C.8., C.10.a., C.10.b., C.11.a., C.11.b., C.11.c., C.12.a., C.12.c., C.12.d., and C.12.e, Adopted on November 19, 2015 and Effective on January 1, 2016

16-TC-03

City of Union City; Claimant

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555 12th Street, Suite 1500
Oakland, California 94607
tel (510) 808-2000
fax (510) 444-1108
www.meyersnave.com

Gregory J. Newmark
Attorney at Law
gnewmark@meyersnave.com

meyers | nave

Exhibits A

RECEIVED
August 14, 2017
Commission on State Mandates

August 14, 2017

VIA CSM DROPBOX

Heather Halsey, Esq.
Executive Director
Commission on State Mandates
980 9th Street, Suite 300
Sacramento, CA 95814

Re: City of Union City Response to Notice of Incomplete Test Claim
California Regional Water Quality Control Board,
San Francisco Bay Region, Order No. R2-2015-0049

Dear Ms. Halsey:

On behalf of the City of Union City, we are writing in response to your July 14, 2017, Notice of Incomplete Test Claim. Although the Notice indicates the City must address three issues in order to cure the test claim, after further discussion, the Commission agreed that the only item that must be addressed and revised is item (1) The dates cost were *first* incurred. Accordingly, Union City submits concurrently herewith a test claim package with a revised written narrative and declaration to identify the date costs were first incurred. The revisions that address this issue are specified below.

- Written Narrative, new Section VI, beginning on page 5.21;
- Declaration of Thomas Ruark, new paragraph 9(e), beginning on page 6.1.10; and,
- Declaration of Jim Scanlin, new paragraph 11, beginning on page 6.2.5.

Please do not hesitate to contact me if you have any questions or need additional information regarding this matter.

Sincerely,

Gregory J. Newmark
Attorney at Law

Encl.

DECLARATION OF SERVICE BY EMAIL

I, the undersigned, declare as follows:

I am a resident of the County of Los Angeles and I am over the age of 18 years, and not a party to the within action. My place of employment is 707 Wilshire Boulevard, 24th Floor, Los Angeles, California 90017.

On August 14, 2017, I served the:

1. Alameda and San Mateo County Claimants and County of Santa Clara's letter regarding February 15, 2017 request for extension by RWQCB

by electronically filing it on the Commission's website, which provides notice of how to locate it to the email addresses provided on the test claim mailing list.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this declaration was executed on August 14, 2017, at Los Angeles, California.

Patricia Anne McNulty

2847563.1

UNION CITY TEST CLAIM

IN RE

MUNICIPAL REGIONAL STORMWATER PERMIT ISSUED BY

THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD,

SAN FRANCISO BAY REGION

NPDES NO. CAS612008

ISSUED AS ORDER NO. R2-2015-0049 (NOVEMBER 19, 2015)

1. TEST CLAIM TITLE

Municipal Regional Stormwater Permit

2. CLAIMANT INFORMATION

City of Union City
Name of Local Agency or School District

Antonio E. Acosta
Claimant Contact

City Manager
Title

34009 Alvarado-Niles Road
Street Address

Union City, CA, 94587
City, State, Zip

(510) 675-5351
Telephone Number

Fax Number

tonya@unioncity.org
E-Mail Address

3. CLAIMANT REPRESENTATIVE INFORMATION

Claimant designates the following person to act as its sole representative in this test claim. All correspondence and communications regarding this claim shall be forwarded to this representative. Any change in representation must be authorized by the claimant in writing, and sent to the Commission on State Mandates.

Gregory Newmark
Claimant Representative Name

Principal
Title

Meyers, Ave, Riback, Silver & Wilson
Organization

555 12th Street, Suite 1500
Street Address

Oakland, CA 94607
City, State, Zip

(510) 808-2000
Telephone Number

(510) 444-1108
Fax Number

gnewmark@meyersnave.com
E-Mail Address

For CSM Use Only

Filing Date:

RECEIVED
June 30, 2017
Commission on State Mandates

Test Claim #: 16-TC-03

4. TEST CLAIM STATUTES OR EXECUTIVE ORDERS CITED

Please identify all code sections (include statutes, chapters, and bill numbers) (e.g., Penal Code Section 2045, Statutes 2004, Chapter 54 [AB 290]), regulations (include register number and effective date), and executive orders (include effective date) that impose the alleged mandate .

Municipal Regional Stormwater Permit No. CAS612008, issued by the Regional Water Quality Control Board, San Francisco Region as Order No. R2-2015-0049 on November 19, 2015, effective January 1, 2016.

☑ *Copies of all statutes and executive orders cited are attached.*

Sections 5, 6, and 7 are attached as follows:

5. Written Narrative: pages 7 to 33.
6. Declarations: pages 34 to 75.
7. Documentation: pages 76 to 837.

Sections 5, 6, and 7 should be answered on separate sheets of plain 8-1/2 x 11 paper. Each sheet should include the test claim name, the claimant, the section number, and heading at the top of each page.

5. WRITTEN NARRATIVE

Under the heading "5. Written Narrative," please identify the specific sections of statutes or executive orders alleged to contain a mandate.

Include a statement that actual and/or estimated costs resulting from the alleged mandate exceeds one thousand dollars ($1,000), and include all of the following elements for each statute or executive order alleged:

(A) A detailed description of the new activities and costs that arise from the mandate.

(B) A detailed description of existing activities and costs that are modified by the mandate.

(C) The actual increased costs incurred by the claimant during the fiscal year for which the claim was filed to implement the alleged mandate.

(D) The actual or estimated annual costs that will be incurred by the claimant to implement the alleged mandate during the fiscal year immediately following the fiscal year for which the claim was filed.

(E) A statewide cost estimate of increased costs that all local agencies or school districts will incur to implement the alleged mandate during the fiscal year immediately following the fiscal year for which the claim was filed.

(F) Identification of all of the following funding sources available for this program:
- (i) Dedicated state funds
- (ii) Dedicated federal funds
- (iii) Other nonlocal agency funds
- (iv) The local agency's general purpose funds
- (v) Fee authority to offset costs

(G) Identification of prior mandate determinations made by the Board of Control or the Commission on State Mandates that may be related to the alleged mandate.

(H) Identification of a legislatively determined mandate pursuant to Government Code section 17573 that is on the same statute or executive order.

6. DECLARATIONS

Under the heading "6. Declarations," support the written narrative with declarations that:

(A) declare actual or estimated increased costs that will be incurred by the claimant to implement the alleged mandate;

(B) identify all local, state, or federal funds, and fee authority that may be used to offset the increased costs that will be incurred by the claimant to implement the alleged mandate, including direct and indirect costs;

(C) describe new activities performed to implement specified provisions of the new statute or executive order alleged to impose a reimbursable state-mandated program (specific references shall be made to chapters, articles, sections, or page numbers alleged to impose a reimbursable state-mandated program);

(D) If applicable, describe the period of reimbursement and payments received for full reimbursement of costs for a legislatively determined mandate pursuant to Section 17573, and the authority to file a test claim pursuant to paragraph (1) of Section17574(c).

(E) are signed under penalty of perjury, based on the declarant's personal knowledge, information or belief, by persons who are authorized and competent to do so.

7. DOCUMENTATION

Under the heading "7. Documention, " support the written narrative with copies of all of the following:

(A) the test claim statute that includes the bill number alleged to impose or impact a mandate; and/or

(B) the executive order, identified by its effective date, alleged to impose or impact a mandate; and

(C) relevant portions of state constitutional provisions, federal statutes, and executive orders that may impact the alleged mandate; and

(D) administrative decisions and court decisions cited in the narrative. Published court decisions arising from a state mandate determination by the Board of Control or the Commission are exempt from this requirement; and

(E) statutes, chapters of original legislatively determined mandate and any amendments.

8. CLAIM CERTIFICATION

*Read, sign, and date this section and insert at the end of the test claim submission.**

This test claim alleges the existence of a reimbursable state-mandated program within the meaning of article XIII B, section 6 of the California Constitution and Government Code section 17514. I hereby declare, under penalty of perjury under the laws of the State of California, that the information in this test claim submission is true and complete to the best of my own knowledge or information or belief.

Antonio E. Acosta
Print or Type Name of Authorized Local Agency or School District Official

City Manager, Union City
Print or Type Title


Signature of Authorized Local Agency or School District Official

29 June 2017
Date

** If the declarant for this Claim Certification is different from the Claimant contact identified in section 2 of the test claim form, please provide the declarant's address, telephone number, fax number, and e-mail address below.*

5. WRITTEN NARRATIVE

IN SUPPORT OF UNION CITY TEST CLAIM

IN RE

MUNICIPAL REGIONAL STORMWATER PERMIT ISSUED BY

THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD,

SAN FRANCISO BAY REGION

NPDES NO. CAS612008

ISSUED AS ORDER NO. R2-2015-0049 (NOVEMBER 19, 2015)

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NARRATIVE STATEMENT IN SUPPORT OF TEST CLAIM

I. INTRODUCTION

The City of Union City (City or Union City) seeks the Commission on State Mandate's (Commission) approval of claims to recover costs associated with obligations mandated by several provisions of the Municipal Regional Stormwater Permit issued on November 19, 2015, (MRP2) by the California Regional Water Quality Control Board, San Francisco Bay Region (Regional Water Board).[1] The MRP2 regulates the discharge of storm water runoff from the municipal separate storm sewer systems (MS4s) maintained by a total of 76 cities, counties, and flood control districts within the jurisdiction of six Bay Area regional stormwater programs.

This Test Claim addresses three broad categories of mandates imposed by the MRP2. First, Union City seeks reimbursement for costly MRP2 requirements to achieve greater levels of trash load reduction than previously required. That is, the MRP2 mandates that the City undertake activities to remove even greater amounts of trash from its MS4. Second, the City seeks reimbursement for costly "green infrastructure" requirements in the MRP2 that compel the construction of capital projects like "green streets" in order to reduce the amount of mercury and PCBs entering the MS4. Third, and only as a precaution, Union City seeks reimbursement for monitoring requirement costs the MRP2 continues from the prior permit. These monitoring requirements were initially imposed in the prior permit, MRP1,[2] and are pending before the Commission in Consolidated Test Claims 10-TC-01, 10-TC-02, 10-TC-03 and 10-TC-05. The City does not believe it is or should be required to raise those same monitoring cost issues in this Test Claim, but does so in an abundance of caution.

---

[1] A copy of the MRP2, NPDES No. CAS612008, issued as Order No. R2-2015-0049 (November 19, 2015), is attached hereto as Exhibit 1.

[2] Prior to the effective date of the MRP2, Union City was regulated by Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, amended by Order No. R2-2011-0083 on November 28, 2011 ("MRP1" or the "Prior Permit"), a copy of which is attached as Exhibit 2.

Since the last time the Commission heard a municipal storm water test claim, the California Supreme Court has clarified the law in this area by issuing its opinion in *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749 ("*Dep't of Finance*"). The High Court upheld the Commission's determination that the challenged storm water provisions are state mandates rather than federal mandates. In addition, the Supreme Court clarified that opponents of the test claim, not the claimant, bear the burden of proving the applicability of any exceptions to the "general rule requiring reimbursement of all state-mandated costs." (*Id*. at 370-71.)

Under existing law and new Supreme Court authority, the new activities Union City must undertake to comply with the MRP2 are state mandates subject to subvention. The City respectfully requests that the Commission approve this Test Claim so that the MRP2 mandates are funded and the City can continue its cooperation with the Regional Board to improve water quality in the San Francisco Bay with the necessary funding. Union City is committed to the improvement and maintenance of the quality of waters of the Bay and its tributaries, and will comply with the MRP2 to the best of its ability. Further, the City supports may of the objectives the MRP2 is attempting to achieve. The City submits this Test Claim only to address the fundamental issue of the limited financial ability of the City and its taxpayers to pay for the necessary activities.

II. LEGAL AND PROCEDURAL BACKGROUND

A. Regional Stormwater Permits

When a Regional Water Board issues a stormwater permit, it is implementing both federal and state law:

> Part of the federal Clean Water Act is the National Pollutant Discharge Elimination System (NPDES), "[t]he primary means" for enforcing effluent limitations and standards under the Clean Water Act. (*Arkansas v. Oklahoma, supra,* 503 U.S. at 101, 112 S.Ct. 1046.) The NPDES sets out the conditions under which the federal EPA or a state with an approved water quality control program can issue permits for the discharge of pollutants in

> wastewater. (33 U.S.C. § 1342(a) & (b).) In California, wastewater discharge requirements established by the regional boards are the equivalent of the NPDES permits required by federal law. (§ 13374.)

City of Burbank v. State Water Res. Control Bd. (2005) 35 Cal.4th 613 at 619-621. Section 402(p) of the federal Clean Water Act establishes that an MS4 permit:

> (i) may be issued on a system or jurisdiction-wide basis;
>
> (ii) shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers; and
>
> (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

33 U.S.C. § 1342(p)(3)(B).[3]

California is among the states that are authorized to implement the NPDES permit program. 33 U.S.C. § 1342(b). Permits issued by the regional water boards under this authority must impose conditions that are at least as stringent as those required under the federal act. 33 U.S.C. § 1371; Cal. Water Code § 13377.

However, relying on its state law authority or discretion, the regional water boards are free to issue permits that impose limits or conditions in excess of those required under the federal law where

[3] The relevant provisions of the Clean Water Act are included with the documentation in Section 7, Exhibit 3, of this Test Claim.

necessary to achieve higher water quality standards and objectives established under state law:

> In California, the controlling law is the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), which was enacted in 1969. Its goal is "to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible." The task of accomplishing this belongs to the State Water Resources Control Board (State Board) and the nine Regional Water Quality Control Boards; together the State Board and the regional boards comprise "the principal state agencies with primary responsibility for the coordination and control of water quality."
>
> Whereas the State Board establishes statewide policy for water quality control, the regional boards "formulate and adopt water quality control plans for all areas within [a] region". The regional boards' water quality plans, called "basin plans," must address the beneficial uses to be protected as well as water quality objectives, and they must establish a program of implementation. Basin plans must be consistent with "state policy for water quality control."

City of Burbank v. State Water Res. Control Bd. (2005) 35 Cal.4th 613 at 619 (internal citations omitted). The California Water Code expressly anticipates that the uses and objectives set forth in basin plans and the need to prevent nuisance will require permits issued by regional water boards to impose more stringent regulatory controls than would otherwise result from federal law:

> Notwithstanding any other provision of this division, the state board or the regional boards shall, as required or authorized by the Federal

> Water Pollution Control Act, as amended, issue waste discharge requirements and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance.

Cal. Water Code § 13377.

B. MRP2 and the MRP1 (the Prior Permit)

The MRP2 was issued by the Regional Water Board, an executive agency of the State of California. It governs stormwater discharges in some 76 different municipal entities (e.g., cities, counties, and flood control and water conservation districts). (Ex. 1 at 1-2.) Union City is one of the Permittees participating in the Alameda Countywide Clean Water Program (the "Alameda Countywide Program").

The permit that formerly governed Union City was Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, amended by Order No. R2-2011-0083 on November 28, 2011 ("MRP1" or the "Prior Permit"). (Ex. 1 at 1; Ex. 2.) For purposes of establishing that the provisions of the MRP2 constitute new programs or a higher level of service, the MRP2's provisions are compared to the MRP1.

C. State Mandate Law

The Commission is familiar with the basic legal framework that governs its consideration of test claims. Union City will therefore provide only a brief summary of the major legal principles. Article XIII B section 6 of the California Constitution provides in relevant part:

> Whenever the Legislature or any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse such local governments for the cost of such program or increased level of service . . . .

The purpose of section 6 "is to preclude the state from shifting financial responsibility for carrying out governmental functions to local agencies, which are 'ill equipped' to assume increased financial responsibilities because of the taxing and spending limitations that articles XIII A and XIII B impose." (*County of San Diego v. State of California* (1997) 15 Cal.4th 68, 81; *County of Fresno v. State of California* (2000) 53 Cal.3d 482, 487.) The section "was designed to protect the tax revenues of local governments from state mandates that would require expenditure of such revenues." (*County of Fresno, supra,* at 487; *Redevelopment Agency v. Comm'n on State Mandates* (1997) 55 Cal.App.4th 976, 984-85.) The Legislature implemented section 6 by enacting a comprehensive administrative scheme to establish and pay mandate claims. (Cal. Gov't Code §§ 17500 *et seq*.; *Kinlaw v. State of California* (1991) 54 Cal.3d 326, 331, 333 [statute establishes "procedure by which to implement and enforce section 6"].)

The legal landscape in this area has become much clearer since the last time the Commission rendered a decision on a municipal stormwater permit test claim as a result of the California Supreme Court's decision in *Dep't of Finance*. The High Court summarized the basic principle: "Under our state Constitution, if the Legislature or a state agency requires a local government to provide a new program or higher level of service, the local government is entitled to reimbursement from the state for the associated costs." (1 Cal.5th at 754.)

1. Parties Opposing Union City Bear the Burden of Proving Exceptions to the General Constitutional Subvention Requirement

For the purposes of future test claim proceedings, one of the most important aspects of *Dep't of Finance* is the Court's discussion of the burdens of the parties before the Commission. Under *Dep't of Finance*, once claimants demonstrate new programs or increased levels of service are being imposed, the burden of proof shifts to test claim opponents (such as, presumably, the Regional Water Board), if any appear, to prove that the requirements at issue are excepted from the general subvention requirement:

> Section 6 establishes a **general rule requiring reimbursement** of all state-mandated costs. Government Code section 17556, subdivision (c), codifies an exception to

> that rule. Typically, **the party claiming the applicability of an exception bears the burden of demonstrating that it applies**. [Citations.] Here, the State must explain why federal law mandated these requirements, rather than forcing the Operators to prove the opposite.

(*Dep't of Finance*, 1 Cal.5th at 769 citing *Simpson Strong-Tie Co., Inc. v. Gore* (2010) 49 Cal.4th 12, 23 and *Long Beach Police Officers Assn. v. City of Long Beach* (2014) 59 Cal.4th 59, 67, emphasis added.) Thus, for Union City's test claim, the City must establish that the MRP2 requires new programs and/or higher levels of service, but the applicability of any exceptions to the "general rule requirement reimbursement" must be proven, if at all, by a test claim opponent.

Moreover, the Supreme Court's reasoning regarding the federal mandates exception must apply with equal force to all the "exception[s] to that [general] rule" listed in Government Code section 17556, not just the federal mandates exception in subdivision (c). For example, to the extent the Regional Water Board contends that the fee authority exception in section 17556, subdivision (d), is applicable to Union City's test claim (see Ex. 1 at p. A-21), the Regional Water Board bears the burden of proving the exception applies and Union City cannot be forced to "prove the opposite."

2. Statutory Exceptions to the General Rule Requiring Subvention Must Be Construed Narrowly and the Constitution Must to Construed Broadly

Furthermore, in evaluating the applicability statutory exceptions of the constitutional "general rule," the Commission must construe the exceptions narrowly. (*National City v. Fritz* (1949) 33 Cal.2d 635, 636–37 (applying "the rule that exceptions in a statute are to be strictly construed . . . [citations]."); *Dept. of Alcoholic Beverage Control v. Alcoholic Beverage Control Appeals Board* (2017) 7 Cal.App.5th 628, 641 (applying the "well-established rule that [a]n exception to a statute is to be narrowly construed," internal quotations and citations omitted); *Corey v. Knight* (1957) 150 Cal.App.2d 671, 680 (statutory "exceptions are to be narrowly, not broadly, construed").) Accordingly, when considering anticipated arguments from the Regional Water Board

about the applicability of section 17556 exceptions, only narrow interpretations of the exceptions are permissible.

The rule requiring narrow construction of statutory exceptions dovetails with the principle that ballot initiatives amending the Constitution must be interpreted broadly to implement the will of the voters. The exceptions listed in section 17556 do not appear anywhere in Article XIIIB, section 6. As the court in *Hayes v. Commission on State Mandates* (1992) 11 Cal.App.4th 1564 observed, "[t]he constitutional subvention provision and the statutory provisions which preceded it do not expressly say that the state is not required to provide a subvention for costs imposed by a federal mandate." (*Id*. at p. 1593.)[4] Rather, these exceptions were developed by the legislature and the courts rather than the voters.

In interpreting the scope of exceptions to the general rule requiring subvention, the corollary rule is that the Constitution "is not to be interpreted according to narrow or supertechnical principles, but liberally and on broad general lines, so that it may accomplish in full measure the objects of its establishment and so carry out the great principles of government." (*Amador Valley*, *supra*, 22 Cal. 3d at pp. 244-45 quoting *Stephens v. Chambers* (1917) 34 Cal.App. 660, 663-664.) In light of the objectives of Proposition 4, the plain language of the Constitution requiring subvention whenever the state imposes new programs or higher levels of service must be broadly construed.

3. The Federal Mandates Exception Does Not Apply to the Challenged Requirements Because the Regional Water Board Exercised its Discretion by Virtue of a "True Choice"

In *Dep't of Finance*, the Supreme Court also confirmed that application of the federal mandates exception turns on whether a state requirement was imposed because it was compelled by federal law, or

[4] Article XIII B, section 9, mentions federal mandates as excluded from definition of "appropriates subject to limitation," but they are not mentioned in section 6. The Supreme Court declined to address the "question whether 'federal' and 'state' mandates are mutually exclusive for purposes of state subvention" in *City of Sacramento v. State of California* (1990) 50 Cal.3d 51, 71, fn. 16.

whether it was "imposed as a result of the state's discretionary action." (1 Cal.5th at 754). If it is compelled by federal law, the state must implement a federal mandate and no reimbursement is required. On the other hand, if the requirement is imposed as a result of the state's discretionary action, reimbursement is required.

The Supreme Court summarized applicable case law on the matter, and opined that, "if federal law gives the state discretion whether to impose a particular implementing requirement, and the state exercises its discretion to impose the requirement by virtue of a 'true choice,' the requirement is not federally mandated" and reimbursement is required. (*Dep't of Finance*, 1 Cal.5th at 765.) In applying this rule to the County of Los Angeles claims, the Court analyzed the Clean Water Act, the Porter-Cologne Act, and related regulations. The Court found that the regional board in that case was given discretionary power to fashion requirements which it determined would meet the Clean Water Act's maximum extent practicable ("MEP") standard. (*Id.* at 767-68.) Federal law did not compel these requirements, because the State's NPDES program is undertaken on a voluntary basis. (*Id.* at 767.) As the Court noted, the State was not compelled to operate its own permitting system. (*Id.*) The Supreme Court further found that the federal regulations gave the regional board discretion to develop and issue municipal storm water permits and determine which specific controls would be required. (*Id.* at 767-68.) Accordingly, the regional board's exercise of a "true choice" constitutes a state mandate of costs associated with the contested permit provisions. (*Id.* at 769, 770-72 [analyzing whether inspection and trash receptacle conditions were mandated by Clean Water Act].)

III. STATEMENT THAT MANDATED COSTS EXCEED $1,000

Union City states that the actual and/or estimated costs resulting from the mandates imposed by the MRP2 exceeds one thousand dollars ($1,000), as set forth in this Written Narrative and in the declarations included in Section 6 of this Test Claim.

IV. THE UNFUNDED MANDATES AT ISSUE IN THIS TEST CLAIM

The MRP2 contains 24 separate provisions that establish the prohibitions, limitations, and obligations of Claimants and other

Permittees. This Test Claim pertains primarily to two categories of mandates:

- Provision C.10—Trash Load Reduction; and,
- Provision C.3.j, C.11 and C.12—Mercury and PCB Controls.

In addition, and in an abundance of caution, this Test Claim also includes the continuation of Provision C.8—Monitoring requirements first imposed in the MRP1 and maintained as requirements in the MRP2. Union City does not believe it is or should be required to reassert these C.8 requirements in this Test Claim because the same requirements are at issue in Consolidated 10-TC-01, 10-TC-02, 10-TC-03 and 10-TC-05, currently pending before the Commission. Union City would be willing to withdraw the C.8 issues from this Test Claim with assurances from the Commission that no waiver, forfeiture or abandonment of rights to subvention would result.

The requirements addressed in this Test Claim, as explained in more detail below, are "programs" within the meaning of Article XIIIB, section 6, in that they require Union City to provide certain services to the public. The requirements are unique to public entities like Union City because they arise from the operation of a municipal separate storm sewer system under NPDES permits issued only to municipalities and which require activities that are not required of private non-governmental dischargers. These requirements include the development and amendment of government planning documents, the inspection of property, the development and construction of public works projects and other purely governmental functions.[5]

A test claim must be filed with the Commission "not later than 12 months following the effective date of a statute or executive order, or within 12 months of first incurring increased costs as a result of a statute or executive order, whichever is later. For purposes of claiming based on the date of first incurring costs, 'within 12 months' means by June 30 of the fiscal year following the fiscal year in which increased

[5] Orders issued by the Regional Board such as the MRP are "executive orders" within the meaning of Government Code section 17516 and thus properly subject to test claim proceedings. (*County of Los Angeles v. Commission on State Mandates* (2007) 150 Cal.App.4th 898, 920.

costs were first incurred by the test claimant." (Cal. Code Regs., tit. 2, § 1183.1, subd. (b).)

Union City first incurred costs to comply with the MRP2 during fiscal year 2015-2016, which ended on June 30, 2016.[6] As such, this Test Claim is timely filed.

A. Trash Load Reduction

Provision C.10 of the MRP2 requires Union City and other Permittees to implement a number of trash-related programs that were not required by the MRP1. The specific sections that impose state mandated costs are identified below along with detailed descriptions of the new activities and costs that arise from the mandate and existing activities and costs that are modified by the mandate.

1. Description of Trash Load Reduction New and Existing Activities

(a) Provision C.10.a: Trash Load Reduction

Provision C.10 of the MRP2 requires Union City and other permittees to implement a number of trash-related programs that were not required by the MRP1.

Provision C.10.a requires Union City to undertake new activities to reduce trash loads from municipal separate storm sewer systems ("MS4s") to continue progress toward meeting the goal of 100 percent trash load reduction or no adverse impact to receiving waters from trash by July 1, 2022. (MRP2 at 97.) The MRP2 mandates compliance with the following new schedule and compliance deadlines:

> **Schedule** – Permittees shall reduce trash discharges from 2009 levels, described below, to receiving waters in accordance with the following schedule:
>
> a. 70 percent by July 1, 2017; and
>
> b. 80 percent by July 1, 2019.

[6] Ruark Declaration, ¶ 9.

(*Ibid*.) Though the MRP1 stated that Permittees must achieve phased annual reductions in trash loading culminating in 100 percent by 2022, and included an enforceable deadline of 40 percent reduction by 2014, the MRP1 was rescinded on the effective date of the MRP2 (January 1, 2016) and so the 2017 and subsequent reductions were compelled by the MRP2. The Regional Water Board recognized that the MRP2 mandates an increased level of service, and explicitly found in Finding C.10-8 that "[t]his Permit builds on the data and information collected in the last permit term and **increases expectations of Permittees in the Permit**." (MRP2 at A-90, emphasis added.) The Regional Board described the 70 percent reduction requirement as the "2017 mandatory deadline." (*Id*.at A-91) The Regional Water Board explained that the 2017 and later reductions were goals in the MRP1 have become enforceable mandates in the MRP2: "The **compliance deadlines** are consistent with the previous permit[']s **goals** of 70 percent trash load reductions by 2017 and 100 percent trash load reduction (or no adverse trash impact) by 2022." (*Ibid*., emphasis added.) Moreover, the MRP added an additional milestone of 80 percent trash load reduction by July 1, 2019. These additional phased trash load reduction mandates, beyond the requirements of the MRP1, have compelled the City to incur significant expenses in order to comply. These trash load reduction requirements constituted a new program, when only the planning requirements and first phases of reduction were imposed in the MRP1, and the MRP2 requirement to achieve increased levels of load reduction is an increased level of service in comparison to the MRP1.

(b) Provision C.10.b: Demonstration of Trash Reduction Outcomes

Provision C.10.b requires Permittees to maintain, and provide for inspection and review upon request, documentation of the design, operation, and maintenance of each of their full trash capture systems, including the mapped location and drainage area served by each system. (MRP2 at 99-102.) This provision specifies detailed full trash capture system installation and maintenance instructions, which are more prescriptive, burdensome and costly than MRP1 to fulfill. The MRP1 generally required Permittees to install and maintain full trash capture devices, which allowed each municipality greater discretion in identifying effective as well as cost efficient methods for meeting trash load reduction goals. Now, under the MRP2, compliance by means of

Other Trash Management Actions (meaning non-full trash capture systems) has become so burdensome and costly that Union City has determined installation of full trash capture systems is the least costly compliance option. Provision C.10.b requires increased activities by Union City that are best characterized as a higher level of service in comparison to the MRP1.

2. C.10 Trash Load Reduction Costs Incurred by Union City

City staff has projected City-wide costs to implement these measures, as well as the costs associated with specific tasks necessary to implement the remaining C.10 provisions (including planning, design, installation, purchase, operation, and maintenance of full trash capture devices, long-term trash load reduction planning, and reporting).

As part of the City's Long Term Trash Reduction Plan, in June 2015, the City commissioned United Storm Water, Inc. to install an additional 200 full trash capture devices for a total of $99,994.52. The City had anticipated the new full trash capture installation requirements set forth in the MRP2 and commissioned the installation of the trash capture devices in order to comply with Provision C.10 just prior to the MRP2's effective date. This cost was paid out of the City's clean water fund. The City had previously installed 150 units, paid by a grant from the EPA. The City is planning to install an additional 200 units in the summer of 2018, totaling 550 full trash capture devices. It is estimated that the purchase and installation of the additional 200 devices will cost the City another $100,000. Therefore, in total, Union City's cost to install trash capture devices required to comply with the MRP2 is approximately $200,000.

In April 2017, the City adopted a resolution approving an appropriation of $432,500.57 from the City's Vehicle Replacement Fund and awarded a contract in the amount of $432,423.57 to Owen Equipment of Fairfield, California for the procurement of one Storm Drain Cleaner. This contract award was determined to be vital to minimize stormwater pollution, and maintain and clean the newly installed full trash capture devices so as to be in compliance with the MRP2. The City had already owned a Vactor truck; however, it is an old device and unable to fulfill the full trash capture maintenance requirements set forth in the MRP2. Renting a Vactor truck costs

$10,000 per month. The City ultimately determined that purchasing a new Vactor truck would be more cost effective than renting a device. The procurement for the equipment purchase was made available from the City's Vehicle Replacement Fund.

The MRP2 requires the City to clean the trash capture devices twice a year. It will take an estimated three months to clean all 550 units once. Three months of crew time of the Vactor crew is estimated to cost $42,500. Thus, cleaning the units twice per year will take the City six months. At a cost of $85,000 for labor for six months of the crew time, yearly maintenance costs are estimated to total $145,000.

City staff has worked to identify best management practices and control measures that they believe will be necessary in order to achieve the target of 100% trash reduction from municipal separate storm sewer systems by July 1, 2022, and with interim milestones of 70% reduction by July 1, 2017 and 80% by July 1, 2019, as required by Provision C.10.a. These practices and measures include the following:

- Installed full trash capture devices in our high trash generating areas
- Increased cleaning of Continuous Deflection Separators (CDS) Units and Catch basins pre and post storm event season.
- Increased public awareness by installing clean water advertisement in all of Union City's transit buses
- Increased Public Outreach with at least 8 different yearly events
- Distributed over 500 reusable bags
- Passed a Plastic Bag Ban
- Conducted a least two creek clean up events per year
- Utilized Work furlough crews to assist in weekly trash pick-up along major arterials and collector streets.
- Installed over 150 trash capture devices (TCD) in our city-owned catch basins which surround our retail and commercial properties as well as a portion of our high density residential properties.
- In addition, the City has a total of 12 CDS units installed on both private and public properties.
- It is estimated that these measures serve a combined area of 293.28 acres.

The City has and will incur internal costs to implement the actions described above, but is not presently able to specify the magnitude of those costs.

B. Mercury and PCB Controls

Sections C.3.j, C.11, and C.12 require Permittees to implement Green Infrastructure projects to comply with mercury and PCB load reduction requirements. While the MRP1 required Permittees to pursue pilot and assessment projects, primarily on Countywide levels regarding PCBs and mercury, Green Infrastructure projects constitute a new requirement in the MRP2, requiring new actions by Union City and other Permittees.

Green Infrastructure is a term that appears throughout the MRP2, which defines the term as follows:

> Infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments. At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water.

(MRP2 at 147.) The MRP2's green infrastructure requirements are new; the term was not used even once in the MRP1.

1. Description of Mercury and PCB Controls New and Existing Activities

(a) Provision C.3.j: Green Infrastructure Planning and Implementation

Provision C.3.j requires Permittees to complete and implement a Green Infrastructure Plan for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other storm drain infrastructure elements. (MRP2 at 43-48.) The Green Infrastructure Plan is a new program that was not required by the MRP1.

(b) Provision C.11.a: Implement Control Measures to Achieve Mercury Load Reductions

As stated by the Regional Water Board in its Fact Sheet, Provision C.11.a "requires Permittees to implement control measures to achieve mercury load reductions. In order to comply with this requirement, Permittees must identify the mercury control measures and the watersheds and management areas in which these measures will be implemented and a time schedule for implementation." (MRP2 at A-106.) The Regional Water Board found that much of the mercury load reduction will be realized through "more extensive treatment elements (e.g., green infrastructure) . . . ." (*Id.* at A-107.) This is a new program that was not required under the MRP1.

(c) Provision C.11.b: Assess Mercury Load Reductions from Stormwater

As stated in the Regional Water Board's Fact Sheet, "Provision C.11.b. requires Permittees to develop and implement an assessment methodology and data collection program to quantify mercury loads reduced through implementation of any and all pollution prevention, source control and treatment control efforts required by the provisions of this Permit or load reductions achieved through other relevant efforts . . . ." (MRP2 at A-107.) The MRP1 did not include such specific requirements, but simply obliged Permittees to monitor methylmercury in runoff discharges, analyze aqueous grab samples, and report monitoring results annually. This is a new program and/or a higher level of service that was not required under the MRP1.

(d) Provision C.11.c: Plan and Implement Green Infrastructure to Reduce Mercury Loads

The MRP2 Fact Sheet states that "Provision C.11.c. requires Permittees to implement green infrastructure projects during the term of the permit to achieve mercury load reductions of 48 g/year by June 30, 2020." (MRP2 at A-109.) The MRP1 merely required Permittees to monitor, measure, and report mercury load reduction. The MRP2 requirement to reduce mercury loads through green infrastructure projects is a new program requiring new actions that Union City was not required to undertake under the MRP1.

(e) Provision C.12.a: Implement Control Measures to Achieve PCBs Load Reductions

As summarized in the Fact Sheet, Provision C.12.a "requires Permittees to implement control measures to achieve specific PCBs load reductions. In order to comply with this requirement, Permittees must identify the PCBs control measures and the watersheds and management areas in which these measures will be implemented and a time schedule for implementation." (MRP2 at A-116.) "This provision requires that Permittees achieve annual PCBs load reductions totaling 0.5 kg/yr by June 30, 2018, and 3.0 kg/yr by June 30, 2020." (*Id.*)

The MRP1 included much more limited PCBs provisions focused primarily on a series of pilot projects as well as evaluation and reporting requirements. It did not order the load reduction actions and performance criteria included in the MRP2, which are new programs and higher levels of service.

(f) Provision C.12.c: Plan and Implement Green Infrastructure to Reduce PCBs Loads

The MRP2 Fact Sheet states that Provision C.12.c "requires Permittees to implement green infrastructure projects during the term of the Permit to achieve PCBs load reductions of 120 g/year by June 30, 2020." (MRP2 at A-121.) As discussed earlier, green infrastructure projects constitute a new requirement and were not included in the MRP1.

(g) Provision C.12.d: Prepare Implementation Plan and Schedule to Achieve TMDL Wasteload Allocations

As stated in the Fact Sheet, Provision C.12.d "requires Permittees to prepare a plan and schedule for PCBs control measure implementation and corresponding reasonable assurance analysis to quantitatively demonstrate that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations." (MRP2 at A-121.) No such requirement appears in the MRP1.

(h) Provision C.12.e: Evaluate PCBs Presence in Caulks/Sealants Used in Storm Drain or Roadway Infrastructure in Public Rights-of-Way

The Fact Sheet explains that Provision C.12.e "requires that Permittees collect samples of caulk and other sealants used in storm drains and between concrete curbs and street pavement and investigate whether PCBs are present in such material and in what concentrations." (MRP2 at A-122.) No such requirement appears in the MRP1.

2. C.3.j/C.11/C.12 Mercury and PCB Reduction Costs Incurred by Union City

(a) Green Infrastructure Plan

As part of the City's Green Infrastructure program, the Union City Council adopted a resolution authorizing the adoption of a Green Infrastructure Plan, as required by Provision C.3.j. The City is seeking to retain a consultant for the preparation of some of the tasks listed in the Framework for Green Infrastructure Plan Development ("Framework") and has budgeted $15,000 to support such assistance.

(b) First Green Street Infrastructure Project

On January 12, 2015, the City awarded a contract for the City's first green street infrastructure improvement project to Star Construction in the amount of $877,502.10. The final construction cost was $1,029,998.50.

Total project related costs are as follows:

Design Fees	$230,911
Construction Contract (Star Construction, Inc.)	$1,029,998.50
Utilities	$45,238.39
Construction Management (City Staff)	$99,692.41
TOTAL	**$ 1,405,840.30**

(c) South Decoto Green Streets Project

In September 2015, the City approved a contract award for the Granite Rock Company to complete improvements related to the South Decoto Green Streets Project. The South Decoto Green Streets Project is a sustainable redevelopment project in the Decoto District that aims to create 'green' infrastructure that mimics natural systems to reduce

reliance on essential city functions such as storm drainage. The project created tree-lined, pedestrian-friendly green streets, thereby contributing to overall quality of life while reducing water and air pollution, increasing groundwater recharge, and reducing water consumption.

Project related costs to date are as follows:

Design Engineering & Monitoring Contract (Bellecci and Associates)	$ 548,990
Construction Contract (Granite Rock Company)	$ 2,781,587
Construction Inspection Services Contract (Vali Cooper & Associates)/Material Testing Contract (Applied Materials)	$ 163,722
Construction Staking Contract (Bellecci & Associates)	$18,960
Estimated Project Management/Administration (City Staff)	$ 75,000
Water Service Connection – ACWD Connection Fees	$ 30,453
TOTAL	**$ 3,618,712**

(d) H Street Green Street Improvements

In July, 2016, the City approved a contract award for the Granite Rock Company to complete improvements related to the H Street-Green Street Improvements Project. The City has not yet completed a final total accounting of actual costs; however, the projected total related costs are as follows:

Construction Contract (Granite Rock Company)	$3,001,180.00
Construction Contingency (5% of Construction Contract)	$150,000.00
Inspection/Material Testing Services (Ghirardelli Associates)	$132,039.60
Estimated Project Management/Administration (City Staff)	$40,800.40
Alameda County Water District – Water Service Fees	$50,000.00
Design Contract (WRECO) – Awarded by City Council 9/23/14	$499,980.00

TOTAL	**$3,874,000.00**

In order to meet the PCB and Mercury load reduction goals for 2040, the City has projected a cost of an additional $72.5 million – amounting to $3 million per year for the next 23 years.

(e) Union City Share of Alameda Countywide Program Costs

In addition to the aforementioned costs, the City has paid additional costs to the Alameda Countywide Program. For FY15/16 and FY 16/17, Union City paid $106,466 to the Alameda Countywide Program each year to support MRP2 compliance actions. The City's share of the Alameda Countywide Program's costs for the state mandated costs at issue in this Test Claim is set forth in the table below.

Task	FY	Program Cost	Union City Share (5.31%)
C3, 11 and 12 GIS Development: Psomas (Through May)	16/17	$42,752	$2,270
C3, 11 and 12 GIS Support: Geosyntec (Through April)	16/17	$29,008	$1,540
Green Infrastructure Plan Development: Horizon (Through April)	16/17	$29,500	$1,566
16/17 TOTAL			**$5,377**
Green Infrastructure Plan Development: Horizon	15/16	$40,000	$2,124
Trash mapping GIS: EOA	15/16	$25,000	$1,328
15/16 TOTAL			**$3,452**

C. <u>Continuation of C.8 Monitoring Costs</u>

As explained above, out of an abundance of caution, the City is seeking reimbursement in this Test Claim for the continuation of C.8 monitoring costs that are already before the Commission in Consolidated Test Claims 10-TC-01, 10-TC-02, 10-TC-03 and 10-TC-05.

To avoid unnecessary duplication, Union City hereby incorporates by this reference all of the portions of the record in Consolidated proceedings regarding these mandates. For the purposes of this test claim, the City has included documentation of the actual costs associated with the C.8 provisions for fiscal year 2016/2017. The Countywide Clean Water Program's expenditures for complying with Provision C.8 in fiscal year 2016/2017 were $429,476, and Union City's share of those costs was $22,805.

V. STATEWIDE COST ESTIMATE OF INCREASED COSTS FOR FISCAL YEAR 2016/2017

Since this Test Claim is based on the MRP2, the statewide impact of the permit is limited to those Bay Area jurisdictions that are subject to the MRP2. Neither Union City nor the Alameda Countywide Program has access to detailed cost information for each jurisdiction subject to the MRP2, especially those outside Alameda County. As explained in the attached Declaration of James Scanlin, the City used its own cost information and population size, combined with information available to the Alameda Countywide Program, to project estimated cost impacts for all jurisdictions subject to the MRP2. For Fiscal year 2016/2017: the C.10 Trash Load Reduction mandates are estimated to cause $16,324,000 in costs statewide; the C.3.j,C.11 and C.12 Green Infrastructure mandates are estimated to cause $414,029 in costs statewide; and the continuation of the C.8 monitoring obligations is estimated to cause $1,397,892 in costs statewide.

VI. DATES ON WHICH COSTS WERE FIRST INCURRED AFTER THE EFFECTIVE PERIOD

Most of the state mandated costs claimed above are direct costs and/or major expenditures and efforts that comprise the majority of the relevant City expenditures and that are most readily ascertainable. However, the precise dates on which Union City first incurred increased costs as a result of the new activities and modified existing activities mandated by MRP2 comprise mostly indirect costs from staff actions.

Regarding Provisions C.10.a and C.10.b, costs were first incurred after the effective date of MRP2 on January 25, 2016, when Tom Ruark, the City Engineer for Union City, received and reviewed the Draft Template for Provision C.10 of the Annual Report from the Bay

Area Stormwater Management Agencies Association (BASMAA) in preparation for the planning, coordination, and implementation of trash load reduction strategies designed to satisfy Provisions C.10.a and C.10.b. Ruark has determined that the value of his time is $207 per hour. His review of the documentation and preparation of responsive comments took approximately 60 minutes, costing the City $207.00

Regarding Provision C.3.j, costs were first incurred after the effective date of MRP2 on February 10, 2016, when Ruark received and reviewed an agenda for the first Green Infrastructure Working Group meetings organized by the Clean Water Program and BASMAA and attended by other Working Group members from the Clean Water Program. Ruark attended three of these meetings, during which the Working Group began developing a Framework for Green Infrastructure Plan Development for meeting the requirements set forth in Provisions C.3.j. Review of the agenda took approximately 15 minutes, costing the City $51.57. Attending the meetings took approximately nine hours of Ruark's, costing the City $1,863.00.

Regarding, Provisions C.11 and C.12, costs were first incurred after the effective date of MRP2 on January 29, 2016, when Ruark received and began reviewing the draft agenda from the Clean Water Program in preparation for a PCB Reduction Strategy Working Group meeting. During the meeting, which took place on February 2, 2016 and was attended by other Working Group members from the Clean Water Program, the Working Group began the process of strategizing activities to meet the PCB and Mercury load reduction goals through green infrastructure set forth in Provisions C.11 and C.12. The PCB Reduction Strategy Working Group is also supported by the Clean Water Program and BASMAA. Review of the agenda for the first meeting took approximately 15 minutes, costing the City $51.57. Attendance of this meeting took approximately three hours, so this activity cost the City $621.00.

As explained in the attached Declaration of James Scanlin, it has been determined that Arleen Feng, the Monitoring Program Manager for the Clean Water Program, spent approximately 20 minutes on January 4, 2016, reviewing and drafting correspondence with representatives of the Bay Area Stormwater Management Agencies Association (BASMAA) Monitoring/Pollutants of Concern Committee in

order to finalize an agenda for a meeting scheduled for January 6, 2016. Ms. Feng also spent approximately four hours attending the meeting on January 6, 2016. Also as a result of Scanlin's investigation and interviews, he determined that the purpose of the meeting was to continue implementation of C.8 monitoring obligations originally imposed under MRP1 and continued on and mandated by MRP2. Ms. Feng's hourly rate, including overhead, is $181.00. So, the first incurred C.8 costs under MRP2 were $36.20 on January 4, 2016, and $724.00 on January 6, 2016. As indicated above, Union City's specific share of these costs would be approximately 5.1%.

VII. IDENTIFICATION OF FUNDING SOURCES

Government Code section 17553, subdivision (b)(1)(F), requires the City to identify available funding sources for this program. With the exception of the partial funding sources set forth below, the City is not aware of any state, federal or non-local agency funds that are or will be available to fund the MRP2 new activities at issue in this Test Claim.

Pursuant to Proposition 84 – Urban Greening for Sustainable Communities Grant Program – the City was awarded $724,000 for the Decoto Green Street Project. The City received a $3 million grant from the Proposition 84 Storm Water Grant Program from the State Water Resources Control Board to implement similar improvements via the South Decoto Green Streets Project (Phase II). The City also received another $3 million in Prop 84 Storm Water Grant funds to install green infrastructure along 10 contiguous blocks along an arterial (H St. between 4th and 12th Streets) in the Decoto District. Therefore, the Proposition 84 funds represent past funding sources to offset compliance with the C.11 and C.12 green infrastructure-related requirements.

It is unlikely the City will be able to avail itself of future grant opportunities. Available grant opportunities that would likely support the City's stormwater programs have a dollar for dollar matching requirement, which constitutes a steep increase from the 30 percent matching requirements for Proposition 84 Storm Water Grant funds. The City consequently has no grant applications pending. Furthermore, multiple jurisdictions must compete for limited funding sources, creating stiff competition among municipalities. Therefore,

there are no other nonlocal agency funds that are or will be available to the City to pay for these increased costs.

As for the City's general purpose funds to support this program, the City has a Clean Water Fund, which obtains revenue from property tax assessments and a solid waste franchise surcharge. The City has no authority to increase these revenue sources without seeking voter approval under Proposition 218. Thus, the City does not have authority to increase these fees – only the voters have that authority.[7] Furthermore, the money from the Clean Water Fund is already consumed by existing stormwater compliance costs and is insufficient to cover increased activities required by MRP2.

In addition to the Clean Water Fund, the City also relied on several other City revenue sources that are restricted to roadway projects. These revenues are to be used for street and road, bicycle and pedestrian path, and transit and paratransit services. To the extent that green streets projects constitute street maintenance are repair, these funds can be accessed, but not for additional project costs associated with the green infrastructure functions.

In sum, the City is unaware of potential funding sources from local or nonlocal agencies to offset the costs associated with complying with MRP2's mandates. Furthermore, the City lacks the authority to levy fees against residents to mitigate such costs.

VIII. PRIOR MANDATE DETERMINATIONS

Government Code section 17553, subdivision (b)(1)(G), requires Test Claimants to identify prior mandate determinations that may be related to the mandates at issue. The Commission's July 31, 2009, Statement of Decision in Test Claim Nos. 03-TC-04, 03-TC-19, 03-TC-20 and 03-TC-21 (*Los Angeles Regional Water Quality Control Board Order No. 01-182*) and the Commission's March 26, 2010, Statement of Decision in Test Claim No. 07-TC-09 (*San Diego Regional Water*

[7] See *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th, holding that a stormwater fee was a property related fee governed by Article XIII D of the California Constitution and that such a fee could not be imposed unless it was approved by the voters.

Quality Control Board Order No. R9-2007-0001) include analysis that are related to the mandates at issue in Union City's Test Claim.

IX. CONCLUSION

For the reasons set forth in this Test Claim package, Union City respectfully requests that the Commission approve the City's Test Claim.

2846911.1

6. DECLARATIONS

IN SUPPORT OF UNION CITY TEST CLAIM

IN RE

MUNICIPAL REGIONAL STORMWATER PERMIT ISSUED BY

THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD,

SAN FRANCISO BAY REGION

NPDES NO. CAS612008

ISSUED AS ORDER NO. R2-2015-0049 (NOVEMBER 19, 2015)

DECLARATION OF THOMAS RUARK

I, THOMAS RUARK, declare as follows:

1. I make this declaration in support of the Test Claim submitted by the City of Union City (the "City") to the Commission on State Mandates. Except where otherwise indicated, the facts set forth below are of my own personal knowledge, and if called upon to testify, I could and would competently testify to the matters set forth herein.

2. I have received the following credentials: In 1982, I received a Bachelor's of Science degree in Civil Engineering, with concentrations in Hydraulics and Hydrology, and Environmental Engineering from the University of Illinois, Urbana-Champagne. In 1985, I received a Professional Engineer License from the California Board for Professional Engineers, Land Surveyors, and Geologists.

3. I am employed by the City of Union City as the City Engineer. I was appointed by the City Manager and have held this position since September 2011. I supervise a staff of nine, consisting of two Inspectors and five Engineers. I am responsible for designing, managing and implementing all aspects (e.g., sampling design, field work, analytical analysis, quality control, data management, interpretation and reporting) of water quality monitoring and other compliance actions required by municipal stormwater National Pollutant Discharge Elimination System ("NPDES") permits issued to the City.

4. I have a total 35 years' experience as a civil engineer. I worked as GS 12 and Project Manager (civilian civil engineer) for the Navy, during which time I oversaw design and infrastructure improvements for naval bases in nine western states. From 1986 to 1995, I worked for the private firm, Bissell & Karn, Inc. (now Greiner), where I was promoted from Project Manager to Assistant Manager, to Branch Manager. I left Greiner in 1995 and founded Ruark and Associates, where I managed a staff of 14, designed infrastructure, including storm drain systems, and oversaw development, acting as assistant city engineers and city engineers.

5. Union City is subject to the Municipal Regional Stormwater NPDES Permit, issued by the California Regional Water Quality Control Board, San Francisco Bay Region ("Regional

Board"), Order No. R2-2015-0049 ("MRP 2"). I have reviewed MRP 2 and am familiar with its requirements.

6. I have also reviewed and am familiar with the requirements of Order No. R2-2009-0074 (NPDES Permit No. CAS612008) issued by the Regional Board on October 14, 2009, amended by Order No. R2-2011-0083 on November 28, 2011 ("MRP 1"), under which the City was also a Permittee.

7. Based on my understanding of the MRP 1 and the MRP 2, I believe the MRP 2 requires Permittees, including specifically Union City, to perform new activities that are unique to local governmental entities that were not required by the MRP 1.

8. The MRP 2's new activities include the following:

(a) Monitoring.

i. Requirements. Provision C.8 of the MRP 2 requires Permittees to implement a number of water quality monitoring programs. These requirements are discussed in our 2010 test claim, which is currently pending. The City continues to incur costs necessary to comply with this Provision, which I discuss below.

(b) Trash.

ii. Requirements. Provision C.10 of the MRP 2 requires Union City and other permittees to implement a number of trash-related programs that were not required by the MRP 1.

(1) Provision C.10.a. requires Union City to undertake new activities to reduce trash loads from municipal separate storm sewer systems ("MS4s") to continue progress toward meeting the goal of 100 percent trash load reduction or no adverse impact to receiving waters from trash by July 1, 2022. (MRP 2 at 97.) The MRP 2 mandates compliance with the following schedule and compliance deadlines:

Schedule – Permittees shall reduce trash discharges from 2009 levels, described below, to receiving waters in accordance with the following schedule:

a. 70 percent by July 1, 2017; and

b. 80 percent by July 1, 2019.

(*Id.*) Though the MRP 1 stated that Permittees must achieve phased annual reductions in trash loading culminating in 100 percent by 2022, and included an enforceable deadline of 40 percent reduction by 2014, the MRP 1 was rescinded on the effective date of the MRP 2 (January 1, 2016) and so the 2017 and subsequent reductions were compelled by the MRP 2. The Regional Board recognized that the MRP 2 mandates an increased level of service, and explicitly found in Finding C.10-8 that "[t]his Permit builds on the data and information collected in the last permit term and **increases expectations of Permittees in the Permit**." (MRP 2 at A-90, emphasis added.) The Regional Board described the 70 percent reduction requirement a the "2017 mandatory deadline." (*Id.* at A-91) The Regional Board explained that the 2017 and later reductions were goals in the MRP 1 have become enforceable mandates in the MRP 2: "The **compliance deadlines** are consistent with the previous permit[']s **goals** of 70 percent trash load reductions by 2017 and 100 percent trash load reduction (or no adverse trash impact) by 2022." (*Id.*, emphasis added.) Moreover, the MPR 2 added an additional milestone of 80 percent trash load reduction by July 1, 2019. These additional phased trash load reduction mandates, beyond the requirements of the MRP 1, have compelled the City to incur significant expenses in order to comply. These trash load reduction requirements constituted a new program, when only the planning requirements and first phases of reduction were imposed in the MRP 1, and the MRP 2 requirement to achieve increased levels of load reduction is an increased level of service in comparison to the MRP.

(2) Provision C.10.b. requires Permittees to "maintain, and provide for inspection and review upon request, documentation of the design, operation, and maintenance of each of their full trash capture systems, including the mapped location and drainage area served by each system." (MRP 2 at 99.) This provision specifies detailed full trash capture system installation and maintenance instructions, which are more prescriptive, burdensome and costly to fulfill. The MRP 1 generally required Permittees to install and maintain

full trash capture devices, which allowed each municipality greater discretion in identifying effective as well as cost efficient methods for meeting trash load reduction goals. Now, under the MRP 2, compliance by means of Other Trash Management Actions (meaning non-full trash capture systems) has become so burdensome and costly that Union City has determined installation of full trash capture systems is the least costly compliance option. Provision C.10.b. requires increased activities by Union City that are best characterized as a higher level of service in comparison to the MRP 1.

(c) Green Infrastructure.

i. Sections C.3.j., C.11, and C.12 require Permittees to implement Green Infrastructure projects to comply with mercury and PCB load reduction requirements. While the MRP 1 required Permittees to pursue pilot and assessment projects, primarily on Countywide levels regarding PCBs and mercury, Green Infrastructure projects constitute a new requirement in the MRP 2, requiring new actions by Union City and other Permittees.

1. Provision C.3. requires Permittees to "complete and implement a Green Infrastructure Plan for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other storm drain infrastructure elements." (MRP 2 at 43.) The Green Infrastructure Plan is a new program that was not required by the MRP 1.

2. Sections C.11 and C.12 of the MRP 2 require Permittees to implement green infrastructure projects during the term of the Permit to achieve certain mercury and PCB load reductions performance criteria set forth in the Permit. (MRP 2 at 107-112.)

a. Provision C.11.a. "requires Permittees to implement control measures to achieve mercury load reductions. In order to comply with this requirement, Permittees must identify the mercury control measures and the watersheds and management areas in which these measures will be implemented and a time schedule for implementation." (MRP 2 at A-106.) This is a new program that was not required under the MRP 1.

b. Provision C.11.b. "requires Permittees to develop and implement an assessment methodology and data collection program to quantify mercury loads

reduced through implementation of any and all pollution prevention, source control and treatment control efforts required by the provisions of the Permit or load reductions achieved through other relevant efforts" (MRP 2 at A-107.) The MRP 1 did not include such specific requirements, but simply obliged Permittees to monitor methylmercury in runoff discharges, analyze aqueous grab samples, and report monitoring results annually. This is a new program and/or a higher level of service that was not required under the MRP 1.

c. Provision C.11.c. requires Permittees to implement green infrastructure projects during the term of the permit to achieve mercury load reductions of 48 g/year by June 30, 2020. (MRP 2 at 109-111.) The MRP 1 merely required Permittees to monitor, measure, and report mercury load reduction. The MRP 2 requirement to reduce mercury loads through green infrastructure projects is a new program requiring new actions that Union City was not required to undertake under the MRP 1.

d. Provision C.12.a. requires "Permittees to implement control measures to achieve specific PCBs load reductions. In order to comply with this requirement, Permittees must identify the PCBs control measures and the watersheds and management areas in which these measures will be implemented and a time schedule for implementation." (MRP 2 at A-116.) The MRP 1 included much more limited PCBs provisions focused primarily on a series of pilot projects as well as evaluation and reporting requirements. It did not order the load reduction actions and performance criteria included in the MRP 2, which are new programs and higher levels of service.

e. Provision C.12.c. "requires Permittees to implement green infrastructure projects during the term of the Permit to achieve PCBs load reductions of 120 g/year by June 30, 2020." (MRP 2 at A-121.) As was discussed earlier, green infrastructure projects constitute a new requirement and were not included in the MRP 1.

f. Provision C.12.d. requires Permittees to "prepare a plan and schedule for PCBs control measure implementation and corresponding reasonable assurance analysis to quantitatively demonstrate that sufficient control measures will be implemented to

attain the PCBs TMDL wasteload allocations. (MRP 2 at 119.) No such requirement appears in the MRP 1.

g. Provision C.12.e. requires that Permittees collect samples of caulk and other sealants used in storm drains and between concrete curbs and street pavement and investigate whether PCBs are present in such material and in what concentrations. (MRP 2 at 119.) No such requirement appears in the MRP 1.

9. Costs. The estimated costs associated with compliance with the new requirements of the MRP 2 are summarized below. Union City first incurred costs to comply with the MRP 2 during fiscal year 2015-2016, which ended on June 30, 2016.

(a) General Assumptions.

The anticipated costs stated below are reasonable estimates based on available information and best professional judgment of myself and other City staff, taking into account San Francisco Bay Area market rates for Program and Permittee staff, outside consultants and services, and materials.

(b) Provision C. 8 Costs.

A portion of the funds from the Alameda Countywide Clean Water Program is allocated toward monitoring costs. James Scanlin's Declaration addresses the City's share of these costs.

(c) Provision C.10 Costs.

(i) City staff has projected City-wide costs to implement these measures, as well as the costs associated with specific tasks necessary to implement the remaining C.10 provisions (including planning, design, installation, purchase, operation, and maintenance of full trash capture devices, long-term trash load reduction planning, and reporting).

(ii) As part of the City's Long Term Trash Reduction Plan, in June 2015, the City commissioned United Storm Water, Inc. to install an additional 200 full trash capture devices for a total of **$99,994.52**. The City had anticipated the new full trash capture installation requirements set forth in the 2015 MRP 2 and commissioned the installation of the trash capture devices in order to comply with Provision C.10 just prior to the MRP's effective date. This cost

was paid out of the City's clean water fund. The City had previously installed 150 units, paid by a grant from the EPA. The City is planning to install an additional 200 units in the summer of 2018, totaling 550 full trash capture devices. It is estimated that the purchase and installation of the additional 200 devices will cost the City another $100,000. Therefore, in total, Union City's cost to install trash capture devices required to comply with the MRP 2 is approximately **$200,000**.

(iii) In April 2017, the City adopted a resolution approving an appropriation of $432,500.57 from the City's Vehicle Replacement Fund and awarded a contract in the amount of **$432,423.57** to Owen Equipment of Fairfield, California for the procurement of one Storm Drain Cleaner. This contract award was determined to be vital to minimize stormwater pollution, and maintain and clean the newly installed full trash capture devices. The City had already owned a Vactor truck; however, it is an old device and unable to fulfill the full trash capture maintenance requirements set forth in the MRP 2. Renting a Vactor truck costs $10,000 per month. The City ultimately determined that purchasing a new Vactor truck would be more cost effective than renting a device. The procurement for the equipment purchase was made available from the City's Vehicle Replacement Fund.

(iv) The MRP 2 requires the City to clean the trash capture devices twice a year. It will take an estimated three months to clean all 550 units once. Three months of crew time of the Vactor crew is estimated to cost $42,500. Thus, cleaning the units twice per year will take the City six months. At a cost of $85,000 for labor for six months of the crew time, yearly maintenance costs are estimated to total **$145,000**.

(v) City staff has worked to identify best management practices and control measures that we believe will be necessary in order to achieve the target of 100% trash reduction from municipal separate storm sewer systems by July 1, 2022, and with interim milestones of 70% reduction by July 1, 2017 and 80% by July 1, 2019, as required by Provision C.10.a. These practices and measures include the following:

- Installed full trash capture devices in our high trash generating areas
- Increased cleaning of Continuous Deflection Separators (CDS) Units and Catch basins pre and post storm event season.
- Increased public awareness by installing clean water advertisement in

all of Union City's transit buses

- Increased Public Outreach with at least 8 different yearly events
- Distributed over 500 reusable bags
- Passed a Plastic Bag Ban
- Conducted a least two creek clean up events per year
- Utilized Work furlough crews to assist in weekly trash pick- up along major arterials and collector streets.
- Installed over 150 trash capture devices (TCD) in our city-owned catch basins which surround our retail and commercial properties as well as a portion of our high density residential properties.
- In addition, the City has a total of 12 CDS units installed on both private and public properties.
- It is estimated that these measures serve a combined area of 293.28 acres.

The City has and will incur internal costs to implement the actions described above, but I am not presently able to specify the magnitude of those costs.

(d) Provision C.3/C.11/C.12 Costs.

(i) As part of the City's Green Infrastructure program, the City adopted a resolution authorizing the adoption of a Green Infrastructure Plan, as required by Provision C.3. The City is seeking to retain a consultant for the preparation of some of the tasks listed in the Framework for Green infrastructure Plan Development ("Framework") and has budgeted **$15,000** to support such assistance.

(ii) The City has Provisions C.11 and C.12 are as follows:

a. On January 12, 2015, the City awarded a contract for the City's first green street infrastructure improvement project to Star Construction in the amount of $877,502.10. The final construction cost was $1,029,998.50.

Total project related costs are as follows:

Design Fees	$230,911
Construction Contract (Star Construction, Inc.)	$1,029,998.50
Utilities	$45,238.39
Construction Management (City Staff)	$99,692.41
TOTAL	**$ 1,405,840.30**

b. In September 2015, the City approved a contract award for the Granite Rock Company to complete improvements related to the South Decoto Green Streets Project. The South Decoto Green Streets Project is a sustainable redevelopment project in the Decoto District that aims to create 'green' infrastructure that mimics natural systems to reduce reliance on essential city functions such as storm drainage. The project created tree-lined, pedestrian-friendly green streets, thereby contributing to overall quality of life while reducing water and air pollution, increasing groundwater recharge, and reducing water consumption. Project related costs to date are as follows:

Design Engineering & Monitoring Contract (Bellecci and Associates)	$ 548,990
Construction Contract (Granite Rock Company)	$ 2,781,587
Construction Inspection Services Contract (Vali Cooper & Associates)/Material Testing Contract (Applied Materials)	$ 163,722
Construction Staking Contract (Bellecci & Associates)	$18,960
Estimated Project Management/Administration (City Staff)	$ 75,000
Water Service Connection – ACWD Connection Fees	$ 30,453
TOTAL	**$ 3,618,712**

c. In July, 2016, the City approved a contract award for the Granite Rock Company to complete improvements related to the H Street-Green Street Improvements Project. The City has not yet completed a final total accounting of actual costs; however, the projected total related costs are as follows:

Construction Contract (Granite Rock Company)	$3,001,180.00
Construction Contingency (5% of Construction Contract)	$150,000.00
Inspection/Material Testing Services (Ghirardelli Associates)	$132,039.60
Estimated Project Management/Administration (City Staff)	$40,800.40
Alameda County Water District – Water Service Fees	$50,000.00
Design Contract (WRECO) – Awarded by City Council 9/23/14	$499,980.00
TOTAL	**$3,874,000.00**

d. In order to meet the PCB and Mercury load reduction goals for 2040, the City has projected a cost of an additional $72.5 million – amounting to **$3 million** per year for the next 23 years.

e. In addition to the aforementioned costs, the City has paid additional costs to the Alameda Countywide Clean Water Program ("ACCWP"). For FY15/16 and FY 16/17, Union City paid $106,466 to ACCWP each year to support MRP 2 compliance actions. I have been in contact with Jim Scanlin, an Associate Environmental Compliance Specialist working with the ACCWP. He provided the breakdown of the City's share of the County's costs for the state mandated costs at issue in this Test Claim. I believe this information to be true and correct. Those costs are as follows:

Task	FY	Program Cost	Union City Share (5.31%)
C3, 11 and 12 GIS Development: Psomas (Through May)	16/17	$42,752	$2,270
C3, 11 and 12 GIS Support: Geosyntec (Through April)	16/17	$29,008	$1,540
Green Infrastructure Plan Development: Horizon (Through April)	16/17	$29,500	$1,566
TOTAL 16/17			**$5,377**
Green Infrastructure Plan Development: Horizon	15/16	$40,000	$2,124
Trash mapping GIS: EOA	15/16	$25,000	$1,328
TOTAL 15/16			**$3,452**

(e) Dates on Which Costs Were First Incurred During the Permit Term.

Most of the state mandated costs assessed in this declaration are direct costs and/or major expenditures and efforts that comprise the majority of the relevant City expenditures and that are most readily ascertainable. For the purposes of determining the precise date that Union City *first* incurred increased costs as a result of the new activities and modified existing activities mandated by MRP2, I determined that these first incurred costs were typically indirect costs from staff actions. I determined the value of my time to be $207/hour.

(i) Provisions C.10.a and C.10.b. Costs were first incurred after the effective date of MRP2 on January 25, 2016, when I received and reviewed the Draft Template for Provision C.10 of the Annual Report from the Bay Area Stormwater Management Agencies Association (BASMAA) in preparation for the planning, coordination, and implementation of trash load reduction strategies designed to satisfy Provisions C.10.a and C.10.b. My review of the

documentation and preparation of responsive comments took approximately 60 minutes, so this activity cost the City $207.00

(ii) Provision C.3.j. Costs were first incurred after the effective date of MRP2 on February 10, 2016, when I received and reviewed an agenda for the first Green Infrastructure Working Group meetings organized by the Clean Water Program and BASMAA and attended by other Working Group members from the Clean Water Program. I attended three of these meetings, during which we began developing a Framework for Green Infrastructure Plan Development for meeting the requirements set forth in Provisions C.3.j. Review of the agenda took approximately 15 minutes, costing the City $51.57. Attending the meetings took approximately nine hours of my time, costing the City$1,863.00.

(iii) Provisions C.11 and C.12. Costs were first incurred after the effective date of MRP2 on January 29, 2016, when I received and began reviewing the draft agenda from the Clean Water Program in preparation for a PCB Reduction Strategy Working Group meeting. During the meeting, which took place on February 2, 2016 and was attended by other Working Group members from the Clean Water Program, we began the process of strategizing activities to meet the PCB and Mercury load reduction goals through green infrastructure set forth in Provisions C.11 and C.12. The PCB Reduction Strategy Working Group is also supported by the Clean Water Program and BASMAA. Review of the agenda for the first meeting took approximately 15 minutes, costing the City $51.57. Attendance of this meeting took approximately three hours of my time, so this activity cost the City $621.00.

(f) Total Costs.

(i) Based on the foregoing, and excluding for the sake of simplicity the indirect costs described for timing purposes in paragraph 8(e) above, the City's aggregate costs incurred for FY 14/15, FY 15/16, and FY 16/17 in order to comply with MRP 2 Provisions C.3, C.10, and C.11/C.12 are estimated to be **$9,454,799.39**.

(ii) Attached hereto as Exhibit A are true and correct copies of documents related to the costs discussed in my declaration that I obtained from City records.

10. I am confident from my own knowledge of the MRP 2 and the MRP 1 and the City of Union City's stormwater program that the actual and/or estimated costs resulting from the MRP 2 mandates at issue in this Test Claim will exceed one thousand dollars ($1,000).

11. With the exception of the partial funding source set forth below, I am not aware of any state or federal funds that will be available to pay for these increased costs.

(a) The Proposition 84 – Urban Greening for Sustainable Communities Grant Program provided $724,000 for the Decoto Green Street Project. The City received $3 million from the Proposition 84 Storm Water Grant Program grant from the State Water Resources Control Board to implement similar improvements via the South Decoto Green Streets Project (Phase II). The City also received another $3 million in Prop 84 Storm Water Grant funds to install green infrastructure along 10 contiguous blocks along an arterial (H St. between 4th and 12th Streets) in the Decoto District.

10. I am not aware of any other local or non-local agency funds that are or will be available to pay for these increased costs. The City has a Clean Water Fund, which obtains revenue from property tax assessments and a solid waste franchise surcharge. The City has no authority to increase these revenue sources without complying with Proposition 218. Thus, the City does not have authority to increase these fees – only the voters have that authority. Furthermore, the money from the Clean Water Fund is already consumed by existing stormwater compliance costs and is insufficient to cover increased activities required by MRP2.

11. The City is not confident that it will be able to avail itself of future grant opportunities. Available grant opportunities that would likely support the City's stormwater programs have a dollar for dollar matching requirement, which constitutes a steep increase from the 30 percent matching requirements for Proposition 84 Storm Water Grant funds. The City therefore has no grant applications pending. Furthermore, multiple jurisdictions must compete for limited funding sources, creating stiff competition among municipalities.

12. I have personally reviewed the costs provided in this Declaration and I am satisfied that the information is accurate and was correctly compiled according to my instructions.

I declare under penalty of perjury under the laws of the state of California that the foregoing is true and correct.

Executed on August 14, 2017, at Union City, California.

THOMAS RUARK

2846658.1

EXHIBIT A

34009 ALVARADO-NILES ROAD
UNION CITY, CALIFORNIA 94587
T 510.675.5305 F 510.489.9468

Date: January 19, 2016

To: FINANCE DEPARTMENT

From: PUBLIC WORKS

Subject: PROGRESS PAYMENT APPROVAL - 1
CITY PROJECT NO. 15-18

****

Project: CPS Installations

Project No.: 15-18

Contractor: United Storm Water, Inc.

Purchase Order No.: 1027084

Payment Amount: $ 47,354.50

MINTZE CHENG
DIRECTOR OF PUBLIC WORKS

CITY OF UNION CITY
CPS INSTALLATIONS
CITY PROJECT NO. 15-18

Date: 1/14/2016
Purchase Order No. 1027084
Progress Payment No. 1
For Period Ending: 10/31/15

Contractor: United Storm Water, Inc.
Address: 14000 East Valley Blvd
City of Industry, CA 91746-2801

RECORD OF CHANGE ORDERS		
Initial Contract Amount:	$	99,994.52
Additional Quantities:		
Reduced Quantities:		
Total C.O. No. 1		
Total C.O. No. 2		
TOTAL PROJECT AMOUNT:	$	99,994.52

CHANGE ORDERS								
C.O. No.	DESCRIPTION	UNIT	EST. QTY	UNIT PRICE	TOTAL ESTIMATE	PP FINAL QUANTITY	TO DATE QUANTITY	TOTAL AMT.

TOTAL AMOUNT DUE UNDER CHANGE ORDER ITEMS		$	-
TOTAL AMOUNT DUE UNDER CONTRACT ITEMS		$	47,354.50
TOTAL AMOUNT	(Contract Items + Change Orders)	$	47,354.50
TOTAL SALES TAX ($55,637 of total subject to sales tax)		$	2,642.76
LESS 5% RETENTION		$	2,499.86
TOTAL AMOUNT DUE		$	47,497.40
LESS PREVIOUS PAYMENTS			
AMOUNT OF PAYMENT		$	47,497.40

PREPARED BY: MURRAY CHANG 1/19/16 CHECKED BY:

CONTRACTOR: UNITED STORM WATER, INC.

BASE BID

ITEM No.	DESCRIPTION	UNIT	EST. QTY	UNIT PRICE	Total Estimate	PP #1 QUANTITY	TO DATE QUANTITY	TOTAL AMOUNT
1	Technician - Installation	407	407	$ 66.00	$ 26,862.00	0.5	50.00%	$ 13,431.00
2	Stakebed Trk W/ Liftgate	407	407	$ 30.00	$ 12,210.00	0.5	50.00%	$ 6,105.00
3	Connector Pipe Screens (CPS)	205	205	$ 271.40	$ 55,637.00	0.5	50.00%	$ 27,818.50

TOTAL AMOUNT DUE UNDER CONTRACT ITEMS ---------- $ 47,354.50

INVOICE

14000 East Valley Blvd. • City of Industry, CA 91746-2801
(877) 71-STORM • Fax (626) 961-3166

UNITED STORM WATER, Inc.
Protecting Our Water Resources

INVOICE SW30828
CUSTOMER UNCI10000
Service Contract
Project Name

BILL TO ADDRESS
CITY OF UNION CITY
34650 7TH ST.
UNION CITY, CA 94587

JOB SITE ADDRESS
CITY OF UNION CITY
34650 7TH ST.
UNION CITY, CA 94587

SCOPE OF WORK : CPS INSTALLATIONS

DATE
10/31/2015

CONTRACT/P.O.#
PROJ NO. 15-18

SALES CODE
TERRY FLURY

NET TERMS:
NET 30

MANIFEST #

QTY.	UNIT	DESCRIPTION	DATE	W.O.#	UNIT PRICE	TOTAL AMT.
407	HR	TECHNICIAN - INSTALLATION	10/11/2015	SWO38195	66.00	26,862.00
407	HR	STAKEBED TRK W/ LIFTGATE	10/11/2015	SWO38195	30.00	12,210.00
205	EACH	CONNECTOR PIPE SCREENS (CPS)	10/11/2015	SWO38195	271.40	55,637.00

SUBTOTAL:	94,709.00
TOTAL SALES TAX:	5,285.52
TOTAL:	**99,994.52**

34009 ALVARADO-NILES ROAD
UNION CITY, CA 94587
(510) 471-3232

DATE	PO NUMBER
10/20/2015	1027084

VENDOR: 044599
UNITED STORM WATER INC
14000 E VALLEY BLVD
CITY OF INDUSTRY, CA 91746

SHIP TO: PUBLIC WORKS ADMIN
34009 ALVARADO-NILES RD
UNION CITY, CA 94587

FOB Point:
Terms: No terms
Req Del Date:
Contract No:
Special Inst:

Req. No: 1027597
Dept: PUBLIC WORKS ADMINISTRATION
Contact: LATHUNG, NANCY
Confirming? No

Quantity	Unit	Description	Unit Price	Ext. Price
		BLANKET PURCHASE ORDER INSTALL FULL TRASH CAPTURE DEVICES IN 205 STORM DRAIN CATCH BASIN, PROJECT #15-18		99,994.52

SUBTOTAL	99,994.52
TAX	0.00
FREIGHT	0.00
TOTAL	99,994.52

BILL TO: CITY OF UNION CITY
ATTENTION: FINANCE DEPARTMENT
34009 ALVARADO-NILES ROAD
UNION CITY, CA 94587

Account Number	Amount	Account Number	Amount
E 2580-3199-91518-54111	99,994.52		

Authorized Signature

VENDOR COPY

Authorized Signature (over $25,000)

Presents a Proposal Summary



2100 Plus

Combination Single Engine Sewer Cleaner with Positive Displacement Vacuum System Mounted on a Heavy Duty Truck Chassis

For

Union City 2110+ Peterbilt Chassis

NJPA Contact #022014-FSC www.njpacoop.org

List Summary

Order Qty	Part Number	Description
1	2110P-16	2100 Plus PD, 16" Vacuum, 10 yrd Debris, Combo
1	2014PSTD	1000 Gallons STD (10 yrd)
1	5002PA	80 GPM/2500 PSI in lieu of 60 GPM/2000
1	010PSTD	48w x 22h x 24d Curbside Toolbox
1	011PSTD	Aluminum Fenders
1	012PSTD	Mud Flaps
1	014PSTD	Electric/Hydraulic Four Way Boom
1	016PSTD	Color Coded Sealed Electrical System
1	018PSTD	Remote Pendant Control With 35' Cord
1	019PSTD	Vansco Electronic Package
1	020PSTD	Double Acting Hoist Cylinder
1	025PSTD	Handgun Assembly w/35' x 1/2" Hose w/Quick Disconnects
1	026PSTD	Ex-Ten Steel Cylindrical Debris Tank
1	030PSTD	Flexible Hose Guide
1	032PSTD	(3) Nozzles with Carbide Inserts w/Rack
1	045PSTD	Suction Tube Storage - 4 Pipe
1	046PSTD	1" Nozzle Pipe
1	048PSTD	1" X 10' Leader Hose
1	1001PSTD	Flat Rear Door w/Hydraulic Locks
1	1005PSTD	Dual Stainless Steel Float Shut Off System
1	1016PSTD	SS Microstrainer Prior to Blower
1	1024PSTD	Debris Body Vacuum Relief System
1	1031PSTD	Debris Deflector Plate
1	1032PSTD	48" Dump Height
1	2022PSTD	Additional Water Tank Sight Gauge
1	2023PSTD	Liquid Float Level Indicator
1	5010PSTD	Rodder System Accumulator - Jack Hammer on/off Control w/ manual valve
1	5011PSTD	3" Y-Strainer @ Water Pump w/3" Drain Valve
1	5012PSTD	Performance Package
1	5014PSTD	1" Water Relief Valve
1	5015PSTD	Midship Handgun Coupling
1	5022PSTD	Side Mounted Water Pump
1	6005PASTD	Additional Hose Footage Counter, Rear of Hose Reel, Included w/Digital Counter
1	6007PSTD	Hose Reel Manual Hyd Extend/Retract
1	6009PSTD	Hose Reel Chain Cover
1	6020PBSTD	Hydraulic Extending 15", Rotating Hose Reel, 1" x 800' Capacity
1	6017PSTD	Hydraulic Tank Shutoff Valves
1	7001PSTD	Tachometer/Chassis Engine w/Hourmeter
1	7003PSTD	Water Pump Hour Meter
1	7004PSTD	PTO Hour Meter
1	7007PSTD	Tachometer & Hourmeter/Blower
1	8000PSTD	Circuit Breakers
1	8025PSTD	LED Lights, Clearance, Back-up, Stop, Tail & Turn
1	9002PSTD	Tow Hooks, Front
1	9002PSTD	Tow Hooks, Rear
1	9003PSTD	Electronic Back-Up Alarm
1	S390ASTD	8" Vacuum Pipe Package

1	S560STD	Emergency Flare Kit
1	S590STD	Fire Extinguisher 5 Lbs.
1	1003P	Debris Body Washout
1	1004P	Debris Body Load Limit Alarm functionally tied to Debris Body Vacuum Relief
1	1007P	6" Rear Door Butterfly Valve, 3:00 position
1	1009PD	Full Rear Door Swinging Screen
1	1012PA	6" Decant System w/Knife Valve, Streetside
1	1014P	Centrifugal Separators (Cyclones)
1	1015P	Folding Pipe Rack, Curbside
1	1015PA	Folding Pipe Rack, Streetside
1	1022P	Rear Door Splash Shield
1	2011PSTD	3" Y-Strainer at Passenger Side Fill, in lieu of 2", with 25' Fill Hose
1	3015PA	Hot Shift Blower Drive (automatic Transmission)
1	3019P	Digital Water Pressure Gauge
1	4014P	180 deg. 5 x 5 Extendable/Telescoping Boom
1	4006P	Front Joystick Boom Control
1	4010P	Boom Hose Storage, Post for 5 x 5 Boom
1	4011PB	Bellypack Wireless Controls, including hose reel controls
1	4013PA	Rotatable Boom Inlet Hose, 5 x 5 Boom
1	5015P	Handgun Couplers, Front and Rear
1	5021P	Hydro Excavation Kit/Retract Reel w/50' Hose and Nozzle
1	6002PB	600' x 1" Piranha Sewer Hose 2500 PSI in lieu of STD
1	6004PB	Hose Wind Guide (Dual Roller), Auto, Indexing with Pinch Roller
1	6005PD	Digital Hose Footage Counter
1	6011P	Handgun Hose Reel w/Spring Retract
1	6019P	Rodder Pump Drain Valves
1	8001PK	Rear Mounted Directional Control Arrow Board, Whelen Traffic Advisor, LED, One-Piece, 5' Long
1	8002P	Hand Light w/Bumper Plug
1	8002PA	Waterproof, Rechargeable, Wireless, Handheld, LED Spot Light w/12V Charger and Plug
1	8004PC	Revolving LED Beacon, Rear Federal Signal SLR Series, Amber
1	8013P	Rear Beacon Limb Guard
1	8020PA	DOT 3 Lighting Package, 6 Whelen Stobe Lights
1	8027P	LED Mid-Ship Turn Signals
1	8028P	Worklights (2), LED, 5 x 5 Boom
1	8029P	Worklights (2), LED, Rear Door
1	8029PA	Worklight, LED, Operators Station
1	8029PB	Worklight, LED, Hose Reel Manhole
1	8029PC	Worklight, LED, Curb Side
1	8029PD	Worklight, LED, Street Side
1	9021PB	Camera System, Front, Rear and Both Sides
1	9023P	Safety Cone Storage Rack - Drop in Style
1	9070PA	Toolbox, Front Bumper Mounted, 16 x 12 x 18 w/(2) LED Side Markers
1	9070PB	Long Handle Tool Storage
1	9074PA	Toolbox, Driver Side Subframe, 18w x 24h x 24d
1	P112STD	Module Paint, DuPont Imron Elite - Sanded Primer Base

1	P124	Vactor 2100 Plus Body Decal, Multi-Colored
1	LOGO-APPL.	Vactor/Guzzler Logos - Applied
1	500655B-30	Vactor Standard Manual and USB Version - 1 + Dealer
1	31096D-30	1" x 25' Leader Hose Assembly
2	41280-30	(2) 3" Y-Strainer Screen
1	43516-30	(1) 1" Root Cutter Kit
1	43517-30	(1) 6" Spiral Saw Blade
1	43518-30	(1) 8" Spiral Saw Blade
1	43519-30	(1) 10" Spiral Saw Blade
1	43520-30	(1) 12" Spiral Saw Blade
1	43521-30	(1) 15" Spiral Saw Blade
1	R18099	5 Boom Lights 4 up 1 Down
1	R20909	All Vactor Switches in Dash
1	R18102	Whelen tool Box Lighting
1	R28413	Wheel Chocks and Storage
1		Mid-West Lube System Body Only
1	Chassis- Mod	Chassis Modifications Charges
1	PSPS370A-E	Customer Supplied Chassis, Single Axle, 2018 Peterbilt 348 SBA, 370 HP, Auto, 46,000 GVWR, 2013 Emissions
1	Freight Charges	

Price FOB Union City Ca	$394,007.81
Tax @9.750%	$38,415.76
Total NJPA Price including Tax	$432,423.57

THE PROPERTY HEREIN IS GUARANTEED BY MANUFACTURER'S WARRANTY ONLY AND SELLER MAKES NO WARRANTY EXPRESSED OR IMPLIED, OF MERCHANTABILITY OR OTHERWISE, OR OF FITNESS FOR ANY PARTICULAR PURPOSE, THAT EXTENDS BEYOND THE ABOVE DESCRIPTION OF THE EQUIPMENT.

NOTE: Price is good for 5-5-2017 30 Days. Cost increases due to the addition of Government mandated safety or environmental devices incurred after the date of this proposal, will be charged to you at our cost. Proof of such costs, if any, will be documented.

TAXES: SALES TAX applicable at time of delivery will be shown on our invoice. FEDERAL EXCISE TAXES, if applicable, will require payment unless a properly executed Exemption Certificate is submitted.

DELIVERY: 120-150 ARO **TERMS:** Net 10 or Approved Lease

If you have any questions please give me a call at (916) 947-0986.

Sincerely,

Michael Kennedy

Michael Kennedy
Sales Representative

DATE: MARCH 28, 2017

TO: CITY COUNCIL

FROM: MINTZE CHENG, PUBLIC WORKS DIRECTOR

SUBJECT: ADOPT THE CITY OF UNION CITY'S FRAMEWORK FOR GREEN INFRASTRUCTURE PLAN DEVELOPMENT, City Project 17-16.

In order to be incompliance with the provisions of the reissued Municipal Regional Stormwater Permit (MRP2) the City is required to adopt a Green Infrastructure Plan by June 30, 2019. The first step toward adoption of this plan is for the City to adopt the Framework for Green Infrastructure Plan Development by June 30, 2017. Tonight staff requests that City Council adopt the attached Framework.

BACKGROUND:

In order to be incompliance with Provisions C.3j, C.11 and C12 of the reissued Municipal Regional Stormwater Permit (MRP2) adopted by the San Francisco Bay Regional Water Quality Control Board on November 19, 2015 (Order No. R2-2015-0049). The City of Union City is required to prepare a Green Infrastructure Plan for the inclusion California Native and Bay Friendly plants features into appropriate projects on public and private lands to address the storm water quality impacts and pollutants from of the paving of roadways and parking lots. The said Green Infrastructure Plan shall meet the following milestones:

1. The City to adopt a framework for the Green Infrastructure Plan by June 30, 2017.
2. The Green Infrastructure plan must be approved by June 30, 2019.
3. Said Green Infrastructure plan must be submitted with the City's Annual Stormwater Report in September 2019.

The City is a member agency of the Alameda County Clean Water Program. In order to be in compliance with the MRP2, a Framework for Green Infrastructure Plan Development has been prepared and recommended to the member agencies after several review by the Green Infrastructure Technical Advisory Group.

DISCUSSION:

The attached Framework for Green infrastructure Plan Development is organized as follows:

- Section 1: Purpose of the Plan

- Section 2: Municipal Stormwater Permit Deadlines
- Section 3: Specific Tasks for Plan Development
  Identify Projects
  Develop Tracking Procedures
  Incorporate Guidelines
  Update Planning Documents
  Evaluate Funding Sources
  Training and Outreach
- Section 4: Timeframe for Plan Development
- Section 5: Staffing Assignments
- Section 6: Budget

Staff anticipates retaining consultant's assistance to prepare some of the tasks listed in Section 3 above and requests a budget of $15,000 from City's Clean Water Fund Balance for the said purposes.

FISCAL IMPACT:

In order to prepare the Green Infrastructure Plan a budget of $15000.00 should be set aside from the Clean Water Funds (Fund 2580). Once City Council approves the proposed Framework for Green Infrastructure Plan Development, funding can be made available from the existing Public Works Clean Water Program O&M budget. There is no Council action required since City Manager can authorize fund transfer within same fund. A Fund Transfer form is prepared in Attachment B for Council information.

RECOMMENDATION

It is recommended that the City Council adopt the Framework for Green Infrastructure Plan Development to prepare said Plan.

Prepared by:
Thomas Ruark, City Engineer

Submitted by:
Mintze Cheng, Public Works Director

Approved by:
Antonio Acosta, City Manager

Attachments
A. The City of Union City's Framework for Green Infrastructure Plan Development
B. Proposed Fund Transfer

Agenda Item

DATE: 6/14/2016

TO: HONORABLE MAYOR AND CITY COUNCIL

FROM: MINTZE CHENG, PUBLIC WORKS DIRECTOR

SUBJECT: A RESOLUTION TO ACCEPT WORK FOR DECOTO GREEN STREET PROJECT; CITY PROJECT NO. 11-01

Public Works staff recommends City Council for a supplemental appropriation in the amount of $87,000 for the Decoto Green Street Project and accepting work from Star Construction, Inc., for the construction cost of $1,029,998.50 and releasing of retention in the amount of $51,499.92, thirty-five days after project acceptance.

BACKGROUND

Star Construction, Inc. of San Bruno, CA, has completed the Decoto Green Street Project, which consisted of making green street infrastructure improvements along C St, between 6th St. and 9th Street. The contractor has installed all items called for on the plans such as the rain gardens, pervious pavers, storm drain system, irrigation system, landscaping and interpretive signage.

DISCUSSION

On January 12, 2015, City Council awarded the contract for City's first green street infrastructure improvements project to Star Construction in the amount of $877,502.10. The final construction cost is $1,029,998.50, which is $152,496.40 or approximately 17% above the original contract. The increase in cost was primarily due to the overrun of quantities shown in the bid schedule.

The total budget available for this project (including design, outreach, construction, post-construction monitoring, and City's in-kind contribution) is $1,358,900. The State Grant funding (Prop. 84) is for $724,000 with the remaining $634,900 to be funded from the City's Allied Waste Vehicle Impact Fund (Fund 2620) in the amount of $361,900 and Measure F Fund (Fund 2544) in the amount of $273,000.

The budget was expected to be expended as follows: design fees ($230,911), construction contract ($877,502.10), construction contingency ($87,750.21), utilities ($38,000), and construction management by staff ($124,736.8), for a total expenditure of $1,358,900.

The actual expenditure was as follows: design fees ($230,911), construction contract ($1,029,998.50), utilities and other miscellaneous expenses such as construction staking and compaction testing ($45,238.39), and

construction management by staff ($99,692.41), for a total expenditure of $1,405,840.30.

The difference between the overall actual expenditure of $1,405,840.30 versus the planned expenditure of $1,358,900 results in a deficit of $46,940.30 (rounding to $47,000) in the project budget. In addition, during last budget preparation (2014/15), Measure F fund was short of cash flow so this project fund was reduced by $40,000. It was planned to bring the project funding back up when there is positive fund balance. Thus, the total project shortfall is at $87,000.

The contractor has filed a claim with the City. City Attorney and City staff met with the contractor, his attorney and their engineering expert to respond to the validity of the claim. Since the meeting, the contractor has changed his attorney and the new attorney is in contact with the City Attorney. City Attorney has advised City staff to recommend project acceptance by City Council and the release of retention per California Contract Code with the understanding that the claim will need to be handled separately.

Staff recommends City Council appropriate additional $87,000 from Measure F Fund (Fund 2544) to close the funding gap.

FISCAL IMPACT

It is recommended that City Council to approve a supplemental fund in the amount of $87,000 from Measure F Fund (Fund 2544) to the project for the said project acceptance. Sufficient funds are available in the Measure F Fund balance for the requested action.

RECOMMENDATION

It is recommended that the City Council adopt the attached resolution appropriating supplement fund in the amount of $87,000 from Measure F Fund balance and accept the Decoto Green Street Project, City Project No. 11-01 from Star Construction, Inc.

Prepared by:

Farooq Azim, Principal Civil Engineer

Submitted by:

Mintze Cheng, Public Works Director

ATTACHMENTS:

Description	Type
Resolution	Resolution
Attachment to Reso - Appropriation Form	Attachment
Exhibit B - Notice of Completion	Exhibit

RESOLUTION NO.

RESOLUTION OF THE CITY COUNCIL OF THE CITY OF UNION CITY ACCEPT WORK FOR THE DECOTO GREEN STREET PROJECT CITYPROJECT NO. 11-01

WHEREAS, Star Construction, Inc. has successfully completed the improvements for the Decoto Green Street Project, per contract requirements; and

WHEREAS, the work has been completed to the satisfaction of the City Engineer; and

WHEREAS, said project is funded by the State Grant funding (Prop. 84) in the amount of $724,000, City's Allied Waste Vehicle Impact Fund (Fund 2620) in the amount of $361,900 and Measure F Fund (Fund 2544) in the amount of $273,000, for a total budget of $1,358,900; and

WHEREAS, the construction budget was exceeded by approximately $47,000 and the allocated Measure F funds in the 2014/15 budget had a cash flow deficit which had to be reduced by $40,000 for a total project short fall of $87,000; and

WHEREAS, Staff recommends City Council appropriate additional $87,000 from Measure F Fund (Fund 2544) to close the funding gap and sufficient funds are available in the said fund balance.

NOW, THEREFORE, BE IT RESOLVED that the City Council of the City of Union City does hereby appropriate additional $87,000 to the Decoto Green Street Project from City's Measure F Fund (Fund 2544) fund balance and

BE IT FURTHER RESOLVED that the City Council of the City of Union City accepts the improvements in the final amount of $1,029,998.50 for the Decoto Green Street Project; City Project No. 11-01; and

BE IT FURTHER RESOLVED that the City Clerk of the City of Union City be directed to record the Notice of Completion with the Office of the County Recorder of Alameda County, California; and

BE IT FURTHER RESOLVED that the City Council of the City of Union City does hereby authorize the City to make a final retention payment in the amount of $51,499.92 to Star Construction, Inc. for the completion of improvements of the Decoto Green Street Project; Project No. 11-01 in accordance with the contract requirements file at the Office of the City Engineer.

Route to Finance Department

JE # _____

Posted _____

REQUEST FOR BUDGET TRANSFER
OR
SUPPLEMENTAL APPROPRIATION

Nature of adjustment:

Inter-account Transfer [ ]
Additional Appropriation [X]

Approved by Council Action/Resolution # X

INCREASE BUDGET OF THIS ACCOUNT		DECREASE BUDGET OF THIS ACCOUNT	
Account Number	Amount	Account Number	Amount
2544-3199-91101	$ 87,000.00	Fund 2544 (Measure F)	$ 87,000.00
Decoto - Green Street		Fund Balance	

Reason for request:

Actual vs. planned construction expenditure resulted in a deficit of $ 47,000.00. Also, in 2014/15 budge cycle, measure F fund was short of cash flow so this project fund was reduced by $ 40,000.00 for a total short fall of $ 87,000.00

REQUIRED: IF A CAPITAL BUDGET IS BEING DECREASED, EXPLAIN HOW THE DECREASE WILL IMPACT THE PROJECT (ELIMINATE, POSTPONE, REDUCE SCOPE, NO IMPACT, OTHER)

DATE: **JULY 26, 2016**

TO: **CITY COUNCIL**

FROM: **MINTZE CHENG, PUBLIC WORKS DIRECTOR**

SUBJECT: **AWARD CONTRACTS FOR H STREET GREEN STREETS PROJECT AND CONSTRUCTION INSPECTION SERVICES; CITY PROJECT NO. 14-15**

Three (3) bids were received and opened on June 28, 2016. The apparent low bidder was Granite Rock Company of San Jose, California with a total base bid amount of $3,001,180.00. Public Works staff recommends City Council awarding the construction contract to Granite Rock Company. In addition to the construction contract, Public Works staff recommends award of a contract for construction inspection services to Ghirardelli Associates in the amount of $132,039.60.

BACKGROUND:

The H Street-Green Street Improvements Project is a sustainable redevelopment project that will create green infrastructure that mimics natural systems to provide essential storm drainage function and contributes to overall quality of life while reducing water and air pollution, increasing groundwater recharge and reducing water and energy consumption. The project also proposes to create a tree-lined, pedestrian-friendly roadway on H Street from 4th Street to 12th Street. This project will continue the green street improvements on H Street that were recently installed from 12th Street to 15th Street as part of the South Decoto Green Street project.

The project will modify approximately 10 blocks of H Street between 4th Street and 12th Street. The project includes intersection and mid-block improvements to capture, retain, and treat storm water runoff and to enhance the pedestrian experience. See Exhibit B, Project Location Map.

The intersection improvements will consist of storm water filtration planters, sidewalk bulb-outs and specially marked crosswalks. The bulb-outs will also serve to shorten crosswalk lengths, thereby enhancing pedestrian safety and slowing traffic.

The mid-block improvements will consist of installing permeable block pavers at the parking lanes for flow detention which will also reduce peak flow rates and peak volumes by

increasing infiltration into the soils and filter runoff to improve water quality before allowing storm water to enter the existing storm drain system, which outfalls to Alameda Creek.

New street trees and other native landscaping will be planted along the length of the streets, within and adjacent to the bio-filtration planters, to provide natural cooling, air and water purification, and enhanced natural aesthetics. This is about a six-month construction project.

DISCUSSION:

Bids were opened on June 28, 2016 with three (3) contractors submitting bids to the project. The project was bid in three segments consisting of the Base Bid (improvements from 5th Street to 11th Street, Additive Alt. 1 (improvements from 4th Street to 5th Street) and Additive Alt. 2 (improvements from 11th Street to the Railroad crossing). The bid summary sheet is attached as Exhibit A.

Due to funding constraints, staff recommends that only the Base Bid segment be awarded. The total low bid of $3,001,180.00 (Base Bid) from Granite Rock Company is $148,820.00 or approximately 5% below the engineer's estimate of $3,150,000.00. Granite Rock Company is the contractor working on the South Decoto Green Streets project. They have been providing quality work and have been very responsive in dealing with City staff and the public. Thus, staff recommends awarding the base bid contract to Granite Rock Company.

In addition to the construction contract, Public Works recommends to retain a full-time construction inspector to monitor work progress and quality control. City staff continues assuming the project management role to control cost. The City received proposals from (2) firms – Vali Cooper & Associates and Ghirardelli Associates. After reviewing the proposals and interviewing the proposed inspectors, city staff has selected Ghirardelli Associates to perform this work. Ghirardelli Associates has contracted with our City in the past and staff is pleased with their past performance. Thus, staff recommends awarding the contract in the amount of $132,039.60 for inspection services to Ghirardelli Associates.

In addition to the daily inspection services, it is important to set aside contingency funds for potential change orders. Staff recommends a $150,000 (5%) contingency being established in the project. It is also important that change order decisions be made quickly so as not to delay the contractor's operations and expose the City to delay damage. It is, therefore, proposed that the City Manager be given authority to approve contract change orders within this contingency, provided the Council is informed at the next available Council meeting of any change orders in excess of $75,000.

Thus, the estimate of project design and construction related costs are as follows:

Construction Contract (Granite Rock Company)	$3,001,180.00
Construction Contingency (5% of Construction Contract)	$150,000.00
Inspection/Material Testing Services (Ghirardelli Associates)	$132,039.60
Estimated Project Management/Administration (City Staff)	$40,800.40
Alameda County Water District – Water Service Fees	$50,000.00
Design Contract (WRECO) – Awarded by City Council 9/23/14	$499,980.00
TOTAL	**$3,874,000.00**

The original approved budget for this project (including design, outreach, construction, post-construction monitoring, and City's in-kind contribution) is $3,750,000.00. The State Grant funding (Prop. 84) is for $3,000,000 with the remaining $750,000 from a combination of the City's Allied Waste Vehicle Impact (Fund 2620) in the amount of $520,000, County Measure F Vehicle Registration Fee Fund (Fund 2544) in the amount of $230,000. This leaves a shortfall of $124,000. Staff identified an inter-fund transfer within Measure F Fund from our annual Overlay Program to the said Project for the said $124,000. Since this transfer is within City Manager's authorization, this is just for Council information and no Council action required.

FISCAL IMPACT:

Project funding is budgeted through a combination of State Prop. 84 Grant (Fund 4100 of $3,000,000), City's Allied Waste Vehicle Impact Fee (Fund 2620 of $520,000) and County Measure F Vehicle Registration Fee (Fund 2544 of $354,000). There are sufficient funds available for the requested construction contract and inspection services award.

Environmental Review:

This project received a Notice of Exemption (NOE) and was filed with the County Clerk on March 9, 2015 under CEQA review.

RECOMMENDATION:

Public Works Department recommends that the City Council adopt the attached resolution awarding a contract to Granite Rock Company of San Jose in the amount of $3,001,180.00 for the construction of the H Street Green Streets Project, City Project No. 14-15 and awarding a contract for inspection services to Ghirardelli Associates in the amount of $132,039.60.

Prepared by: Michael Renk, Civil Engineer III

Submitted by: Mintze Cheng, Public Works Director

Approved by: Antonio Acosta, City Manager

Exhibits
A. Bid Summary
B. Project Location Map
C. Cost Proposal from Ghirardelli Associates

DATE: **JANUARY 10, 2017**

TO: **HONORABLE MAYOR AND CITY COUNCIL**

FROM: **MINTZE CHENG, PUBLIC WORKS DIRECTOR**

SUBJECT: **ACCEPTANCE OF WORK FOR SOUTH DECOTO GREEN STREETS PROJECT, CITY PROJECT NO. 11-29**

The Contractor, Granite Rock Company, has completed all improvements related to the South Decoto Green Streets Project. All the necessary paperwork and reports have been submitted to the City. Staff recommends project acceptance by the City Council.

BACKGROUND

The South Decoto Green Streets Project is a sustainable redevelopment project in the Decoto District that aims to create 'green' infrastructure that mimics natural systems to reduce reliance on essential city functions such as storm drainage. The project created tree-lined, pedestrian-friendly green streets, thereby contributing to overall quality of life while reducing water and air pollution, increasing groundwater recharge, and reducing water consumption.

The project included improvements to eight contiguous blocks of streets between F Street and I Street; and between 12th Street and 15th Street. The project includes intersection improvements and mid-block improvements to capture, retain, and treat storm water runoff and to enhance the pedestrian experience.

The intersection improvements consisted of constructing storm water filtration planters or 'rain gardens', sidewalk bulb-outs and specially marked crosswalks. The mid-block improvements consisted of installing permeable block pavers within the parking lanes for flow detention and water quality treatment. Each intersection intervention includes sidewalk bulb-outs at each corner, flanked by bio-filtration planters (rain gardens). The bulb-outs also serve to shorten crosswalk lengths, thereby enhancing pedestrian safety and slow down traffic. Gaps in the curbs allow storm water to flow into bio-filtration planters for treatment.

New street trees and other native landscaping have been planted along the length of the streets, within and adjacent to the bio-filtration planters, to provide natural cooling, water purification and a greatly enhanced natural aesthetics.

DISCUSSION

Bids were received for this project on July 30, 2015. The contract was awarded to the low bidder, Granite Rock Company of San Jose, California on August 11, 2015 in the amount of $2,661,247.00. The project was substantially completed in August, 2016 and all final project punch-list items have now been resolved.

The final construction contract cost for the project work is $2,781,587.27, which is $120,340.20.27 (4.5%) above the original contract amount. The increase from the original contract is primarily accounted for by contract changes orders related to unforeseen conditions and utility conflicts. A summary of contract change orders is listed in the attached Notice of Acceptance.

Project related costs to date are as follows:

Design Engineering & Monitoring Contract (Bellecci and Associates)	$ 548,990
Construction Contract (Granite Rock Company)	$ 2,781,587
Construction Inspection Services Contract (Vali Cooper & Associates)/Material Testing Contract (Applied Materials)	$ 163,722
Construction Staking Contract (Bellecci & Associates)	$18,960
Estimated Project Management/Administration (City Staff)	$ 75,000
Water Service Connection – ACWD Connection Fees	$ 30,453
TOTAL	**$ 3,618,712**

The total amount budgeted for this project (including design, outreach, construction, post-construction monitoring, and City's in-kind contribution) is $4,000,000. The State Grant funding (Prop. 84) is budgeted for $3,000,000 with the remaining $1,000,000 is funded from a combination of the City's Clean Water Fund (Fund 2580) and Measure B Funds (Funds 2452 and 2453).

It should be noted that the State grant for the project is in the amount of $3,000,000. The actual grant expenditure is in the amount of $2,554,937.84, which leaves a balance of $445,062.16 in unspent grant funds. City also expects to spend a little less than its $1,000,000 matching share, as outlined in the grant agreement. Staff plans to discuss this situation with the State's Grant Manager to see if the grant agreement could be amended to allow the City to draw down the grant and recoup more of our costs since the City will be taking on the responsibility for the perpetual maintenance of these facilities.

FISCAL IMPACT

The City portion of the project funding is from a combination of City Clean Water Fund (Fund 2580) and Measure B (Fund 2452 and 2543). Sufficient funds are available in the approved project budget for the requested contract acceptance.

RECOMMENDATION

It is recommended that the City Council adopt the attached resolution accepting the South Decoto Green Streets Project from Granite Rock Company for the final contract amount of $ 2,781,587.27.

Prepared by: Michael Renk, Civil Engineer III

Submitted by: Mintze Cheng, Public Works Director

Approved by: Antonio Acosta, City Manager

34009 ALVARADO-NILES ROAD
UNION CITY, CA 94587
(510) 471-3232

PAYABLE THROUGH
BANK OF THE WEST

90-78
1211

VENDOR #	DATE	CHECK NUMBER	CHECK AMOUNT
001129	10/30/2015	37158	*****106,466.00

VOID AFTER 90 DAYS

PAY One Hundred Six Thousand Four Hundred Sixty Six Dollars and No Cents

NON-NEGOTIABLE

PAY TO THE ORDER
COUNTY OF ALAMEDA, TREASURER
PUBLIC WORKS-FISCAL DIVISION
399 - A ELMHURST ST 3RD FLOOR
HAYWARD, CA 94544

NON-NEGOTIABLE

COPY COPY COPY COPY COPY

UNION CITY, CA 94587 — ACCOUNTS PAYABLE CHECK — NO.37158

INVOICE NUMBER	DATE	DESCRIPTION	P.O. NUMBER	DISCOUNT	AMOUNT
15M09:19	09/30/2015	PW- COUNTYWIDE CLEAN WATER CONTRIBUT	1027152	0.00	106,466.00
					106,466.00

UNION CITY
california

34009 ALVARADO-NILES ROAD
UNION CITY, CA 94587
(510) 471-3232

PAYABLE THROUGH
BANK OF THE WEST

90-78
1211

VENDOR #	DATE	CHECK NUMBER	CHECK AMOUNT
001129	12/02/2016	43676	*****106,466.00

VOID AFTER 90 DAYS

PAY One Hundred Six Thousand Four Hundred Sixty Six Dollars and No Cents

NON-NEGOTIABLE

PAY TO THE ORDER

COUNTY OF ALAMEDA, TREASURER
PUBLIC WORKS-FISCAL DIVISION
399 - A ELMHURST ST 3RD FLOOR
HAYWARD, CA 94544

NON-NEGOTIABLE

COPY COPY COPY COPY COPY

UNION CITY, CA 94587 — ACCOUNTS PAYABLE CHECK — NO.43676

INVOICE NUMBER	DATE	DESCRIPTION	P.O. NUMBER	DISCOUNT	AMOUNT
16M11:14	11/10/2016	PW- COUNTYWIDE CLEAN WATER CONTRIBUT	1031657	0.00	106,466.00
					106,466.00

DECLARATION OF JAMES SCANLIN IN SUPPORT OF TEST CLAIM

I, JAMES SCANLIN, declare as follows:

1. I make this declaration in support of the Test Claim submitted by the City of Union City. Except where otherwise indicated, the facts set forth below are of my own personal knowledge, and if called upon to testify, I could and would competently testify to the matters set forth herein.

2. I have received the following degrees and credentials: Bachelor of Science in Political Economy of Natural Resources, University of California, Berkeley; Master of Public Administration, California State University, East Bay.

3. I am employed by Alameda County as an Associate Environmental Compliance Specialist. In that position, I serve as lead staff member working on behalf of the Alameda County Flood Control and Water Conservation District ("District") for the Alameda Countywide Clean Water Program ("Alameda Countywide Program," or "Program"). The District has the responsibility to administer and coordinate the Alameda Countywide Program.

4. The Alameda Countywide Program is a consortium made up of the Cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro and Union City; the County of Alameda; the District, and Zone 7 of the District (collectively, the "Consortium"). The Program was created in 1991 through a Memorandum of Agreement ("MOA"). Among other things, the MOA established a General Program, which carries out activities in common on behalf of the Consortium. The MOA also established a management structure and funding mechanism to carry out general Programs activities.

5. I have held my current position since 1999. In this role, I have primary responsibility on behalf of the District for administration and coordination of Alameda Countywide Program activities. My duties include preparing annual budgets and expenditure reports, coordinating and submitting required program-wide reports to the Regional Water Quality Control Board (San Francisco Bay Region) ("Regional Water Board"), and advising the Consortium on compliance with federal and state laws, regulations, and orders.

6. Union City (City), along with all other Consortium members, is subject to the Municipal Regional Stormwater NPDES Permit, issued by the Regional Water Board, Order No. R2-2015-0049 ("MRP2"). I have reviewed the MRP2 and I am familiar with its requirements.

7. I have also reviewed and am familiar with the requirements of Order No. R2-2009-0074 (NPDES Permit No. CAS612008) issued by the Regional Water Board on October 14, 2009, amended by Order No. R2-2011-0083 on November 28, 2011 (the "MRP1"), under which the City was also a Permittee.

8. In order to provide the information required under Government Code section 17553, subdivision (b)(1)(E), Tom Ruark has requested that I provide a statewide cost estimate of increased costs that all local agencies or school districts will incur to implement the mandates of the MRP during the 2016/2017 fiscal year – the fiscal year immediately following the fiscal year for which the claim was filed. I provide my cost estimates and associated methodology below.

9. Estimated Statewide Costs. MRP 2 requirements apply to the 76 cities, counties, and flood control districts subject to MRP 2. Costs for each of the Permittees will vary depending on a number of factors specific to each of the Permittees. However, the population of each Permittee is a primary determining factor in the cost to comply with MRP 2 requirements. The required mercury and PCB reductions are explicitly determined by each agency's population. Similarly, entities with higher populations will tend to have higher levels of trash reduction required to meet the MRP2's required trash reductions. Monitoring requirements in Provision C.8 vary generally based upon the relative populations of the countywide programs. As Union City is a fairly typical Bay Area city, it is reasonable to extrapolate from Union City costs to the entire MRP 2 area based upon the relative population of Union City compared to the population of the entire area covered by MRP 2. Based upon the State Department of Finance estimates, Union City's 2017 population is 73,452. The estimated 2017 population for the entire MRP area is 5,662,448. The population of the entire MRP population is approximately 77 times the population of Union City.

a. Trash Load Reduction. Like Union City, many MRP 2 Permittees are relying heavily on the installation of full trash capture devices to meet their

trash reduction requirements. Some, like Union City, are installing the smaller inlet filters. Others are relying more heavily on larger hydrodynamic separators. The inlet filters are less expensive to install than the hydrodynamic separators but require more effort to maintain. Union City expects to expend approximately $200,000 over three fiscal years to install the devices, which equates to an average of $67,000/year, and $145,000/year to maintain the devices, for a total average annual cost of $212,000/year. Other Permittees will be required to expend as similar level of effort to comply with MRP 2. Extrapolating based upon population results in an estimated fiscal year 2016/2017 statewide cost for compliance with Provision C.10 of approximately $16,324,000 (i.e., $212,000 x77). This does not include Union City's anticipated cost of $432,423.57 for the purchase of a Vactor truck. Not all entities will need to purchase a Vactor truck immediately. However, almost all will use a Vactor truck, or contract with a vendor with a Vactor truck, to complete their full trash capture device maintenance. Costs will vary depending on the approach a Permittee takes.

b. Green Infrastructure. As stated above, the amount Permittees are required to reduce PCBs and mercury through green infrastructure is dependent upon their population. During the first 18 months of MRP2, much of the required work is on developing a plan to implement green infrastructure. (A framework for the plan must be approved by the Permittees governing body by June 30, 2017.) As with the Alameda Countywide Program, other countywide programs under MRP2 are expending similar resources assisting their member agencies with their green infrastructure plan development. Therefore, extrapolating Union City's contribution to the Alameda Countywide Program for these efforts based on Union City's relative population is a reasonable approach. Union City's share of the

Program's FY 16/17 costs to date is $5,377. Extrapolating to the rest of the MRP 2 Permittees based on population would provide an estimated total cost of approximately $414,029. Union City has also expended very significant funding for the construction of green infrastructure projects. Many other MRP 2 Permittees have as well, but the number and size of projects completed to date varies widely among Permittees making it difficult to extrapolate costs across MRP 2 Permittees. However, the estimated long-term cost of $3 million/year to meet Union City's 2040 PCB and mercury load reduction target is reasonable to extrapolate to the entire MRP2 area base upon population. This would provide an estimate of $231 million/year (i.e., 77 x $3 million).

c. Continuation of Monitoring. The monitoring required under Provision C.8 is allocated to the countywide programs roughly based on the relative populations of the counties. The Countywide Clean Water Program's expenditures for complying with Provision C.8 in fiscal year 16/17 were $429,476. Union City's share of the monitoring costs is 5.31% or Program cost of $22,805. The total statewide (i.e., MRP 2 jurisdictions) cost for fiscal year 16/17 is estimated at $1,397,892.

10. The Program incurred costs on behalf of the consortium members in order to comply with the MRP mandates. In my role as lead staff member for the District, I supervise contracts with and compliance actions taken by the Program on behalf of consortium members. Below is summary of the Program's costs incurred regarding the MRP 2 mandates at issue in Union City's Test Claim and an explanation of my methodology for determining Union City's share of the costs.

Union City's share of costs are as follows:

Task	FY	Program Cost	Union City Share (5.31%)
C3, 11 and 12 GIS Development: Psomas (Through May)	16/17	$42,752	$2,270

C3, 11 and 12 GIS Support: Geosyntec (Through April)	16/17	$29,008	$1,540
C.3.j. Green Infrastructure Plan Development: Horizon (Through April)	16/17	$29,500	$1,566
C.8. Water Quality Monitoring	16/17	$429,476	$22,805
TOTAL 16/17			**$28,182**
Green Infrastructure Plan Development: Horizon	15/16	$40,000	$2,124
Trash mapping GIS: EOA	15/16	$25,000	$1,328
TOTAL 15/16			**$3,452**

These costs were taken from consultant invoices that have been paid from Alameda Countywide Program funds for the above tasks. Union City's share of Program costs (5.31%) were derived from a formula based in part on the relative area and population of the Program member agencies.

11. I investigated the Program's files and records, and interviewed Program personnel responsible for implementation of the C.8 Water Quality Monitoring program to determine the precise date that the Program, acting on behalf of Union City and other members, *first* incurred increased costs as a result of the new activities and modified existing activities mandated by MRP2. As a result of this investigation and my interviews, I determined that Arleen Feng, the Monitoring Program Manager, spent approximately 20 minutes on January 4, 2016, reviewing and drafting correspondence with representatives of the Bay Area Stormwater Management Agencies Association (BASMAA) Monitoring/Pollutants of Concern Committee in order to finalize an agenda for a meeting scheduled for January 6, 2016. Ms. Feng also spent approximately four hours attending the meeting on January 6, 2016. Also as a result of my investigation and my interviews, I determined that the purpose of the meeting was to continue implementation of C.8 monitoring obligations originally imposed under MRP1 and continued on and mandated by MRP2. Ms. Feng's hourly rate, including overhead, is $181.00. So, the first incurred C.8 costs under MRP2 were $36.20 on January 4, 2016, and $724.00 on January 6, 2016. As indicated above, Union City's specific share of these costs would be approximately 5.31%.

12. I have personally compiled the information in the tables above and believe that the information they contain is accurate.

I declare under penalty of perjury under the laws of the state of California that the

foregoing is true and correct.

Executed on August 11, 2017, at Hayward, California.

JAMES SCANLIN

2846680.1

7. DOCUMENTATION

IN SUPPORT OF UNION CITY TEST CLAIM

IN RE

MUNICIPAL REGIONAL STORMWATER PERMIT ISSUED BY

THE CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD,

SAN FRANCISO BAY REGION

NPDES NO. CAS612008

ISSUED AS ORDER NO. R2-2015-0049 (NOVEMBER 19, 2015)

EXHIBIT 1

California Regional Water Quality Control Board
San Francisco Bay Region
Municipal Regional Stormwater NPDES Permit

Order R2-2009-0074
NPDES Permit No. CAS612008
Adopted October 14, 2009
Revised November 28, 2011



California Regional Water Quality Control Board
San Francisco Bay Region
Municipal Regional Stormwater NPDES Permit

ORDER R2-2009-0074
NPDES PERMIT NO. CAS612008

Issuing Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) Permit for the discharge of stormwater runoff from the municipal separate storm sewer systems (MS4s) of the following jurisdictions and entities, which are permitted under this San Francisco Bay Municipal Regional Stormwater Permit (MRP):

The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County, the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District, which have joined together to form the Alameda Countywide Clean Water Program (Alameda Permittees)

The cities of Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, the Contra Costa County Flood Control and Water Conservation District, which have joined together to form the Contra Costa Clean Water Program (Contra Costa Permittees)

The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and Santa Clara County, which have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (Santa Clara Permittees)

The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood Control District, and San Mateo County, which have joined together to form the San Mateo Countywide Water Pollution Prevention Program (San Mateo Permittees)

The cities of Fairfield and Suisun City, which have joined together to form the Fairfield-Suisun Urban Runoff Management Program (Fairfield-Suisun Permittees)

The City of Vallejo and the Vallejo Sanitation and Flood Control District (Vallejo Permittees)

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The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter referred to as the Water Board) finds that:

FINDINGS

Incorporation of Fact Sheet

1. The Fact Sheet for the San Francisco Bay Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (Appendix I) includes cited regulatory and legal references and additional explanatory information in support of the requirements of this Permit. This information, including any supplements thereto, and any response to comments on the Tentative Orders, is hereby incorporated by reference.

Existing Permits

2. **Alameda County—**The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County (Unincorporated area), the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District have joined together to form the Alameda Countywide Clean Water Program (hereinafter collectively referred to as the Alameda Permittees) and have submitted a permit application (Report of Waste Discharge), dated July 26, 2007, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Alameda Permittees' jurisdictions. The Alameda Permittees are currently subject to NPDES Permit No. CAS0029831 issued by Order No. R2-2003-0021 on February 19, 2003, and amended by Order No. R2-2007-0025 on March 14, 2007, to the Alameda Permittees to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.

3. **Contra Costa County—**The cities of Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District have joined together to form the Contra Costa Clean Water Program (hereinafter collectively referred to as the Contra Costa Permittees) and have submitted a permit application (Report of Waste Discharge), dated September 30, 2003, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Contra Costa Permittees' jurisdictions. The Contra Costa Permittees are currently subject to NPDES Permit No. CAS0029912 issued by Order No. 99-058 on July 21, 1999, amended by Order No. R2-2003-0022 on February 9, 2003, amended by Order Nos. R2-2004-059 and R2-2004-0061 on July 21, 2004, and amended by Order No. R2-2006-0050 on July 12, 2006, to the Contra Costa Permittees to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.

4. **San Mateo County—**The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood Control District and San Mateo County have joined together to form the San Mateo Countywide Water Pollution Prevention

Program (hereinafter collectively referred to as the San Mateo Permittees) and have submitted a permit application (Report of Waste Discharge), dated January 23, 2004, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the San Mateo Permittees' jurisdictions. The San Mateo Permittees are currently subject to NPDES Permit No. CAS0029921 issued by Order No. 99-059 on July 21, 1999, amended by Order No. R2-2003-0023 on February 19, 2003, amended by Order Nos. R2-2004-0060 and R2-2004-0062 on July 21, 2004, and amended by Order R2-2007-0027 on March 14, 2007, to the San Mateo Permittees to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.

5. **Santa Clara County—**The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and the County of Santa Clara have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (hereinafter collectively referred to as the Santa Clara Permittees) and have submitted a permit application (Report of Waste Discharge), dated February 25, 2005, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Santa Clara Permittees' jurisdictions. The Santa Clara Permittees are currently subject to NPDES Permit No. CAS029718 issued by Order No. 01-024 on April 21, 2001, amended by Order No. 01-119 on October 17, 2001, and Order No. R2-2005-0035 on July 20, 2005, to the Santa Clara Permittees to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.

6. **Fairfield-Suisun—**The cities of Fairfield and Suisun City have joined together to form the Fairfield-Suisun Urban Runoff Management Program (hereinafter referred to as the Fairfield-Suisun Permittees) and have submitted a permit application (Report of Waste Discharge), dated October 17, 2007, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Fairfield-Suisun Permittees' jurisdictions. The Fairfield-Suisun Permittees are currently subject to NPDES Permit No. CAS0612005 issued by Order No. R2-2003-0034 on April 16, 2003, and amended by Order R2-2007-0026 on March 14, 2007, to the Fairfield-Suisun Permittees to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.

7. **Vallejo—**The City of Vallejo and the Vallejo Sanitary District (hereinafter referred to as the Vallejo Permittees) are currently subject to NPDES Permit No. CAS612006 issued by the United States Environmental Protection Agency (USEPA) on April 27, 1999, and that became effective on May 30, 1999, for the discharge of stormwater runoff from storm drains and watercourses within the Vallejo Permittees' jurisdictions.

8. The Alameda, Contra Costa, San Mateo, Santa Clara, Fairfield-Suisun, and Vallejo Permittees are hereinafter referred to in this Order as the Permittees.

Applicable Federal, State and Regional Regulations

9. Section 402(p) of the federal Clean Water Act (CWA), as amended by the Water Quality Act of 1987, requires NPDES permits for stormwater discharges from municipal separate storm sewer systems (MS4s), stormwater discharges associated with industrial activity (including construction activities), and designated stormwater discharges, which are considered significant contributors of pollutants to waters of the United States. On November 16, 1990, USEPA published regulations (40 CFR Part 122), which prescribe permit application requirements for MS4s pursuant to CWA 402(p). On May 17, 1996, USEPA published an Interpretive Policy

Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems, which provided guidance on permit application requirements for regulated MS4s.

10. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Board), Office of Administrative Law and the USEPA, where required.

11. The Water Board finds stormwater discharges from urban and developing areas in the San Francisco Bay Region to be significant sources of certain pollutants that cause or may be causing or threatening to cause or contribute to water quality impairment in waters of the Region. Furthermore, as delineated in the CWA section 303(d) list, the Water Board has found that there is a reasonable potential that municipal stormwater discharges cause or may cause or contribute to an excursion above water quality standards for the following pollutants: mercury, PCBs, furans, dieldrin, chlordane, DDT, and selenium in San Francisco Bay segments; pesticide associated toxicity in all urban creeks; and trash and low dissolved oxygen in Lake Merritt, in Alameda County. In accordance with CWA section 303(d), the Water Board is required to establish TMDLs for these pollutants to these waters to gradually eliminate impairment and attain water quality standards. Therefore, certain early pollutant control actions and further pollutant impact assessments by the Permittees are warranted and required pursuant to this Order.

12. The San Francisco Estuary Project, established pursuant to CWA Section 320, culminated in June 1993 with completion of its Comprehensive Conservation and Management Plan (CCMP) for the preservation, restoration, and enhancement of the San Francisco Bay-Delta Estuary. The 2007 update of the CCMP includes new and revised actions, while retaining many of the original plan's actions. The CCMP includes recommended actions in the areas of aquatic resources, wildlife, wetlands, water use, pollution prevention and reduction, dredging and waterway modification, land use, public involvement and education, and research and monitoring. Recommended actions which may, in part, be addressed through implementation of this Permit include, but are not limited to, the following:

    (1) ACTION AR-9.1 (New 2007)
    Improve understanding of sources, types, and impacts of marine debris in the Estuary.

    (5) ACTION AR-9.2 (New 2007)
    Expand existing marine debris prevention and cleanup programs and develop new initiatives to reduce discharge of debris to waterways.

    (10) ACTION PO-1.2 (Revised 2007)
    Recommend institutional and financial changes needed to place more focus on pollution prevention.

    (12) ACTION PO-1.6 (Revised 2007)
    Implement a comprehensive strategy to reduce pesticides coming into the Estuary.

    (13) ACTION PO-1.7.1 (New 2007)
    Develop product stewardship program for new commercial products to minimize future pollutant releases.

(14) ACTION PO-1.8 (New 2007)
Develop and implement programs to prevent pollution of the Estuary by other harmful pollutants like trash, bacteria, sediments, and nutrients.

(15) ACTION PO-2.1 (Revised 2007)
Pursue a mass emissions strategy to reduce pollutant discharges into the Estuary from point and nonpoint sources and to address the accumulation of pollutants in estuarine organisms and sediments.

(16) ACTION PO-2.4 (Revised 2007)
Improve the management and control of urban runoff from public and private sources.

(18) ACTION PO-3.3 (New 2007)
Accomplish large-scale improvements to Bay-Delta area infrastructure and implement pollution prevention strategies to prevent pollution threats to public health and wildlife.

(19) ACTION PO-4.1 (New 2007)
Increase regulatory incentives for municipalities, through urban runoff and other programs, to invest in projects that restore or enhance stream and wetland functions.

(20) ACTION LU-1.1 (Revised 2007)
Local land use jurisdiction's General Plans should incorporate watershed protection goals for wetlands and stream environments and to reduce pollutants in runoff.

(21) ACTION LU-1.1.1 (New 2007): Provide assistance to local agencies to ensure that applicable nonpoint source control elements are incorporated into local government and business practices.

(22) ACTION LU-1.5 (LU-3.2 in 1993 CCMP; Revised 2007)
Provide incentives and promote the use of building, planning, and maintenance guidelines for site planning and implementation of best management practices (BMPs) as related to stormwater and encourage local jurisdictions to adopt these guidelines as local ordinances.

(23) ACTION LU-1.6 (New 2007)
Continue and enhance training and certification for planners, public works departments, consultants, and builders on sustainable design and building practices with the goal of preventing or minimizing alteration of watershed functions (e.g., flood water conveyance, groundwater infiltration, stream channel and floodplain maintenance), and preventing construction-related erosion and post-construction pollution.

(24) ACTION LU-2.7 (New 2007)
Adopt and implement policies and plans that protect and restore water quality, flood water storage, and other natural functions of stream and wetland systems.

(25) ACTION LU-3.1 (New 2007)
Promote, encourage, and support collaborative partnerships with broad stakeholder representation, such as watershed councils, in order to develop diverse community-based approaches to long-term stewardship.

(26) ACTION LU-4.1 (Revised 2007)
Educate the public about how human actions impact the Estuary and its watersheds.

(28) ACTION PI-2.5 (Revised 2007)
Assist in the development of long-term educational programs designed to prevent pollution to the Estuary's ecosystem and provide assistance to other programs as needed.

13. Under section 13389 of the California Water Code, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA).

Nature of Discharges and Sources of Pollutants

14. Stormwater runoff is generated from various land uses in all the hydrologic sub basins in the Basin and discharges into watercourses, which in turn flow into Central, Lower and South San Francisco Bay.

15. The quality and quantity of runoff discharges vary considerably and are affected by hydrology, geology, land use, season, and sequence and duration of hydrologic events. Pollutants of concern in these discharges are certain heavy metals; excessive sediment production from erosion due to anthropogenic activities; petroleum hydrocarbons from sources such as used motor oil; microbial pathogens of domestic sewage origin from illicit discharges; certain pesticides associated with acute aquatic toxicity; excessive nutrient loads, which can cause or contribute to the depletion of dissolved oxygen and/or toxic concentrations of dissolved ammonia; trash, which impairs beneficial uses including, but not limited to, support for aquatic life; and other pollutants which can cause aquatic toxicity in the receiving waters.

16. Federal, State or regional entities within the Permittees' boundaries, not currently named in this Order, operate storm drain facilities and/or discharge stormwater to the storm drains and watercourses covered by this Order. The Permittees may lack jurisdiction over these entities. Consequently, the Water Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. The Water Board will consider such facilities for coverage under its NPDES permitting scheme pursuant to US EPA Phase II stormwater regulations. Under Phase II, the Water Board can permit these federal, State, and regional entities through use of the Statewide Phase II NPDES General Permit.

17. Certain pollutants present in stormwater and/or urban runoff can be derived from extraneous sources over which the Permittees have limited or no direct jurisdiction. Examples of such pollutants and their respective sources are polycyclic aromatic hydrocarbons (PAHs), which are products of internal combustion engine operation and other sources; heavy metals, such as copper from vehicle brake pad wear and zinc from vehicle tire wear; dioxins as products of combustion; polybrominated diphenyl ethers that are incorporated in many household products as flame retardants; mercury resulting from atmospheric deposition; and naturally occurring minerals from local geology. All these pollutants, and others, can be deposited on paved surfaces, rooftops, and other impervious surfaces as fine airborne particles—thus yielding stormwater runoff pollution that is unrelated to the activity associated with a given project site.

18. The Water Board will notify interested agencies and interested persons of the availability of reports, plans, and schedules, including Annual Reports, and will provide interested persons with an opportunity for a public hearing and/or an opportunity to submit their written views and recommendations. The Water Board will consider all comments and may modify the reports, plans, or schedules or may modify this Order in accordance with applicable law. All submittals required by this Order conditioned with acceptance by the Water Board will be subject to these notification, comment, and public hearing procedures.

19. This Order supersedes and rescinds Order Nos. 99-058, 99-059, 01-024, R2-2003-0021, R2-2003-0034, and supersedes NPDES Permit Nos. CAS0029831, CAS0029912, CAS0029921, CAS029718, CAS0612005, and CAS612006.

    This Order serves as a NPDES permit, pursuant to CWA section 402, or amendments thereto, and shall become effective December 1, 2009, provided the Regional Administrator, USEPA, Region 9, has no objections.

IT IS HEREBY ORDERED that the Permittees, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted hereunder and the provisions of the Clean Water Act as amended and regulations and guidelines adopted hereunder, shall comply with the following:

A. DISCHARGE PROHIBITIONS

A.1. The Permittees shall, within their respective jurisdictions, effectively prohibit the discharge of non-stormwater (materials other than stormwater) into, storm drain systems and watercourses. NPDES-permitted discharges are exempt from this prohibition. Provision C.15 describes a tiered categorization of non-stormwater discharges based on potential for pollutant content that may be discharged upon adequate assurance that the discharge contains no pollutants of concern at concentrations that will impact beneficial uses or cause exceedances of water quality standards.

A.2. It shall be prohibited to discharge rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas.

B. RECEIVING WATER LIMITATIONS

B.1. The discharge shall not cause the following conditions to create a condition of nuisance or to adversely affect beneficial uses of waters of the State:

- **a.** Floating, suspended, or deposited macroscopic particulate matter, or foam;
- **b.** Bottom deposits or aquatic growths;
- **c.** Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
- **d.** Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
- **e.** Substances present in concentrations or quantities that would cause deleterious effects on aquatic biota, wildlife, or waterfowl, or that render any of these unfit for human consumption.

B.2. The discharge shall not cause or contribute to a violation of any applicable water quality standard for receiving waters. If applicable water quality objectives are adopted and approved by the State Board after the date of the adoption of this Order, the Water Board may revise and modify this Order as appropriate.

C.1. Compliance with Discharge Prohibitions and Receiving Water Limitations

The Permittees shall comply with Discharge Prohibitions A.1 and A.2 and Receiving Water Limitations B.1 and B.2 through the timely implementation of control measures and other actions as specified in Provisions C.2 through C.15.

If exceedance(s) of water quality standards or water quality objectives (collectively, WQSs) persist in receiving waters, the Permittees shall comply with the following procedure:

C.1.a. Upon a determination by either the Permittee(s) or the Water Board that discharges are causing or contributing to an exceedance of an applicable WQS, the Permittee(s) shall notify, within no more than 30 days, and thereafter, except for any exceedances of WQSs for pesticides, trash, mercury, polychlorinated biphenols, copper, polybrominated diphenyl ethers, and selenium that are addressed pursuant to Provisions C.8 through C.14 of this Order, submit a report to the Water Board that describes BMPs that are currently being implemented, and the current level of implementation, and additional BMPs that will be implemented, and/or an increased level of implementation, to prevent or reduce the discharge of pollutants that are causing or contributing to the exceedance of WQSs. The report may be submitted in conjunction with the Annual Report, unless the Water Board directs an earlier submittal, and shall constitute a request to the Water Board for amendment of this NPDES Permit. The report and application for amendment shall include an implementation schedule. The Water Board may require modifications to the report and application for amendment; and

C.1.b. Submit any modifications to the report required by the Water Board within 30 days of notification.

As long as the Permittees have complied with the procedures set forth above, they do not have to repeat the same procedure for continuing or recurring exceedances of the same WQSs unless directed by the Water Board to develop additional control measures and BMPs and reinitiate the Permit amendment process.

C.2. Municipal Operations

The purpose of this provision is to ensure development and implementation of appropriate BMPs by all Permittees to control and reduce non-stormwater discharges and polluted stormwater to storm drains and watercourses during operation, inspection, and routine repair and maintenance activities of municipal facilities and infrastructure.

C.2.a. Street and Road Repair and Maintenance

i. Task Description – Asphalt/Concrete Removal, Cutting, Installation and Repair - The Permittees shall develop and implement appropriate BMPs at street and road repair and/or maintenance sites to control debris and waste materials during road and parking lot installation, repaving or repair maintenance activities, such as those described in the California Stormwater Quality Association's Handbook for Municipal Operations.

ii. Implementation Levels

(1) The Permittees shall require proper management of concrete slurry and wastewater, asphalt, pavement cutting, and other street and road maintenance materials and wastewater to avoid discharge to storm drains from such work sites. The Permittees shall coordinate with sanitary sewer agencies to determine if disposal to the sanitary sewer system is available for the wastewater generated from these activities provided that appropriate approvals and pretreatment standards are met.

(2) The Permittees shall require sweeping and/or vacuuming to remove debris, concrete, or sediment residues from such work sites upon completion of work. The Permittees shall require cleanup of all construction remains, spills and leaks using dry methods (e.g., absorbent materials, rags, pads, and vacuuming), as described in the Bay Area Stormwater Management Agencies Association's (BASMAA's) Blueprint for a Clean Bay.

iii. Reporting – The Permittees shall report on implementation of and compliance with these BMPs in the Annual Report

C.2.b. Sidewalk/Plaza Maintenance and Pavement Washing

i. Task Description – The Permittees shall implement, and require to be implemented, BMPs for pavement washing, mobile cleaning, pressure wash operations in such locations as parking lots and garages, trash areas, gas station fueling areas, and sidewalk and plaza cleaning, which prohibit the discharge of polluted wash water and non-stormwater to storm drains. The Permittees shall implement the BMPs included in BASMAA's Mobile Surface Cleaner Program. The Permittees shall coordinate with sanitary sewer agencies to determine if disposal to the sanitary sewer is available for the wastewater generated from these activities provided that appropriate approvals and pretreatment standards are met.

ii. Reporting – The Permittees shall report on implementation of and compliance with these BMPs in their Annual Report.

C.2.c. Bridge and Structure Maintenance and Graffiti Removal

i. Task Description

(1) The Permittees shall implement appropriate BMPs to prevent polluted stormwater and non-stormwater discharges from bridges and structural maintenance activities directly over water or into storm drains.

(2) The Permittees shall implement BMPs for graffiti removal that prevent non-stormwater and wash water discharges into storm drains.

ii. Implementation Levels

(1) The Permittees shall prevent all debris, including structural materials and coating debris, such as paint chips, or other debris and pollutants generated in bridge and structure maintenance or graffiti removal from entering storm drains or water courses.

(2) The Permittees shall protect nearby storm drain inlets before removing graffiti from walls, signs, sidewalks or other structures. The Permittees shall prevent any discharge of debris, cleaning compound waste, paint waste or wash water due to graffiti removal from entering storm drains or watercourses.

(3) The Permittees shall determine the proper disposal method for wastes generated from these activities. The Permittees shall train their employees and/or specify in contracts about these proper capture and disposal methods for the wastes generated.

iii. Reporting – The Permittees shall report on implementation of and compliance with these BMPs in their Annual Report.

C.2.d. Stormwater Pump Stations

The objective of this sub-provision is to prevent the discharge of water with low dissolved oxygen (DO) from pump stations, and to explore the use of pump stations for trash capture and removal from waters to protect beneficial uses of receiving waters.

i. Task Description – Operation and Maintenance of Stormwater Pump Stations – The Permittees shall develop and implement measures to operate, inspect, and maintain these facilities to eliminate non-stormwater discharges containing pollutants, and to reduce pollutant loads in the stormwater discharges to comply with WQSs.

ii. Implementation Levels – The Permittees shall comply with the following implementation measures to reduce polluted water discharges from Permittee-owned or operated pump stations:

(1) Complete an inventory of pump stations within each Permittee's jurisdiction, including locations, and key characteristics[1] by March 1, 2010.

(2) Inspect and collect DO data from all pump stations twice a year during the dry season after July 1, starting in 2010. DO monitoring is exempted where all discharge from a pump station remains in the stormwater collection system or infiltrates into a dry creek immediately downstream.

(3) If DO levels are at or below 3 milligrams per liter (3 mg/L), apply corrective actions, such as continuous pumping at a low flow rate, aeration, or other appropriate methods to maintain DO concentrations of the discharge above 3 mg/L. Verify corrective actions are effective by increasing DO monitoring interval to weekly until two weekly samples are above 3 mg/L.

(4) Starting in fall 2010, inspect pump stations a minimum of two times during the wet season in the first business day after ¼-inch and larger storm events after a minimum of a two week antecedent period with no precipitation. Post-storm inspections shall collect and report presence and quantity estimates of trash, including presence of odor, color, turbidity, and floating hydrocarbons. Remove debris and trash and replace any oil absorbent booms, as needed.

iii. Reporting – The Permittees shall report information resulting from C.2.d.ii.(2)-(4), including DO monitoring data and subsequent corrective actions taken to verify compliance with the 3 mg/L implementation level, in their Annual Report, and maintain records of inspection and maintenance activities and volume or mass of waste materials removed from pump stations.

C.2.e. Rural Public Works Construction and Maintenance

i. Task Description – Rural Road and Public Works Construction and Maintenance - For the purpose of this provision, rural means any watershed or portion thereof that is developed with large lot home-sites, such as one acre or larger, or with primarily agricultural, grazing or open space uses. The Permittees shall implement and require contractors to implement BMPs for erosion and sediment control during and after construction for maintenance activities on rural roads, particularly in or adjacent to stream channels or wetlands. The Permittees shall notify the Water Board, the California Department of Fish and Game and the U.S. Army Corps of Engineers, where applicable, and obtain appropriate agency permits for rural public works activities before work in or near creeks and wetlands.

[1] Characteristics include name of pump station, latitude and longitude in WGS 84, number of pumps, drainage area in acres, dominant land use(s), first receiving water body, maximum pumping capacity of station in gallons per minute (gpm), flow measurement capability (Y or N), flow measurement method, average wet season discharge rate in gpm, dry season discharge (Y, N, or unknown), nearest municipal wastewater treatment plant, wet well storage capacity in gallons, trash control (Y or N), trash control measure, and date built or last updated.

ii. Implementation Level

(1) The Permittees shall develop, where they do not already exist, and implement BMPs for erosion and sediment control measures during construction and maintenance activities on rural roads, including developing and implementing appropriate training and technical assistance resources for rural public works activities, by April 1, 2010.

(2) The Permittees shall develop and implement appropriate BMPs for the following activities, which minimize impacts on streams and wetlands in the course of rural road and public works maintenance and construction activities:

(a) Road design, construction, maintenance, and repairs in rural areas that prevent and control road-related erosion and sediment transport;

(b) Identification and prioritization of rural road maintenance on the basis of soil erosion potential, slope steepness, and stream habitat resources;

(c) Construction of roads and culverts that do not impact creek functions. New or replaced culverts shall not create a migratory fish passage barrier, where migratory fish are present, or lead to stream instability;

(d) Development and implementation of an inspection program to maintain rural roads' structural integrity and prevent impacts on water quality;

(e) Maintenance of rural roads adjacent to streams and riparian habitat to reduce erosion, replace damaging shotgun culverts and excessive erosion;

(f) Re-grading of unpaved rural roads to slope outward where consistent with road engineering safety standards, and installation of water bars as appropriate; and

(g) Replacement of existing culverts or design of new culverts or bridge crossings shall use measures to reduce erosion, provide fish passage and maintain natural stream geomorphology in a stable manner.

(3) The Permittees shall develop or incorporate existing training and guidance on permitting requirements for rural public works activities so as to stress the importance of proper planning and construction to avoid water quality impacts.

(4) The Permittees shall provide training incorporating these BMPs to rural public works maintenance staff at least twice within this Permit term.

iii. Reporting – The Permittees shall report on the implementation of and compliance with BMPs for the rural public works construction and maintenance activities in their Annual Report, including reporting on increased maintenance in priority areas.

C.2.f. Corporation Yard BMP Implementation

i. Task Description – Corporation Yard Maintenance

(1) The Permittees shall prepare, implement, and maintain a site specific Stormwater Pollution Prevention Plan (SWPPP) for corporation yards, including municipal vehicle maintenance, heavy equipment and maintenance vehicle parking areas, and material storage facilities to comply with water quality standards. Each SWPPP shall incorporate all applicable BMPs that are described in the California Stormwater Quality Association's Handbook for Municipal Operations and the Caltrans Storm Water Quality Handbook Maintenance Staff Guide, May 2003, and its addenda, as appropriate.

(2) The requirements in this provision shall apply only to facilities that are not already covered under the State Board's Industrial Stormwater NPDES General Permit.

(3) The site specific SWPPPs for corporation yards shall be completed by July 1, 2010.

ii. Implementation Level

(1) Implement BMPs to minimize pollutant discharges in stormwater and prohibit non-stormwater discharges, such as wash waters and street sweeper, vactor, and other related equipment cleaning wash water. Pollution control actions shall include, but not be limited to, good housekeeping practices, material and waste storage control, and vehicle leak and spill control.

(2) Routinely inspect corporation yards to ensure that no non-stormwater discharges are entering the storm drain system and, during storms, pollutant discharges are prevented to the maximum extent practicable. At a minimum, an inspection shall occur before the start of the rainy season.

(3) Plumb all vehicle and equipment wash areas to the sanitary sewer after coordination with the local sanitary sewer agency and equip with a pretreatment device (if necessary) in accordance with the requirements of the local sanitary sewer agency.

(4) Use dry cleanup methods when cleaning debris and spills from corporation yards. If wet cleaning methods must be used (e.g., pressure washing), the Permittee shall ensure that wash water is collected and disposed in the sanitary sewer after coordination with the local sanitary sewer agency and in accordance with the requirements of the local sanitary sewer agency. Any private companies hired by the Permittee to perform cleaning activities on Permittee-owned property shall follow the same requirements. In areas where sanitary sewer connection is not available, the Permittees shall collect and haul the wash water to a municipal wastewater treatment plant, or implement appropriate BMPs and dispose

of the wastewater to land in a manner that does not adversely impact surface water or groundwater.

(5) Outdoor storage areas containing waste pollutants shall be covered and/or bermed to prevent discharges of polluted stormwater runoff or run-on to storm drain inlets.

iii. Reporting – The Permittees shall report on implementation of SWPPPs, the results of inspections, and any follow-up actions in their Annual Report.

C.3. New Development and Redevelopment

The goal of Provision C.3 is for the Permittees to use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. This goal is to be accomplished primarily through the implementation of low impact development (LID) techniques.

C.3.a. New Development and Redevelopment Performance Standard Implementation

i. Task Description – At a minimum each Permittee shall:

(1) Have adequate legal authority to implement all requirements of Provision C.3;

(2) Have adequate development review and permitting procedures to impose conditions of approval or other enforceable mechanisms to implement the requirements of Provision C.3. For projects discharging directly to CWA section 303(d)-listed waterbodies, conditions of approval must require that post-development runoff not exceed pre-development levels for such pollutants that are listed;

(3) Evaluate potential water quality effects and identify appropriate mitigation measures when conducting environmental reviews, such as under CEQA;

(4) Provide training adequate to implement the requirements of Provision C.3 for staff, including interdepartmental training;

(5) Provide outreach adequate to implement the requirements of Provision C.3, including providing education materials to municipal staff, developers, contractors, construction site operators, and owner/builders, early in the planning process and as appropriate;

(6) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable review, but not regulated by Provision C.3, encourage the inclusion of adequate site design measures that may include minimizing land disturbance and impervious surfaces (especially parking lots); clustering of structures and pavement; directing roof runoff to vegetated areas; use of micro-detention, including distributed landscape-based detention; preservation of open space; protection and/or restoration of riparian areas and wetlands as project amenities;

(7) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable review, but not regulated by Provision C.3, encourage the inclusion of adequate source control measures to limit pollutant generation, discharge, and runoff. These source control measures should include:

- Storm drain stenciling.

- Landscaping that minimizes irrigation and runoff, promotes surface infiltration where possible, minimizes the use of pesticides and fertilizers, and incorporates appropriate sustainable landscaping practices and programs such as Bay-Friendly Landscaping.
- Appropriate covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas.
- Covered trash, food waste, and compactor enclosures.
- Plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's authority and standards:
  - Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants.
  - Dumpster drips from covered trash and food compactor enclosures.
  - Discharges from outdoor covered wash areas for vehicles, equipment, and accessories.
  - Swimming pool water, if discharge to onsite vegetated areas is not a feasible option.
  - Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option.

(8) Revise, as necessary, General Plans to integrate water quality and watershed protection with water supply, flood control, habitat protection, groundwater recharge, and other sustainable development principles and policies (e.g., referencing the Bay-Friendly Landscape Guidelines).

ii. Implementation Level – Most of the elements of this task should already be fully implemented because they are required in the Permittees' existing stormwater permits.

Due Dates for Full Implementation – Immediate for C.3.a.i.(1)-(5), May 1, 2010 for C.3.a.i.(6)-(7), and December 1, 2010 for C.3.a.i.(8). For Vallejo Permittees: December 1, 2010 for C.3.a.i.(1)-(8)

iii. Reporting – Provide a brief summary of the method(s) of implementation of Provisions C.3.a.i.(1)–(8) in the 2011 Annual Report.

C.3.b. Regulated Projects

i. Task Description – The Permittees shall require all projects fitting the category descriptions listed in Provision C.3.b.ii below (hereinafter called Regulated Projects) to implement LID source control, site design, and stormwater treatment onsite or at a joint stormwater treatment facility[2] in accordance with Provisions C.3.c and C.3.d, unless the Provision C.3.e alternate compliance options are evoked. For adjacent Regulated Projects that will discharge runoff to a joint stormwater treatment facility, the treatment facility must be completed by

[2] **Joint stormwater treatment facility** – Stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects located adjacent to each other,

the end of construction of the first Regulated Project that will be discharging runoff to the joint stormwater treatment facility.

Regulated Projects, as they are defined in this Provision, do not include detached single-family home projects that are not part of a larger plan of development.

ii. Regulated Projects are defined in the following categories:

(1) **Special Land Use Categories**

(a) **New Development or redevelopment projects** that fall into one of the categories listed below and that create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire project site). This category includes development projects of the following four types on public or private land that fall under the planning and building authority of a Permittee:

(i) Auto service facilities, described by the following Standard Industrial Classification (SIC) Codes: 5013, 5014, 5541, 7532-7534, and 7536-7539;

(ii) Retail gasoline outlets;

(iii) Restaurants (SIC Code 5812); or

(iv) Uncovered parking lots that are stand-alone or part of any other development project. This category includes the top uncovered portion of parking structures unless drainage from the uncovered portion is connected to the sanitary sewer along with the covered portions of the parking structure.

(b) For redevelopment projects in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv), specific exclusions are:

(i) Interior remodels;

(ii) Routine maintenance or repair such as:

- roof or exterior wall surface replacement,
- pavement resurfacing within the existing footprint.

(c) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **more than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).

(d) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must

be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

(e) For any private development project in the categories specified in Provisions C.3.b.ii.(1)(a)(i)-(iv) for which a planning application has been deemed complete by a Permittee on or before the Permit effective date, the lower 5000 square feet impervious surface threshold (for classification as a Regulated Project) shall not apply so long as the project applicant is diligently pursuing the project. Diligent pursuance may be demonstrated by the project applicant's submittal of supplemental information to the original application, plans, or other documents required for any necessary approvals of the project by the Permittee. If during the time period between the Permit effective date and the required implementation date of December 1, 2011, for the 5000 square feet threshold, the project applicant has not taken any action to obtain the necessary approvals from the Permittee, the project will then be subject to the lower 5000 square feet impervious surface threshold specified in Provision C.3.b.ii.(1).

(f) For any private development project in the categories specified in Provisions C.3.b.ii.(1)(a)(i)-(iv) with an application deemed complete after the Permit effective date, the lower 5000 square feet impervious surface threshold (for classification as a Regulated Project) shall not apply if the project applicant has received final discretionary approval for the project before the required implementation date of December 1, 2011, for the 5000 square feet threshold.

(g) For public projects for which funding has been committed and construction is scheduled to begin by December 1, 2012, the lower 5000 square feet of impervious surface threshold (for classification as a Regulated Project) shall not apply.

Effective Date – Immediate, except December 1, 2010, for Vallejo Permittees.

Beginning December 1, 2011, all references to 10,000 square feet in Provision C.3.b.ii.(1) change to 5,000 square feet.

(2) **Other Development Projects**

New development projects that create 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. This category includes development projects on public or private land that fall under the planning and building authority of a Permittee. Detached single-family home projects that are not part of a larger plan of development are specifically excluded.

Effective Date – Immediate, except December 1, 2010, for Vallejo Permittees.

(3) **Other Redevelopment Projects**

Redevelopment projects that create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. Redevelopment is any land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred. This category includes redevelopment projects on public or private land that fall under the planning and building authority of a Permittee.

Specific exclusions to this category are:

- Interior remodels.
- Routine maintenance or repair such as:
  - roof or exterior wall surface replacement, or
  - pavement resurfacing within the existing footprint.

(a) Where a redevelopment project results in an alteration of **more than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).

(b) Where a redevelopment results in an alteration **of less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

Effective Date – Immediate, except December 1, 2010, for Vallejo Permittees.

(4) **Road Projects**

Any of the following types of road projects that create 10,000 square feet or more of newly constructed contiguous impervious surface and that fall under the building and planning authority of a Permittee:

(a) Construction of new streets or roads, including sidewalks and bicycle lanes built as part of the new streets or roads.

(b) Widening of existing streets or roads with additional traffic lanes.

(i) Where the addition of traffic lanes results in an alteration of **more than 50 percent** of the impervious surface of an existing street or road that was not subject to Provision C.3, **the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design** (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire street or road that had additional traffic lanes added).

(ii) Where the addition of traffic lanes results in an alteration **of less than 50 percent** of the impervious surface of an existing street or road that was not subject to Provision C.3, **only the new and/or replaced impervious surface of the project must be included in the treatment system design** (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from only the new traffic lanes). However, if the stormwater runoff from the existing traffic lanes and the added traffic lanes cannot be separated, any onsite treatment system must be designed and sized to treat stormwater runoff from the entire street or road. If an offsite treatment system is installed or in-lieu fees paid in accordance with Provision C.3.e, the offsite treatment system or in-lieu fees must address only the stormwater runoff from the added traffic lanes.

(c) Construction of impervious trails that are greater than 10 feet wide or are creek-side (within 50 feet of the top of bank).

(d) Specific exclusions to Provisions C.3.b.ii.(4)(a)-(c) are:

- Sidewalks built as part of new streets or roads and built to direct stormwater runoff to adjacent vegetated areas.
- Bicycle lanes that are built as part of new streets or roads but are not hydraulically connected to the new streets or roads and that direct stormwater runoff to adjacent vegetated areas.
- Impervious trails built to direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees.
- Sidewalks, bicycle lanes, or trails constructed with permeable surfaces.[3]
- Caltrans highway projects and associated facilities.

(e) For any private road or trail project described by Provisions C.3.b.ii.(4)(b) or (c) for which a planning application has been deemed complete by a Permittee on or before the Permit effective date, the requirements of Provisions C.3.b.ii.(4)(b) or (c) to classify the project as a Regulated Project shall not apply so long as the project applicant is diligently pursuing the project. Diligent pursuance

[3] **Permeable surfaces** include pervious concrete, porous asphalt, unit pavers, and granular materials.

may be demonstrated by the project applicant's submittal of supplemental information to the original application, plans, or other documents required for any necessary approvals of the project by the Permittee. If during the time period between the Permit effective date and the required implementation date of December 1, 2011, for Provisions C.3.b.ii.(4)(b) and (c), the project applicant has not taken any action to obtain the necessary approvals from the Permittee, the project will then be classified as a Regulated Project under Provisions C.3.b.ii.(4)(b) or (c).

(f) For any private road or trail project with an application deemed complete after the Permit effective date, the requirements of Provisions C.3.b.i.(4)(b) or (c) to classify the project as a Regulated Project shall not apply if the project applicant has received final discretionary approval for the project before the required implementation date of December 1, 2011, for Provisions C.3.b.ii.(4)(b) and (c).

(g) For any public road or trail project for which funding has been committed and construction is scheduled to begin by December 1, 2012, the requirements of Provisions C.3.b.i.(4)(b) or (c) to classify the project as a Regulated Project shall not apply.

Effective Date – Immediate for C.3.b.ii.(4)(a) and (d)-(g), and December 1, 2011, for C.3.b.ii.(4)(b) and (c). For Vallejo Permittees: Immediate for C.3.b.ii.(4)(d)-(g), and December 1, 2011 for C.3.b.ii.(4)(a)-(c).

iii. Green Street Pilot Projects

The Permittees shall cumulatively complete ten pilot green street projects that incorporate LID techniques for site design and treatment in accordance with Provision C.3.c and that provide stormwater treatment sized in accordance with Provision C.3.d. It is also desirable that they meet or exceed the Bay-Friendly Landscape Scorecard minimum requirements (see www.BayFriendly.org).

(1) Parking lot projects that provide LID treatment in accordance with Provisions C.3.c and Provision C.3.d. for stormwater runoff from the parking lot and street may be considered pilot green street projects.

(2) A Regulated Project (as defined in Provision C.3.b.ii) may not be counted as one of the ten pilot green street projects.

(3) At least two pilot green street projects must be located in each of the following counties: Alameda, Contra Costa, San Mateo, and Santa Clara.

(4) The Permittees shall construct the ten pilot green street projects in such a manner that they, as a whole:

(a) Are representative of the various types of streets: arterial, collector, and local; and

(b) Contain the following key elements:

(i) Stormwater storage for landscaping reuse or stormwater treatment and/or infiltration for groundwater replenishment through the use of natural feature systems;

(ii) Creation of attractive streetscapes that enhance neighborhood livability by enhancing the pedestrian environment and introducing park-like elements into neighborhoods;

(iii) Service as an urban greenway segment that connects neighborhoods, parks, recreation facilities, schools, mainstreets, and wildlife habitats;

(iv) Parking management that includes maximum parking space requirements as opposed to minimum parking space requirements, parking requirement credits for subsidized transit or shuttle service, parking structures, shared parking, car sharing, or on-street diagonal parking;

(v) Meets broader community goals by providing pedestrian and, where appropriate, bicycle access; and

(vi) Located in a Priority Development Area as designated under the Association of Bay Area Government's and Metropolitan Transportation Commission's FOCUS[4] program.

(5) The Permittees shall conduct appropriate monitoring of these projects to document the water quality benefits achieved. Appropriate monitoring may include modeling using the design specifications and specific site conditions.

Due Date – All pilot green street projects shall be completed by December 1, 2014.

iv. Implementation Level – All elements of Provision C.3.b.i.-iii shall be fully implemented by the effective/due dates set forth in their respective sub-provision, and a database or equivalent tabular format shall be developed and maintained that contains all the information listed under Reporting (Provision C.3.b.v.).

Due Dates for Full Implementation – See specific Effective Dates listed under Provisions C.3.b.ii& iii. .The database or equivalent tabular format required by Provision C.3.b.iv shall be developed by December 1, 2010. (For Vallejo Permittees: December 1, 2011)

v. Reporting

(1) **Annual Reporting – C.3.b.ii. Regulated Projects**

For each Regulated Project approved during the fiscal year reporting period, the following information shall be reported electronically in the fiscal year Annual Report, in tabular form (as set forth in the attached Provision C.3.b. Sample Reporting Table):

(a) Project Name, Number, Location (cross streets), and Street Address;

[4] FOCUS is a regional incentive-based development and conservation strategy for the Bay Area.

(b) Name of Developer, Phase No. (if project is being constructed in phases, each phase should have a separate entry), Project Type (e.g., commercial, industrial, multiunit residential, mixed-use, public), and description;

(c) Project watershed;

(d) Total project site area and total area of land disturbed;

(e) Total new impervious surface area and/or total replaced impervious surface area;

(f) If redevelopment or road widening project, total pre-project impervious surface area and total post-project impervious surface area;

(g) Status of project (e.g., application date, application deemed complete date, project approval date);

(h) Source control measures;

(i) Site design measures;

(j) All post-construction stormwater treatment systems installed onsite, at a joint stormwater treatment facility, and/or at an offsite location;

(k) Operation and maintenance responsibility mechanism for the life of the project.

(l) Hydraulic Sizing Criteria used;

(m) Alternative compliance measures for Regulated Project (if applicable)

(i) If alternative compliance will be provided at an offsite location in accordance with Provision C.3.e.i.(1), include information required in Provision C.3.b.v.(a) – (l) for the offsite project; and

(ii) If alternative compliance will be provided by paying in-lieu fees in accordance with Provision C.3.e.i.(2), provide information required in Provision C.3.b.v.(a) – (l) for the Regional Project. Additionally, provide a summary of the Regional Project's goals, duration, estimated completion date, total estimated cost of the Regional Project, and estimated monetary contribution from the Regulated Project to the Regional Project; and

(n) Hydromodification (HM) Controls (see Provision C.3.g.) – If not required, state why not. If required, state control method used.

(2) **Pilot Green Streets Project Reporting - Provision C.3.b.iii.**

(a) On an annual basis, the Permittees shall report on the status of the pilot green street projects.

(b) For each completed project, the Permittees shall report the capital costs, operation and maintenance costs, legal and procedural arrangements in place to address operation and maintenance and its associated costs, and the sustainable landscape measures incorporated in the project including, if relevant, the score from the Bay-Friendly Landscape Scorecard.

(c) The 2013 Annual Report shall contain a summary of all green street projects completed by January 1, 2013. The summary shall include for each completed project the following information:

(i) Location of project

(ii) Size of project, including total impervious surface treated

(iii) Map(s) of project showing areas where stormwater runoff will be treated by LID measures

(iv) Specific type(s) of LID treatment measures included

(v) Total and specific costs of project

(vi) Specific funding sources for project and breakdown of percentage paid by each funding source

(vii) Lessons learned, including recommendations to facilitate funding and building of future projects

(viii) Identification of responsible party and funding source for operation and maintenance.

C.3.c. Low Impact Development (LID)

The goal of LID is to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes.

Task Description

i. The Permittees shall, at a minimum, implement the following LID requirements:

(1) **Source Control Requirements**

Require all Regulated Projects to implement source control measures onsite that at a minimum, shall include the following:

(a) Minimization of stormwater pollutants of concern in urban runoff through measures that may include plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's authority and standards:

- Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants;
- Dumpster drips from covered trash, food waste and compactor enclosures;
- Discharges from covered outdoor wash areas for vehicles, equipment, and accessories;

- Swimming pool water, if discharge to onsite vegetated areas is not a feasible option; and
- Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option;

(b) Properly designed covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas;

(c) Properly designed trash storage areas;

(d) Landscaping that minimizes irrigation and runoff, promotes surface infiltration, minimizes the use of pesticides and fertilizers, and incorporates other appropriate sustainable landscaping practices and programs such as Bay-Friendly Landscaping;

(e) Efficient irrigation systems; and

(f) Storm drain system stenciling or signage.

(2) **Site Design and Stormwater Treatment Requirements**

(a) Require each Regulated Project to implement at least the following design strategies onsite:

(i) Limit disturbance of natural water bodies and drainage systems; minimize compaction of highly permeable soils; protect slopes and channels; and minimize impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies;

(ii) Conserve natural areas, including existing trees, other vegetation, and soils;

(iii) Minimize impervious surfaces;

(iv) Minimize disturbances to natural drainages; and

(v) Minimize stormwater runoff by implementing one or more of the following site design measures:

- Direct roof runoff into cisterns or rain barrels for reuse.
- Direct roof runoff onto vegetated areas.
- Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
- Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
- Construct sidewalks, walkways, and/or patios with permeable surfaces.[3]
- Construct driveways, bike lanes, and/or uncovered parking lots with permeable surfaces.[3]

(b) Require each Regulated Project to treat 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area

with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility.

(i) LID treatment measures are harvesting and re-use, infiltration, evapotranspiration, or biotreatment.

(ii) A properly engineered and maintained biotreatment system may be considered only if it is infeasible to implement harvesting and re-use, infiltration, or evapotranspiration at a project site.

(iii) Infeasibility to implement harvesting and re-use, infiltration, or evapotranspiration at a project site may result from conditions including the following:

- Locations where seasonal high groundwater would be within 10 feet of the base of the LID treatment measure.
- Locations within 100 feet of a groundwater well used for drinking water.
- Development sites where pollutant mobilization in the soil or groundwater is a documented concern.
- Locations with potential geotechnical hazards.
- Smart growth and infill or redevelopment sites where the density and/or nature of the project would create significant difficulty for compliance with the onsite volume retention requirement.
- Locations with tight clay soils that significantly limit the infiltration of stormwater.

(iv) By May 1, 2011, the Permittees, collaboratively or individually, shall submit a report on the criteria and procedures the Permittees shall employ to determine when harvesting and re-use, infiltration, or evapotranspiration is feasible and infeasible at a Regulated Project site. This report shall, at a minimum, contain the information required in Provision C.3.c.iii.(1).

(v) By December 1, 2013, the Permittees, collaboratively or individually, shall submit a report on their experience with determining infeasibility of harvesting and re-use, infiltration, or evapotranspiration at Regulated Project sites. This report shall, at a minimum, contain the information required in Provision C.3.iii.(2).

(vi) Biotreatment (or bioretention) systems shall be designed to have a surface area no smaller than what is required to accommodate a 5 inches/hour stormwater runoff surface loading rate, and infiltrate runoff at a minimum of 5 inches per hour during the life of the facility. The soil media for biotreatment (or bioretention) systems shall be designed to sustain healthy, vigorous plant growth and maximize stormwater runoff retention and pollutant removal. Permittees shall ensure that Regulated

Projects use biotreatment soil media that meet the minimum specifications set forth in Attachment L.

(vii) Green roofs may be considered biotreatment systems that treat roof runoff only if they meet certain minimum specifications. Permittees shall ensure that green roofs installed at Regulated Projects meet the following minimum specifications:

- The green roof system planting media shall be sufficiently deep to provide capacity within the pore space of the media for the required runoff volume specified by Provision C.3.d.i.(1).
- The green roof system planting media shall be sufficiently deep to support the long term health of the vegetation selected for the green roof, as specified by a landscape architect or other knowledgeable professional.

(c) Require any Regulated Project that does not comply with Provision C.3.c.i.(2)(b) above to meet the requirements established in Provision C.3.e for alternative compliance.

ii. Implementation Level – All elements of the tasks described in Provision C.3.c.i shall be fully implemented.

Due Date for Full Implementation – December 1, 2011

(1) For any private development project for which a planning application has been deemed complete by a Permittee on or before the Permit effective date, Provision C.3.c.i shall not apply so long as the project applicant is diligently pursuing the project. Diligent pursuance may be demonstrated by the project applicant's submittal of supplemental information to the original application, plans, or other documents required for any necessary approvals of the project by the Permittee. If during the time period between the Permit effective date and the required implementation date of December 1, 2011, the project applicant has not taken any action to obtain the necessary approvals from the Permittee, the project will then be subject to the requirements of Provision C.3.c.i.

(2) For any private development project with an application deemed complete after the Permit effective date, the requirements of Provision C.3.c.i shall not apply if the project applicant has received final discretionary approval for the project before the required implementation date of December 1, 2011.

(3) For public projects for which funding has been committed and construction is scheduled to begin by December 1, 2012, the requirements of Provision C.3.c.i shall not apply.

iii. Reporting

(1) Feasibility/Infeasibility Criteria Report - By May 1, 2011, the Permittees, collaboratively or individually, shall submit a report to the Water Board containing the following information:

- Literature review and discussion of documented cases/sites, particularly in the Bay Area and California, where infiltration, harvesting and reuse, or evapotranspiration have been demonstrated to be feasible and/or infeasible.
- Discussion of proposed feasibility and infeasibility criteria and procedures the Permittees shall employ to make a determination of when biotreatment will be allowed at a Regulated Project site.

(2) Status Report on Application of Feasibility/Infeasibility Criteria – By December 1, 2013, the Permittees shall submit a report to the Water Board containing the following information:

- Discussion of the most common feasibility and infeasibility criteria employed since implementation of Provision C.3.c requirements, including site-specific examples;
- Discussion of barriers, including institutional and technical site specific constraints, to implementation of harvesting and reuse, infiltration, or evapotranspiration, and proposed strategies for removing these identified barriers;
- If applicable, discussion of proposed changes to feasibility and infeasibility criteria and rationale for the changes; and
- Guidance for the Permittees to make a consistent and appropriate determination of the feasibility of harvesting and reuse, infiltration, or evapotranspiration for each Regulated Project.

(3) Report the method(s) of implementation of Provisions C.3.c.i above in the 2012 Annual Report. For specific tasks listed above that are reported using the reporting tables required for Provision C.3.b.v, a reference to those tables will suffice.

C.3.d. Numeric Sizing Criteria for Stormwater Treatment Systems

i. Task Description – The Permittees shall require that stormwater treatment systems constructed for Regulated Projects meet at least one of the following hydraulic sizing design criteria:

(1) **Volume Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on volume capacity shall be designed to treat stormwater runoff equal to:

(a) The maximized stormwater capture volume for the area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients set forth in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998), pages 175–178 (e.g., approximately the 85th percentile 24-hour storm runoff event); or

(b) The volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology set forth in Section 5 of the California Stormwater Quality Association's

Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.

(2) **Flow Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on flow capacity shall be sized to treat:

(a) 10 percent of the 50-year peak flowrate;

(b) The flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or

(c) The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.

(3) **Combination Flow and Volume Design Basis** – Treatment systems that use a combination of flow and volume capacity shall be sized to treat at least 80 percent of the total runoff over the life of the project, using local rainfall data.

ii. Implementation Level – The Permittees shall immediately require the controls in this task.

Due Date for Full Implementation – Immediate, except December 1, 2010, for Vallejo Permittees.

iii. Reporting – Permittees shall use the reporting tables required in Provision C.3.b.v.

iv. Limitations on Use of Infiltration Devices in Stormwater Treatment Systems

(1) For Regulated Projects, each Permittee shall review planned land use and proposed treatment design to verify that installed stormwater treatment systems with no under-drain, and that function primarily as infiltration devices, should not cause or contribute to the degradation of groundwater quality at project sites. An infiltration device is any structure that is deeper than wide and designed to infiltrate stormwater into the subsurface and, as designed, bypass the natural groundwater protection afforded by surface soil. Infiltration devices include dry wells, injection wells, and infiltration trenches (includes french drains).

(2) For any Regulated Project that includes plans to install stormwater treatment systems which function primarily as infiltration devices, the Permittee shall require that:

(a) Appropriate pollution prevention and source control measures are implemented to protect groundwater at the project site, including the inclusion of a minimum of two feet of suitable soil to achieve a maximum 5 inches/hour infiltration rate for the infiltration system;

(b) Adequate maintenance is provided to maximize pollutant removal capabilities;

(c) The vertical distance from the base of any infiltration device to the seasonal high groundwater mark is at least 10 feet. (Note that some

locations within the Permittees' jurisdictions are characterized by highly porous soils and/or high groundwater tables. In these areas, a greater vertical distance from the base of the infiltration device to the seasonal high groundwater mark may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety);

(d) Unless stormwater is first treated by a method other than infiltration, infiltration devices are not approved as treatment measures for runoff from areas of industrial or light industrial activity; areas subject to high vehicular traffic (i.e., 25,000 or greater average daily traffic on a main roadway or 15,000 or more average daily traffic on any intersecting roadway); automotive repair shops; car washes; fleet storage areas (e.g., bus, truck); nurseries; and other land uses that pose a high threat to water quality;

(e) Infiltration devices are not placed in the vicinity of known contamination sites unless it has been demonstrated that increased infiltration will not increase leaching of contaminants from soil, alter groundwater flow conditions affecting contaminant migration in groundwater, or adversely affect remedial activities; and

(f) Infiltration devices are located a minimum of 100 feet horizontally away from any known water supply wells, septic systems, and underground storage tanks with hazardous materials. (Note that some locations within the Permittees' jurisdictions are characterized by highly porous soils and/or high groundwater tables. In these areas, a greater horizontal distance from the infiltration device to known water supply wells, septic systems, or underground storage tanks with hazardous materials may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety).

C.3.e. Alternative or In-Lieu Compliance with Provision C.3.c.

i. The Permittees may allow a Regulated Project to provide alternative compliance with Provision C.3.c in accordance with one of the two options listed below:

(1) **Option 1: LID Treatment at an Offsite Location**

Treat a portion of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** treat the remaining portion of the Provision C.3.d runoff with LID treatment measures at an offsite project in the same watershed. The offsite LID treatment measures must provide hydraulically-sized treatment (in accordance with Provision C.3.d) of an equivalent quantity of both

stormwater runoff and pollutant loading and achieve a net environmental benefit.

(2) **Option 2: Payment of In-Lieu Fees**
Treat a portion of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** pay equivalent in-lieu fees[5] to treat the remaining portion of the Provision C.3.d runoff with LID treatment measures at a Regional Project.[6] The Regional Project must achieve a net environmental benefit.

(3) For the alternative compliance options described in Provision C.3.e.i.(1) and (2) above, offsite projects must be constructed by the end of construction of the Regulated Project. If more time is needed to construct the offsite project, for each additional year, up to three years, after the construction of the Regulated Project, the offsite project must provide an additional 10% of the calculated equivalent quantity of both stormwater runoff and pollutant loading. Regional Projects must be completed within three years after the end of construction of the Regulated Project. However, the timeline for completion of the Regional Project may be extended, up to five years after the completion of the Regulated Project, with prior Executive Officer approval. Executive Officer approval will be granted contingent upon a demonstration of good faith efforts to implement the Regional Project, such as having funds encumbered and applying for the appropriate regulatory permits.

ii. Special Projects

(1) When considered at the watershed scale, certain land development projects characterized as smart growth, high density, or transit-oriented development can either reduce existing impervious surfaces, or create less "accessory" impervious areas and automobile-related pollutant impacts. Incentive LID Treatment Reduction Credits approved by the Water Board may be applied to these Special Projects, which are Regulated Projects that meet the specific criteria listed below in Provisions C.3.e.ii.(2),(3)&(4). For any Special Project, the allowable incentive LID Treatment Reduction Credit is the maximum percentage of the amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, that may be treated with one or a combination of the following two types of non-LID treatment systems:

- Tree-box-type high flowrate biofilters
- Vault-based high flowrate media filters

[5] **In-lieu fees** – Monetary amount necessary to provide both hydraulically-sized treatment (in accordance with Provision C.3.d) with LID treatment measures of an equivalent quantity of stormwater runoff and pollutant loading, and a proportional share of the operation and maintenance costs of the Regional Project.

[6] **Regional Project –** A regional or municipal stormwater treatment facility that discharges into the same watershed that the Regulated Project does.

The allowed LID Treatment Reduction Credit recognizes that density and space limitations for the Special Projects identified herein may make 100% LID treatment infeasible. Under Provision C.3.e.vi, each Permittee is required to report on the infeasibility of LID treatment for each of the Special Projects for which LID Treatment Reduction Credit was applied.

(2) Category A Special Project Criteria

(a) To be considered a Category A Special Project, a Regulated Project must meet all of the following criteria:

(i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.

(ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.

(iii) Create and/or replace one half acre or less of impervious surface area.

(iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, Americans with Disabilities Act (ADA) accessibility, and passenger and freight loading zones.

(v) Have at least 85% coverage for the entire project site by permanent structures. The remaining 15% portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.

(b) Any Category A Special Project may qualify for 100% LID Treatment Reduction Credit, which would allow the Category A Special Project to treat up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(3) Category B Special Project Criteria

(a) To be considered a Category B Special Project, a Regulated Project must meet all of the following criteria:

(i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.

(ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.

(iii) Create and/or replace greater than one-half acre but no more than 2 acres of impervious surface area.

(iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.

(v) Have at least 85% coverage for the entire project site by permanent structures. The remaining 15% portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.

(b) For any Category B Special Project, the maximum LID Treatment Reduction Credit allowed is determined based on the density achieved by the Project in accordance with the criteria listed below. Density is expressed in Floor Area Ratios (FARs) for commercial and mixed-use development projects and in Dwelling Units per Acre (DU/Ac) for residential development projects.

(i) 50% Maximum LID Treatment Reduction Credit

- For any commercial or mixed use Category B Special Project with a FAR of at least 2:1, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any residential Category B Special Project with a density of at least 50 DU/Ac, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(ii) 75% Maximum LID Treatment Reduction Credit

- For any commercial or mixed use Category B Special Project with a FAR of at least 3:1, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any residential Category B Special Project with a density of at least 75 DU/Ac, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(iii) 100% Maximum LID Treatment Reduction Credit

- For any commercial or mixed use Category B Special Project with a FAR of at least 4:1, up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may

be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

- For any residential Category B Special Project with a density of at least 100 DU/Ac, up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(4) Category C Special Project Criteria (Transit-Oriented Development)

(a) Transit-Oriented Development refers to the clustering of homes, jobs, shops and services in close proximity to rail stations, ferry terminals or bus stops offering access to frequent, high-quality transit services. This pattern typically involves compact development and a mixing of different land uses, along with amenities like pedestrian-friendly streets. To be considered a Category C Special Project, a Regulated Project must meet all of the following criteria:

(i) Be characterized as a non auto-related land use project. That is, Category C specifically excludes any Regulated Project that is a stand-alone surface parking lot; car dealership; auto and truck rental facility with onsite surface storage; fast-food restaurant, bank or pharmacy with drive-through lanes; gas station, car wash, auto repair and service facility; or other auto-related project unrelated to the concept of Transit-Oriented Development.

(ii) If a commercial or mixed-use development project, achieve at least an FAR of 2:1.

(iii) If a residential development project, achieve at least a density of 25 DU/Ac.

(b) For any Category C Special Project, the total maximum LID Treatment Reduction Credit allowed is the sum of three different types of credits that the Category C Special Project may qualify for, namely: Location, Density and Minimized Surface Parking Credits.

(c) Location Credits

(i) A Category C Special Project may qualify for the following Location Credits:

- 50% Location Credit: Located within a ¼ mile radius of an existing or planned transit hub.
- 25% Location Credit: Located within a ½ mile radius of an existing or planned transit hub.
- 25% Location Credit: Located within a planned Priority Development Area (PDA), which is an infill development area formally designated by the Association of Bay Area Government's / Metropolitan Transportation Commission's FOCUS regional planning program. FOCUS is a regional

incentive-based development and conservation strategy for the San Francisco Bay Area.

(ii) Only one Location Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Location Credits.

(iii) At least 50% or more of a Category C Special Project's site must be located within the ¼ or ½ mile radius of an existing or planned transit hub to qualify for the corresponding Location Credits listed above. One hundred percent of a Category C Special Project's site must be located within a PDA to qualify for the corresponding Location Credit listed above.

(iv) Transit hub is defined as a rail, light rail, or commuter rail station, ferry terminal, or bus transfer station served by three or more bus routes (i.e., a bus stop with no supporting services does not qualify). A planned transit hub is a station on the MTC's Regional Transit Expansion Program list, per MTC's Resolution 3434 (revised April 2006), which is a regional priority funding plan for future transit stations in the San Francisco Bay Area.

(d) Density Credits: To qualify for any Density Credits, a Category C Special Project must first qualify for one of the Location Credits listed in Provision C.3.e.ii.((4)(c) above.

(i) A Category C Special Project that is a commercial or mixed-use development project may qualify for the following Density Credits:

- 10% Density Credit: Achieve an FAR of at least 2:1.
- 20% Density Credit: Achieve an FAR of at least 4:1.
- 30% Density Credit: Achieve an FAR of at least 6:1.

(ii) A Category C Special Project that is a residential development project may qualify for the following Density Credits:

- 10% Density Credit: Achieve a density of at least 30 DU/Ac.
- 20% Density Credit: Achieve a density of at least 60 DU/Ac.
- 30% Density Credit: Achieve a density of at least 100 DU/Ac.

(iii) Commercial and mixed-use Category C Projects do not qualify for Density Credits based on DU/Ac and residential Category C Projects do not qualify for Density Credits based on FAR.

(iv) Only one Density Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Density Credits.

(e) Minimized Surface Parking Credits: To qualify for any Minimized Surface Parking Credits, a Category C Special Project must first

qualify for one of the Location Credits listed in Provision C.3.e.ii.(4)(c) above.

(i) A Category C Special Project may qualify for the following Minimized Surface Parking Credits:

- 10% Minimized Surface Parking Credit: Have 10% or less of the total post-project impervious surface area dedicated to at-grade surface parking. The at-grade surface parking must be treated with LID treatment measures.
- 20% Minimized Surface Parking Credit: Have no surface parking except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.

(ii) Only one Minimized Surface Parking Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Minimized Surface Parking Credits.

(5) Any Regulated Project that meets all the criteria for multiple Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project) may only use the LID Treatment Reduction Credit allowed under one of the Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project may use the LID Treatment Reduction Credit allowed under Category B or Category C, but not the sum of both.)

iii. Effective Date – December 1, 2011.

iv. Implementation Level

(1) For any private development project for which a planning application has been deemed complete by a Permittee on or before the Permit effective date, Provisions C.3.e.i-ii shall not apply so long as the project applicant is diligently pursuing the project. Diligent pursuance may be demonstrated by the project applicant's submittal of supplemental information to the original application, plans, or other documents required for any necessary approvals of the project by the Permittee. If during the time period between the Permit effective date and the required implementation date of December 1, 2011, the project applicant has not taken any action to obtain the necessary approvals from the Permittee, the project will then be subject to the requirements of Provision C.3.e.i-ii.

(2) For public projects for which funding has been committed and construction is scheduled to begin by December 1, 2012, the requirements of Provisions C.3.e.i-ii shall not apply.

(3) Provisions C.3.e.i-ii supersede any Alternative Compliance Policies previously approved by the Executive Officer

(4) For all offsite projects and Regional Projects installed in accordance with Provision C.3.e.i-ii, the Permittees shall meet the Operation & Maintenance (O&M) requirements of Provision C.3.h.

v. Reporting –The Permittees shall submit the ordinance/legal authority and procedural changes made, if any, to implement Provision C.3.e with their 2012 Annual Report. Annual reporting thereafter shall be done in conjunction with reporting requirements under Provision C.3.b.v.

Any Permittee choosing to require 100% LID treatment onsite for all Regulated Projects and not allow alternative compliance under Provision C.3.e, shall include a statement to that effect in the 2012 Annual Report and all subsequent Annual Reports.

vi. Reporting on Special Projects

(1) Beginning December 1, 2011, Permittees shall track any identified potential Special Projects that have submitted planning applications but that have not received final discretionary approval.

(2) By March 15 and September 15 of each year, Permittees shall report to the Water Board on these tracked potential Special Projects using Table 3.1 found at the end of Provision C.3. All the required column entry information listed in Table 3.1 shall be reported for each potential Special Project. Any Permittee with no potential Special Projects shall so state.

For each Special Project listed in Table 3.1, Permittees shall include a narrative discussion of the feasibility or infeasibility of 100% LID treatment, onsite and offsite. Both technical and economic feasibility or infeasibility shall be discussed, as applicable. The discussion shall also contain enough technical and/or economic detail to document the basis of infeasibility used.

(3) Once a Special Project has final discretionary approval, it shall be reported in the Provision C.3.b. Reporting Table in the same reporting year that the project was approved. In addition to the column entries contained in the Provision C.3.b. Reporting Table, the Permittees shall provide the following supplemental information for each approved Special Project:

(a) Submittal Date: Date that a planning application for the Special Project was submitted.

(b) Description: Type of project, number of floors, number of units (commercial, mixed-use, residential), type of parking, and other relevant information.

(c) Site Acreage: Total site area in acres.

(d) Density in DU/Ac: Number of dwelling units per acre.

(e) Density in FAR: Floor Area Ratio

(f) Special Project Category: For each applicable Special Project Category, list the specific criteria applied to determine applicability. For each non-applicable Special Project Category, indicate n/a.

(g) LID Treatment Reduction Credit Available: For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit applied. For Category C Special Projects also list the individual Location, Density, and Minimized Surface Parking Credits applied.

(h) List of Stormwater Treatment Systems: List all LID stormwater treatment systems approved. For each type of LID treatment system, indicate the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area that will be treated.

(i) List of Non-LID Stormwater Treatment Systems: List all non-LID stormwater treatment systems approved. For each type of non-LID treatment system, indicate: (1) the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, and (2) whether the treatment system either meets minimum design criteria published by a government agency or received certification issued by a government agency, and reference the applicable criteria or certification.

C.3.f. Alternative Certification of Stormwater Treatment Systems

i. Task Description – In lieu of reviewing a Regulated Project's adherence to Provision C.3.d, a Permittee may elect to have a third party conduct detailed review and certify the Regulated Project's adherence to Provision C.3.d. The third party reviewer must be a Civil Engineer or a Licensed Architect or Landscape Architect registered in the State of California, or staff of another Permittee subject to the requirements of this Permit.

ii. Implementation Level – Any Permittee accepting third-party reviews must make a reasonable effort to ensure that the third party has no conflict of interest with regard to the Regulated Project in question. That is, any consultant or contractor (or his/her employees) hired to design and/or construct a stormwater treatment system for a Regulated Project shall not also be the certifying third party. The Permittee must verify that the third party certifying any Regulated Project has current training on stormwater treatment system design (within three years of the certification signature date) for water quality and understands the groundwater protection principles applicable to Regulated Project sites.

Training conducted by an organization with stormwater treatment system design expertise (such as a college or university, the American Society of Civil Engineers, American Society of Landscape Architects, American Public Works Association, California Water Environment Association (CWEA), BASMAA, National Association of Flood & Stormwater Management Agencies, California Stormwater Quality Association (CASQA), or the equivalent, may be considered qualifying training.

iii. Reporting – Projects reviewed by third parties shall be noted in reporting tables for Provision C.3.b.

C.3.g. Hydromodification Management

i. Hydromodification Management (HM) Projects are Regulated Projects that create and/or replace one acre or more of impervious surface and are not specifically excluded within the requirements of Attachments B–F. A project that does not increase impervious surface area over the pre-project condition is not an HM Project. All HM Projects shall meet the Hydromodification Management Standard of Provision C.3.g.ii.

ii. HM Standard

Stormwater discharges from HM Projects shall not cause an increase in the erosion potential of the receiving stream over the pre-project (existing) condition. Increases in runoff flow and volume shall be managed so that post-project runoff shall not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. The demonstration that post-project stormwater runoff does not exceed estimated pre-project runoff rates and durations shall include the following:

(1) **Range of Flows to Control:** For Alameda, Contra Costa, San Mateo, and Santa Clara Permittees, HM controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 10 % of the pre-project 2-year peak flow[7] up to the pre-project 10-year peak flow. For Fairfield-Suisun Permittees, HM controls shall be designed such that post-project stormwater discharge rates and durations shall match from 20 percent of the 2-year peak flow up to the pre-project 10-year peak flow. Contra Costa Permittees, when using pre-sized and pre-designed Integrated Management Practices (IMPs) per Attachment C of this Order, are not required to meet the low-flow criterion of 10% of the 2-year peak flow. These IMPs are designed to control 20% of the 2-year peak flow. After the Contra Costa Permittees conduct the required monitoring specified in Attachment C, the design of these IMPs will be reviewed.

(2) **Goodness of Fit Criteria:** The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control.

(3) **Precipitation Data:** Precipitation data used in the modeling of HM controls shall, at a minimum, be 30 years of hourly rainfall data

[7] Where referred to in this Order, the 2-year peak flow is determined using a flood frequency analysis based on USGS Bulletin 17 B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35-50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include USEPA's Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers' Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA's Storm Water Management Model (SWMM).

representative of the area being modeled. Where a longer rainfall record is available, the longer record shall be used.

(4) **Calculating Post-Project Runoff:** Retention and detention basins shall be considered impervious surfaces for purposes of calculating post-project runoff. Pre- and post-project runoff shall be calculated and compared for the entire site, without separating or excluding areas that may be considered self-retaining.

(5) **Existing HM Control Requirements:** The Water Board has adopted HM control requirements for all Permittees (except for the Vallejo Permittees), and these adopted requirements are attached to this Order as listed below. The Permittees shall comply with all requirements in their own Permittee-specific Attachment, unless otherwise specified by this Order. In all cases, the HM Standard shall be achieved.

- Attachment B for Alameda Permittees
- Attachment C for Contra Costa Permittees
- Attachment D for Fairfield-Suisun Permittees
- Attachment E for San Mateo Permittees
- Attachment F for Santa Clara Permittees

iii. Types of HM Controls

Projects shall meet the HM Standard using any of the following HM controls or a combination thereof.

(1) **Onsite HM controls** are flow duration control structures and hydrologic source controls that collectively result in the HM Standard being met at the point(s) where stormwater runoff discharges from the project site.

(2) **Regional HM controls** are flow duration control structures that collect stormwater runoff discharge from multiple projects (each of which shall incorporate hydrologic source control measures as well) and are designed such that the HM Standard is met for all the projects at the point where the regional HM control discharges.

(3) **In-stream measures** shall be an option only where the stream, which receives runoff from the project, is already impacted by erosive flows and shows evidence of excessive sediment, erosion, deposition, or is a hardened channel.

In-stream measures involve modifying the receiving stream channel slope and geometry so that the stream can convey the new flow regime without increasing the potential for erosion and aggradation. In-stream measures are intended to improve long-term channel stability and prevent erosion by reducing the erosive forces imposed on the channel boundary.
In-stream measures, or a combination of in-stream and onsite controls, shall be designed to achieve the HM Standard from the point where the project(s) discharge(s) to the stream to the mouth of the stream or to achieve an equivalent degree of flow control mitigation (based on amount

of impervious surface mitigated) as part of an in-stream project located in the same watershed. Designing in-stream controls requires a hydrologic and geomorphic evaluation (including a longitudinal profile) of the stream system downstream and upstream of the project. As with all in-stream activities, other regulatory permits must be obtained by the project proponent.[8]

iv. Reporting

For each HM Project approved during the reporting period, the following information shall be reported electronically in tabular form. This information shall be added to the required reporting information specified in Provision C.3.b.v.

(1) Device(s) or method(s) used to meet the HM Standard, such as detention basin(s), biodetention unit(s), regional detention basin, or in-stream control;

(2) Method used by the project proponent to design and size the device or method used to meet the HM Standard; and

(3) Other information as required in the Permittee's existing HM requirements, as shown in Attachments B–F.

v. Vallejo Permittees shall complete the following tasks in lieu of complying with Provisions C.3.g.i-iv.

(1) Develop a Hydrograph Modification Management Plan (HMP) for meeting the requirements of Provisions C.3.g.i–iv. The Vallejo Permittees' HMP shall be subject to approval by the Water Board.

(2) Vallejo Permittees shall include the following in their HMP:

(a) A map of the City of Vallejo, delineating areas where the HM Standard applies. The HM Standard shall apply in all areas except where a project:

- discharges stormwater runoff into creeks or storm drains that are concrete-lined or significantly hardened (e.g., with rip-rap, sackrete) downstream to their outfall in San Francisco Bay;
- discharges to an underground storm drain discharging to the Bay; or
- is located in a highly developed watershed.[9]

However, plans to restore a creek reach may reintroduce the applicability of HM controls, and would need to be addressed in the HMP;

[8] In-stream control projects require a Stream Alteration Agreement from the California Department of Fish & Game, a CWA section 404 permit from the U.S. Army Corps of Engineers, and a section 401 certification from the Water Board. Early discussions with these agencies on the acceptability of an in-stream modification are necessary to avoid project delays or redesign.

[9] Within the context of Provision C.3.g., "highly developed watersheds" refers to catchments or subcatchments that are 65% impervious or more.

(b) A thorough technical description of the methods project proponents may use to meet the HM Standard. Vallejo Permittees shall use the same methodologies, or similar methodologies, to those already in use in the Bay Area to meet the HM Standard. Contra Costa sizing charts may be used on projects up to ten acres after any necessary modifications are made to the sizes to control runoff rates and durations from ten percent of the pre-project 2-year peak flow to the pre-project 10-year peak flow, and adjustments are made for local rainfall and soil types;

(c) A description of any land use planning measures the City of Vallejo will take (e.g., stream buffers and stream restoration activities, including restoration-in-advance of floodplains, revegetation, and use of less-impacting facilities at points of discharge) to allow expected changes in stream channel cross sections, stream vegetation, and discharge rates, velocities, and/or durations without adverse impacts on stream beneficial uses;

(d) A description of how the Vallejo Permittees will incorporate these requirements into their local approval processes, and a schedule for doing so; and

(e) Guidance for City of Vallejo project proponents explaining how to meet the HM Standard.

(3) Vallejo Permittees shall complete the HMP according to the schedule below. All required documents shall be submitted acceptable to the Executive Officer, except the HMP, which shall be submitted to the Water Board for approval. Vallejo Permittees shall report on the status of HMP development and implementation in each Annual Report and shall also provide a summary of projects incorporating measures to address Provision C.3.g and the measures used.

- By April 1, 2011, submit a detailed workplan and schedule for completion of the information required in Provision C.3.g.v.(2).
- By December 1, 2011, submit the map required in Provision C.3.g.v.(2)(a).
- By April 1, 2012, submit a draft HMP.
- By December 1, 2012, provide responses to Water Board comments on the draft HMP so that the final HMP is submitted for Water Board approval by July 1, 2013.
- Upon adoption by the Water Board, implement the HMP, which shall include the requirements of this measure. Before approval of the HMP by the Water Board, Vallejo Permittees shall encourage early implementation of measures likely to be included in the HMP.

C.3.h. Operation and Maintenance of Stormwater Treatment Systems

i. Task Description – Each Permittee shall implement an Operation and Maintenance (O&M) Verification Program.

ii. Implementation Level – At a minimum, the O&M Verification Program shall include the following elements:

(1) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that, at a minimum, require at least one of the following from all project proponents and their successors in control of the Project or successors in fee title:

(a) The project proponent's signed statement accepting responsibility for the O&M of the installed onsite, joint, and/or offsite stormwater treatment system(s) and HM control(s) (if any) until such responsibility is legally transferred to another entity;

(b) Written conditions in the sales or lease agreements or deed for the project that requires the buyer or lessee to assume responsibility for the O&M of the onsite, joint, and/or offsite installed stormwater treatment system(s) and HM control(s) (if any) until such responsibility is legally transferred to another entity;

(c) Written text in project deeds, or conditions, covenants and restrictions (CCRs) for multi-unit residential projects that require the homeowners association or, if there is no association, each individual owner to assume responsibility for the O&M of the installed onsite, joint, and/or offsite stormwater treatment system(s) and HM control(s) (if any) until such responsibility is legally transferred to another entity; or

(d) Any other legally enforceable agreement or mechanism, such as recordation in the property deed, that assigns the O&M responsibility for the installed onsite, joint, and/or offsite treatment system(s) and HM control(s) (if any) to the project owner(s) or the Permittee.

(2) Coordination with the appropriate mosquito and vector control agency with jurisdiction to establish a protocol for notification of installed stormwater treatment systems and HM controls.

(3) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that require the granting of site access to all representatives of the Permittee, local mosquito and vector control agency staff, and Water Board staff, for the sole purpose of performing O&M inspections of the installed stormwater treatment system(s) and HM control(s) (if any).

(4) A written plan and implementation of the plan that describes O&M (including inspection) of all Regional Projects and regional HM controls that are Permittee-owned and/or operated.

(5) A database or equivalent tabular format of all Regulated Projects (public and private) that have installed onsite, joint, and/or offsite stormwater

treatment systems. This database or equivalent tabular format shall include the following information for each Regulated Project:

(a) Name and address of the Regulated Project;

(b) Specific description of the location (or a map showing the location) of the installed stormwater treatment system(s) and HM control(s) (if any);

(c) Date(s) that the treatment system(s) and HM controls (if any) is/are installed;

(d) Description of the type and size of the treatment system(s) and HM control(s) (if any) installed;

(e) Responsible operator(s) of each treatment system and HM control (if any);

(f) Dates and findings of inspections (routine and follow-up) of the treatment system(s) and HM control(s) (if any) by the Permittee; and

(g) Any problems and corrective or enforcement actions taken.

(6) A prioritized plan for inspecting all installed stormwater treatment systems and HM controls. At a minimum, this prioritized plan must specify the following for each fiscal year:

(a) Inspection by the Permittee of all newly installed stormwater treatment systems and HM controls within 45 days of installation to ensure approved plans have been followed;

(b) Inspection by the Permittee of at least 20 percent of the total number (at the end of the preceding fiscal year) of installed stormwater treatment systems and HM controls;

(c) Inspection by the Permittee of at least 20 percent of the total number (at the end of the preceding fiscal year) of installed vault-based systems; and

(d) Inspection by the Permittee of all installed stormwater treatment systems subject to Provision C.3, at least once every five years.

iii. Maintenance Approvals: The Permittees shall ensure that onsite, joint, and offsite stormwater treatment systems and HM controls installed by Regulated Projects are properly operated and maintained for the life of the projects. In cases where the responsible party for a stormwater treatment system or HM control has worked diligently and in good faith with the appropriate State and federal agencies to obtain approvals necessary to complete maintenance activities for the treatment system or HM control, but these approvals are not granted, the Permittees shall be deemed to be in compliance with this Provision. Permittees shall ensure that constructed wetlands installed by Regulated Projects and used for urban runoff treatment shall abide by the Water Board's Resolution No. 94-102: Policy on the Use of Constructed Wetlands for Urban Runoff Pollution Control and the O&M requirements contained therein.

Due Date for Full Implementation: Immediate for Provisions C.3.h.i, C.3.h.ii.(1), and C.3.h.iii, and December 1, 2010, for Provisions C.3.h.ii.(2)-(6). For Vallejo Permittees: December 1, 2010, for Provisions C.3.h.i-iii.

iv. Reporting: Beginning with the 2010 Annual Report

(1) For each Regulated Project inspected during the reporting period (fiscal year) the following information shall be reported to the Water Board electronically in tabular form as part of the Annual Report (as set forth in the Provision C.3.h. Sample Reporting Table attached):

- Name of facility/site inspected.
- Location (street address) of facility/site inspected.
- Name of responsible operator for installed stormwater treatment systems and HM controls.
- For each inspection:
  - Date of inspection.
  - Type of inspection (e.g., initial, annual, follow-up, spot).
  - Type(s) of stormwater treatment systems inspected (e.g., swale, bioretention unit, tree well, etc.) and an indication of whether the treatment system is an onsite, joint, or offsite system.
  - Type of HM controls inspected.
  - Inspection findings or results (e.g., proper installation, proper operation and maintenance, system not operating properly because of plugging, bypass of stormwater because of improper installation, maintenance required immediately, etc.).
  - Enforcement action(s) taken, if any (e.g., verbal warning, notice of violation, administrative citation, administrative order).

(2) On an annual basis, before the wet season, provide a list of newly installed (installed within the reporting period) stormwater treatment systems and HM controls to the local mosquito and vector control agency and the Water Board. This list shall include the facility locations and a description of the stormwater treatment measures and HM controls installed.

(3) Each Permittee shall report the following information in the Annual Report each year:

(a) A discussion of the inspection findings for the year and any common problems encountered with various types of treatment systems and/or HM controls. This discussion should include a general comparison to the inspection findings from the previous year.

(b) A discussion of the effectiveness of the Permittee's O&M Program and any proposed changes to improve the O&M Program (e.g., changes in prioritization plan or frequency of O&M inspections, other changes to improve effectiveness of program).

C.3.i. Required Site Design Measures for Small Projects and Detached Single-Family Home Projects

i. Task Description – The Permittees shall require all development projects, which create and/or replace $\geq$ 2500 ft^2 to < 10,000 ft^2 of impervious surface, and detached single-family home projects,[10] which create and/or replace 2,500 square feet or more of impervious surface, to install one or more of the following site design measures:

- Direct roof runoff into cisterns or rain barrels for reuse.
- Direct roof runoff onto vegetated areas.
- Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
- Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
- Construct sidewalks, walkways, and/or patios with permeable surfaces.[3]
- Construct bike lanes, driveways, and/or uncovered parking lots with permeable surfaces.[3]

This provision applies to all development projects that require approvals and/or permits issued under the Permittee's' planning, building, or other comparable authority.

ii. Implementation Level – All elements of this task shall be fully implemented by December 1, 2012.

iii. Reporting – On an annual basis, discuss the implementation of the requirements of Provision C.3.i, including ordinance revisions, permit conditions, development of standard specifications and/or guidance materials, and staff training.

iv. Task Description – The Permittees shall develop standard specifications for lot-scale site design and treatment measures (e.g., for roof runoff and paved areas) as a resource for single-family homes and small development projects.

v. Implementation Level – This task may be fulfilled by the Permittees cooperating on a countywide or regional basis.

Due Date for Full Implementation – December 1, 2012.

vi. Reporting – A report containing the standard specifications for lot-scale treatment BMPs shall be submitted by December 1, 2012.

[10] **Detached single-family home project** – The building of one single new house or the addition and/or replacement of impervious surface to one single existing house, which is not part of a larger plan of development.

Table 3.1 Standard Tracking and Reporting Form for Potential Special Projects

Project Name and No.	Permittee	Address	Application Submittal Date	Description	Site Total Acreage	Density DU/Ac	Density FAR	Special Project Category	LID Treatment Reduction Credit Available	List of LID Stormwater Treatment Systems	List of Non-LID Stormwater Treatment Systems
								Category A: Category B: Category C: Location: Density: Parking:	Category A: Category B: Category C: Location: Density: Parking:	Indicate each type of LID treatment system and the percentage of total runoff treated	Indicate each type of non-LID treatment system and the percentage of total runoff treated. Indicate whether minimum design criteria met or certification received (see footnotes).

Project Name and No: Name of the Special Project and Project No. (if applicable)

Permittee: Name of the Permittee in whose jurisdiction the Special Project will be built.

Address: Address of the Special Project; if no street address, state the cross streets.

Submittal Date: Date that a planning application for the Special Project was submitted; if a planning application has not been submitted, include a projected application submittal date.

Description: Type of project (commercial, mixed-use, residential), number of floors, number of units, type of parking, and other relevant information.

Site Acreage: Total site area in acres.

Density in DU/Ac: Number of dwelling units per acre.

Density in FAR: Floor Area Ratio

Special Project Category: For each applicable Special Project Category, list the specific criteria applied to determine applicability. For each non-applicable Special Project Category, indicate n/a.

LID Treatment Reduction Credit Available: For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit available. For Category C Special Projects also list the individual Location, Density, and Minimized Surface Parking Credits available.

List of LID Stormwater Treatment Systems: List all LID stormwater treatment systems proposed. For each type, indicate the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area.

List of Non-LID Stormwater Treatment Systems: List all non-LID stormwater treatment systems proposed. For each type, indicate the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area. For each type of non-LID treatment system, indicate: (1) the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, and (2) whether the treatment system either meets minimum design criteria published by a government agency or received certification issued by a government agency, and reference the applicable criteria or certification.

C.4. Industrial and Commercial Site Controls

Each Permittee shall implement an industrial and commercial site control program at all sites which could reasonably be considered to cause or contribute to pollution of stormwater runoff, with inspections and effective follow-up and enforcement to abate actual or potential pollution sources consistent with each Permittee's respective Enforcement Response Plan (ERP), to prevent discharge of pollutants and impacts on beneficial uses of receiving waters. Inspections shall confirm implementation of appropriate and effective BMPs and other pollutant controls by industrial and commercial site operators.

C.4.a. Legal Authority for Effective Site Management

i. Task Description – Permittees shall have sufficient legal enforcement authority to obtain effective stormwater pollutant control on industrial sites. Permittees shall have the ability to inspect and require effective stormwater pollutant control and to escalate progressively stricter enforcement to achieve expedient compliance and pollutant abatement at commercial and industrial sites within their jurisdiction.

ii. Implementation Level

(1) Permittees shall have the legal authority to oversee, inspect, and require expedient compliance and pollution abatement at all industrial and commercial sites which may be reasonably considered to cause or contribute to pollution of stormwater runoff. Permittees shall have the legal authority to require implementation of appropriate BMPs at industrial and commercial to address pollutant sources associated with outdoor process and manufacturing areas, outdoor material storage areas, outdoor waste storage and disposal areas, outdoor vehicle and equipment storage and maintenance areas, outdoor parking areas and access roads, outdoor wash areas, outdoor drainage from indoor areas, rooftop equipment, and contaminated and erodible surface areas, and other sources determined by the Permittees or Water Board Executive Officer to have a reasonable potential to contribute to pollution of stormwater runoff.

(2) Permittees shall notify the discharger of any actual or potential pollutant sources and violations and require problem correction within a reasonably short and expedient time frame commensurate with the threat to water quality. Permittees shall require timely correction of problems involving rapid temporary repair, and may allow longer time periods for implementation of more permanent solutions, if these require significant capital expenditure or construction. Violations shall be corrected prior to the next rain event or within 10 business days after the violations are noted. If more than 10 business days are required for correction, a rationale shall be given in the tabulated sheets.

C.4.b. Industrial and Commercial Business Inspection Plan (Inspection Plan)

i. Task Description – Permittees shall develop and implement an inspection plan that will serve as a prioritized inspection workplan. This inspection plan will allow inspection staff to categorize the commercial and industrial sites within the Permittee's jurisdiction by pollutant threat and inspection frequency, change inspection frequency based on site performance, and add and remove sites as businesses open and close.

The Inspection Plan shall contain the following information:

(1) Total number and a list of industrial and commercial facilities requiring inspection, within each Permittee's jurisdiction, to be determined on the basis of a prioritization criteria designed to assign a more frequent inspection schedule to the highest priority facilities per Section C.4.b.ii. below.

(2) A description of the process for prioritizing inspections and frequency of inspections. If any geographical areas are to be targeted for inspections due to high potential for stormwater pollution, these areas should be indicated in the Inspection Plan. A mechanism to include newly opened businesses that warrant inspection shall be included.

ii. Implementation Level – Each Permittee shall annually update and maintain a list of industrial and commercial facilities in the Inspection Plan to inspect that could reasonably be considered to cause or contribute to pollution of stormwater runoff. The following are some of the functional aspects of businesses and types of businesses that shall be included in the Inspection Plans:

(1) Sites that include the following types of functions that may produce pollutants when exposed to stormwater include, but are not limited to:
   (a) Outdoor process and manufacturing areas
   (b) Outdoor material storage areas
   (c) Outdoor waste storage and disposal areas
   (d) Outdoor vehicle and equipment storage and maintenance areas
   (e) Outdoor wash areas
   (f) Outdoor drainage from indoor areas
   (g) Rooftop equipment
   (h) Other sources determined by the Permittee or Water Board to have a reasonable potential to contribute to pollution of stormwater runoff

(2) The following types of Industrial and Commercial businesses that have a reasonable likelihood to be sources of pollutants to stormwater and non-stormwater discharges:
   (a) Industrial facilities, as defined at 40 CFR 122.26(b)(14), including those subject to the State General NPDES Permit for Stormwater Discharges Associated with Industrial Activity (hereinafter the Industrial General Permit);

(b) Vehicle Salvage yards;

(c) Metal and other recycled materials collection facilities, waste transfer facilities;

(d) Vehicle mechanical repair, maintenance, fueling, or cleaning;

(e) Building trades central facilities or yards, corporation yards;

(f) Nurseries and greenhouses;

(g) Building material retailers and storage;

(h) Plastic manufacturers; and

(i) Other facilities designated by the Permittee or Water Board to have a reasonable potential to contribute to pollution of stormwater runoff.

(3) **Prioritization of Facilities**

Facilities of the types described in Provision 4.b.ii.(2) above and identified by the Permittees as having the reasonable potential to contribute to pollution of stormwater runoff shall be prioritized on the basis of the potential for water quality impact using criteria such as pollutant sources on site, pollutants of concern, proximity to a waterbody, violation history of the facility, and other relevant factors.

(4) **Types/Contents of Inspections**

Each Permittee shall conduct inspections to determine compliance with its ordinances and this Permit. Inspections shall include but not be limited to the following:

(a) Prevention of stormwater runoff pollution or illicit discharge by implementing appropriate BMPs;

(b) Visual observations for evidence of unauthorized discharges, illicit connections, and potential discharge of pollutants to stormwater;

(c) Noncompliance with Permittee ordinances and other local requirements; and

(d) Verification of coverage under the Industrial General Permit, if applicable.

(5) **Inspection Frequency** – Permittees shall establish appropriate inspection frequencies for facilities based on Provision 4.b.ii (3) priority, potential for contributing pollution to stormwater runoff, and commensurate with the threat to water quality.

(6) **Record Keeping** – For each facility identified in Provision 4.b.ii, the Permittee shall maintain a database or equivalent of the following information at a minimum:

(a) Name and address of the business and local business operator;

(b) A brief description of business activity including SIC code;

(c) Inspection priority and inspection frequency; and

(d) If coverage under the Industrial General Permit is required.

iii. Reporting – The Permittees shall include the following in the Annual Report:

(1) The list of facilities identified in Provision 4.b.ii in the 2010 Annual Report and revisions or updates in subsequent annual reports; and

(2) The list of facilities scheduled for inspection during the current fiscal year.

C.4.c. Enforcement Response Plan (ERP)

i. Task Description – Permittees shall develop and implement an ERP that will serve as a reference document for inspection staff to take consistent actions to achieve timely and effective compliance from all commercial and industrial site operators.

ii. Implementation Level – The ERP shall contain the following:

(1) **Required enforcement actions** – including timeframes for corrections of problems – for various field violation scenarios. The ERP will provide guidance on appropriate use of the various enforcement tools, such as verbal and written notices of violation, citations, cleanup requirements, administrative and criminal penalties.

(2) **Timely Correction of Violations** – All violations must be corrected in a timely manner with the goal of correcting them before the next rain event but no longer than 10 business days after the violations are discovered. If more than 10 business days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

A description of the Permittee's procedures for follow-up inspections and enforcement actions or referral to another agency, including appropriate time periods for each level of corrective action.

(3) **Referral and Coordination with Water Board** – Each Permittee shall enforce its stormwater ordinances as necessary to achieve compliance at sites with observed violations. For cases in which Permittee enforcement tools are inadequate to remedy the noncompliance, the Permittee shall refer the case to the Water Board, district attorney or other relevant agencies for additional enforcement.

(4) **Recordkeeping** – Permittees shall maintain adequate records to demonstrate compliance and appropriate follow-up enforcement responses for facilities inspected.

Permittees shall maintain an electronic database or equivalent tabular system that contains the following information regarding industrial commercial site inspections:

(a) Name of Facility/Site Inspected
(b) Inspection Date
(c) Industrial General Permit coverage required (Yes or No)
(d) Compliance Status
(e) Type of Enforcement (if applicable)
(f) Type of Activity or Pollutant Source

Examples: Outdoor process/manufacturing areas, Outdoor material storage areas, Outdoor waste storage/disposal areas, outdoor vehicle and equipment storage/maintenance areas, Outdoor parking areas and access roads, Outdoor wash areas, Rooftop equipment, Outdoor drainage from indoor areas

(g) Specific Problems

(h) Problem Resolution

(i) Additional Comments

The electronic database or equivalent tabular system shall be made readily available to the Executive Officer and during inspections and audits by the Water Board staff or its representatives.

(5) The ERP shall be developed and implemented by April 1, 2010.

iii. Reporting – Permittees shall include the following information in each Annual Report:

(1) Number of inspections conducted, Number of violations issued (excluding verbal warnings), Percentage of sites inspected in violation, and number and percent of violations resolved within 10 working days or otherwise deemed resolved in a longer but still timely manner;

(2) Frequency and Types/categories of violations observed, Frequency and type of enforcement conducted;

(3) Summary of types of violations noted by business category; and

(4) Facilities that are required to have coverage under the Industrial General Permit, but have not filed for coverage.

C.4.d. Staff Training

i. Task Description

Permittees shall provide focused training for inspectors annually. Trainings may be Program-wide, Region-wide, or Permittee-specific.

ii. Implementation Level

At a minimum, train inspectors, within the 5-year term of this Permit, in the following topics:

(1) Urban runoff pollution prevention;

(2) Inspection procedures;

(3) Illicit Discharge Detection, Elimination and follow-up; and

(4) Implementation of typical BMPs at Industrial and Commercial Facilities.

Permittees, either countywide or regionally, if they have not already done so, are encouraged to create or adopt guidance for inspectors or reference existing inspector guidance including the California Association of Stormwater Quality Agencies (CASQA) Industrial BMP Handbook.

iii. Reporting

The Permittees shall include the following information in the Annual Report:

(1) Dates of trainings;

(2) Training topics that have been covered; and

(3) Percentage of Permittee inspectors attending training.

C.5. Illicit Discharge Detection and Elimination

The purpose of this provision is to implement the illicit discharge prohibition and to ensure illicit discharges are detected and controlled that are not otherwise controlled under provision C4, Industrial and Commercial Site Controls and C6, Construction Site Controls. Permittees shall develop and implement an illicit discharge program that includes an active surveillance component and a centralized complaint collection and follow-up component to target illicit discharge and non-stormwater sources. Permittees shall maintain a complaint tracking and follow-up data system as their primary accountability reporting for this provision.

C.5.a. Legal Authority

i. Task Description – Permittees shall have the legal authority to prohibit and control illicit discharges and escalate stricter enforcement to achieve expedient compliance.

ii. Implementation Level

(1) Permittees shall have adequate legal authority to address stormwater and non-stormwater pollution associated with, but not limited to the following:

(a) Sewage;

(b) Discharges of wash water resulting from the cleaning of exterior surfaces and pavement, or the equipment and other facilities of any commercial business, or any other public or private facility;

(c) Discharges of runoff from material storage areas, including containing chemicals, fuels, or other potentially polluting or hazardous materials;

(d) Discharges of pool or fountain water containing chlorine, biocides, or other chemicals; discharges of pool or fountain filter backwash water;

(e) Discharges of sediment, pet waste, vegetation clippings, or other landscape or construction-related wastes; and

(f) Discharges of food-related wastes (e.g., grease, fish processing, and restaurant kitchen mat and trash bin wash water, etc.).

(2) Permittees shall have adequate legal authority to prohibit, discover through inspection and surveillance, and eliminate illicit connections and discharges to storm drains.

(3) Permittees shall have adequate legal authority to control the discharge of spills, dumping, or disposal of materials other than storm water to storm drains.

C.5.b. Enforcement Response Plan (ERP)

i. Task Description – Permittees shall develop and implement an ERP that will serve as guidance for inspection staff to take consistent actions to achieve timely and effective abatement of illicit discharges.

ii. Implementation Level – The ERP shall contain the following:

(1) Recommended responses and enforcement actions – including timeframes for corrections of problems – for various types and degree of violations. The ERP shall provide guidelines on when to employ the range of regulatory responses from warnings, citations and cleanup and cost recovery, to administrative or criminal penalties.

(2) Timely Correction of Violations: All violations must be corrected in a timely manner with the goal of correcting them before the next rain event but no longer than 10 business days after the violations are discovered. If more than 10 business days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system. Immediate correction can be temporary and short-term if a long-term, permanent correction will involve significant resources and construction time. An example would be replumbing of a wash area to the sanitary sewer, which would involve an immediate short-term, temporary fix followed by permanent replumbing.

(3) If corrective actions are not implemented promptly or if there are repeat violations, Permittees shall escalate responses as needed to achieve compliance, including referral to other agencies were necessary.

(4) The ERP shall be developed and implemented by April 1, 2010.

C.5.c. Spill and Dumping Response, Complaint Response, and Frequency of Inspections

i. Task Description – Permittees shall have a central contact point, including a phone number for complaints and spill reporting, and publicize this number to both internal Permittee staff and the public. If 911 is selected, also maintain and publicize a staffed, non-emergency phone number with voicemail, which is checked during normal business hours.

Permittees shall develop a spill/dumping response flow chart and phone tree or contact list for internal use that shows the various responsible agencies and their contacts, who would be involved in illicit discharge incident response that goes beyond the Permittees immediate capabilities. The list shall be maintained and updated as changes occur.

Permittees shall conduct reactive inspections in response to complaints and follow-up inspections as needed to ensure that corrective measures have been implemented to achieve and maintain compliance.

ii. Implementation Level – Permittees will have the phone number and contact information available and integrated into training and outreach both to Permittee staff and the public by July 1, 2010.

iii. Reporting – Submit the complaint and spill response phone number and spill contact list with the 2010 Annual Report and update annually if changes occur.

C.5.d. Control of Mobile Sources

i. Task Description – The purpose of this section is to establish oversight and control of pollutants associated with mobile business sources.

ii. Implementation Level – Each Permittee shall develop and implement a program to reduce the discharge of pollutants from mobile businesses.

(1) The program shall include the following:

(a) Development and implementation of minimum standards and BMPs to be required for each of the various types of mobile businesses such as automobile washing, power washing, steam cleaning, and carpet cleaning. This guidance can be developed via county-wide or regional collaboration.

(b) Development and implementation of an enforcement strategy which specifically addresses the unique characteristics of mobile businesses.

(c) Outreach to mobile businesses operating within the Permittee's jurisdiction with minimum standards and BMP requirements and local ordinances through an outreach and education strategy.

(d) Inspection of mobile businesses as needed.

(2) Permittees should cooperate regionally in developing and implementing their programs for mobile businesses, including sharing of mobile business inventories, BMP requirements, enforcement action information, and education.

iii. Reporting – Permittees shall report on implementation of minimum standards and BMPs for mobile business and their enforcement strategy in each Annual Report.

C.5.e. Collection System Screening - Municipal Separate Storm Sewer System (MS4) Map Availability

i. Task Description – Permittees shall perform routine surveys for illicit discharges and illegal dumping in above ground check points in the collection system including elements that are typically inspected for other maintenance purposes, such as end of pipes, creeks, flood conveyances, storm drain inlets and catch basins, in coordination with public works/flood control maintenance surveys, video inspections of storm drains, and during other routine Permittee maintenance and inspection activities when Permittee staff are working in or near the MS4 system.

ii. Implementation Level – Permittees shall develop and implement a screening program utilizing the USEPA/Center for Watershed Protection publication, "Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessment." Permittees shall implement the screening program by conducting a survey of strategic collection system check points (one screening point per square mile of Permittee urban and suburban jurisdiction area, less open space) including some key major outfalls draining industrial areas as defined in 40 CFR 122.26 (b)(5) once each year in dry

weather conditions meaning no significant rainfall within the past 3 weeks. Routine surveys that occur on an ongoing basis during regular conveyance system inspections may be credited toward this requirement. Make maps of the MS4 publicly available, either electronically or in hard copy by July 1, 2010. The public availability shall be through a publicized single point of contact that is convenient for the public, such as a staffed counter or web accessible maps. The MS4 map availability shall be publicized through Permittee directories and web pages.

iii. Reporting – Permittees shall provide a summary of their collection screening program, a summary of problems found during collection system screening, and any changes to the screening program in each Annual Report.

C.5.f. Tracking and Case Follow-up

i. Task Description – All incidents or discharges reported to the complaint/spill system that might pose a threat to water quality shall be logged to track follow-up and response through problem resolution. The data collected shall be sufficient to demonstrate escalating responses for repeated problems, and inter/intra-agency coordination, where appropriate.

ii. Implementation Level – Create and maintain a water quality spill and discharge complaint tracking and follow-up in an electronic database or equivalent tabular system by April 1, 2010.

The spill and discharge complaint tracking system shall contain the following information:

(1) Complaint information:
   (a) Date and time of complaint
   (b) Type of pollutant
   (c) Problem Status (potential or actual discharge.)

(2) Investigation information:
   (a) Date and time started
   (b) Type of pollutant
   (c) Entered storm drain and/or receiving water
   (d) Date abated
   (e) Type of enforcement (if applicable)

(3) Response time (days)
   (a) Call to investigation
   (b) Investigation to abatement
   (c) Call to abatement

The electronic database or equivalent tabular system shall be made available to Water Board staff as needed for review of enforcement response through problem resolution.

iii. Reporting – Permittees shall provide the following information in the Annual Report:

(1) Number of discharges reported;

(2) Number of discharges reaching storm drains and/or receiving waters;

(3) Number and percentage of discharges resolved in a timely manner; and

(4) Summary of major types of discharges and complaints.

C.6. Construction Site Control

Each Permittee shall implement a construction site inspection and control program at all construction sites, with follow-up and enforcement consistent with each Permittee's respective Enforcement Response Plan (ERP), to prevent construction site discharges of pollutants and impacts on beneficial uses of receiving waters. Inspections shall confirm implementation of appropriate and effective erosion and other construction pollutant controls by construction site operators/developers; and reporting shall demonstrate the effectiveness of this inspection and problem solution activity by the Permittees.

C.6.a. Legal Authority for Effective Site Management

i. Task Description – Permittees shall have the ability to require effective stormwater pollutant controls, and escalate progressively stricter enforcement to achieve expedient compliance and clean up at all public and private construction sites.

ii. Implementation Level

(1) Permittees shall have the legal authority to require at all construction sites year round effective erosion control, run-on and runoff control, sediment control, active treatment systems (as appropriate), good site management, and non storm water management through all phases of construction (including but not limited to site grading, building, and finishing of lots) until the site is fully stabilized by landscaping or the installation of permanent erosion control measures.

(2) Permittees shall have the legal authority to oversee, inspect, and require expedient compliance and clean up at all construction sites year round.

iii. Reporting – Permittees shall certify adequacy of their respective legal authority in the 2010 Annual Report.

C.6.b. Enforcement Response Plan (ERP)

i. Task Description – Permittees shall develop and implement an ERP that will serve as a reference document for inspection staff to take consistent actions to achieve timely and effective compliance from all public and private construction site owners/operators.

ii. Implementation Level

(1) The ERP shall include required enforcement actions – including timeframes for corrections of problems – for various field violation scenarios. All violations must be corrected in a timely manner with the goal of correcting them before the next rain event but no longer than 10 business days after the violations are discovered. If more than 10 business days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

(2) If site owners/operators do not implement appropriate corrective actions in a timely manner, or if violations repeat, Permittees shall take progressively stricter responses to achieve compliance. The ERP shall include the structure for progressively stricter responses and various violation scenarios that evoke progressively stricter responses.

(3) The ERP shall be developed and implemented by April 1, 2010.

C.6.c. Best Management Practices Categories

i. Task Description – Permittees shall require all construction sites to have site specific, and seasonally- and phase-appropriate, effective Best Management Practices (BMPs) in the following six categories:

- Erosion Control
- Run-on and Run-off Control
- Sediment Control
- Active Treatment Systems (as necessary)
- Good Site Management
- Non Stormwater Management.

Theses BMP categories are listed in State General NPDES Permit for Stormwater Discharges Associated with Construction Activities (hereinafter the Construction General Permit).

ii. Implementation Level

The BMPs targeting specific pollutants within the six categories listed in C.6.c.i. shall be site specific. Site specific BMPs targeting specific pollutants from the six categories listed in C.6.c.i. can be a combination of BMPs from:

- California BMP Handbook, Construction, January 2003.
- Caltrans Stormwater Quality Handbooks, Construction Site Best Management Practices Manual, March 2003, and addenda.
- California Regional Water Quality Control Board, San Francisco Bay Region, Erosion and Sediment Control Field Manual, 2002.
- New BMPs available since the release of these Handbooks.

C.6.d. Plan Approval Process

i. Task Description – Permittees shall review erosion control plans for consistency with local requirements, appropriateness and adequacy of proposed BMPs for each site before issuance of grading permits for projects. Permittees shall also verify that sites disturbing one acre or more of land have filed a Notice of Intent for coverage under the Construction General Permit.

ii. Implementation Level – Before approval and issuance of local grading permits, each Permittee shall perform the following:

(1) Review the site operator's/developer's erosion/pollution control plan or Stormwater Pollution Prevention Plan (SWPPP) to verify compliance with the Permittee's grading ordinance and other local requirements. Also review the site operator's/developer's erosion/pollution control plan or SWPPP to verify that seasonally appropriate and effective BMPs for the six categories listed in C.6.c.i. are planned;

(2) For sites disturbing one acre or more of soil, verify that the site operators/developers have filed a Notice of Intent for permit coverage under the Construction General Permit; and

(3) Provide construction stormwater management educational materials to site operators/developers, as appropriate.

C.6.e. Inspections

i. Task Description – Permittees shall conduct inspections to determine compliance with local ordinances (grading and stormwater) and determine the effectiveness of the BMPs in the six categories listed in C.6.c.i.; and Permittees shall require timely corrections of all actual and threatened violations of local ordinances observed.

ii. Implementation Level

(1) **Wet Season Notification**

By September 1st of each year, each Permittee shall remind all site developers and/or owners disturbing one acre or more of soil to prepare for the upcoming wet season.

(2) **Frequency of Inspections**

Inspections shall be conducted monthly during the wet season[11] at the following sites:

(a) All construction sites disturbing one or more acre of land; and

(b) **High Priority Sites** – Other sites determined by the Permittee or the Water Board as significant threats to water quality. In evaluating threat to water quality, the following factors shall be considered:

(i) Soil erosion potential or soil type;

(ii) Site slope;

(iii) Project size and type;

(iv) Sensitivity or receiving waterbodies;

(v) Proximity to receiving waterbodies;

(vi) Non-stormwater discharges; and

(vii) Any other relevant factors as determined by the local agency or the Water Board.

[11] For the purpose of inspections, the wet season is defined as October through April, but sites need to implement seasonally appropriate BMPs in the six categories listed in C.6.c.i throughout the year.

(3) **Contents of Inspections**

Inspections shall focus on the adequacy and effectiveness of the site specific BMPs implemented for the six categories listed in C.6.c.i. Permittees shall require timely corrections of all actual and potential problems observed. Inspections of construction sites shall include, but are not limited to, the following:

(a) Assessment of compliance with Permittee's ordinances and permits related to urban runoff, including the implementation and maintenance of the verified erosion/pollution control plan or SWPPP (from C.6.d.ii.(1));

(b) Assessment of the adequacy and effectiveness of the site specific BMPs implemented for the six categories listed in C.6.c.i.;

(c) Visual observations for:

- actual discharges of sediment and/or construction related materials into stormdrains and/or waterbodies.
- evidence of sediment and/or construction related materials discharges into stormdrains and/or waterbodies.
- illicit connections.
- potential illicit connections.

(d) Education on stormwater pollution prevention, as needed.

(4) **Tracking**

All inspections must be recorded on a written or electronic inspection form. Inspectors shall follow the ERP if a violation is noted and shall require timely corrections of all actual and threatened violations of local ordinances observed. All violations must be corrected in a timely manner with the goal of correcting them before the next rain event but no longer than 10 business days after the violations are discovered. If more than 10 business days are required for compliance, a rationale shall be recorded on the inspection form.

Permittees shall track in an electronic database or tabular format all inspections. This electronic database or tabular format shall be made readily available to the Executive Officer and during inspections and audits by the Water Board staff or its representatives. This electronic database or tabular format shall record the following information for each site inspection:

(a) Site name;

(b) Inspection date;

(c) Weather during inspection;

(d) Has there been rainfall with runoff since the last inspection?;

(e) Enforcement Response Level (Use ERP);

(f) Problem(s) observed using Illicit Discharge and the six BMP categories listed in C.6.c.i.;

(g) Specific Problem(s) (List the specific problem(s) within the BMP categories);

(h) Resolution of Problems noted using the following three standardized categories: Problems Fixed, Need More Time, and Escalate Enforcement; and

(i) Comments, which shall include all Rationales for Longer Compliance Time, all escalation in enforcement discussions, and any other information that may be relevant to that site inspection.

iii. Reporting

(1) In each Annual Report, each Permittee shall summarize the following information:

(a) Total number of active sites disturbing less than one acre of soil requiring inspection;

(b) Total number of active sites disturbing 1 acre or more of soil;

(c) Total number of inspections conducted;

(d) Number and percentage[12] of violations in each of the six categories listed in C.6.c.i.;

(e) Number and percentage[13] of each type of enforcement action taken as listed in each Permittee's ERP;

(f) Number of discharges, actual and those inferred through evidence, of sediment or other construction related materials;

(g) Number of sites with discharges, actual and those inferred through evidence, of sediment or other construction related materials;

(h) Number and percentage[14] of violations fully corrected prior to the next rain event but no longer than 10 business days after the violations are discovered or otherwise considered corrected in a timely, though longer period; and

(i) Number and percentage[15] of violations not fully corrected 30 days after the violations are discovered.

(2) In each Annual Report, each Permittee shall evaluate its respective electronic database or tabular format and the summaries produced in C.6.e.ii.(4) above. This evaluation shall include findings on the program's strength, comparison to previous years' results, as well as areas that need

[12] Percentage shall be calculated as number of violations in each category divided by total number of violations in all six categories.

[13] Percentage shall be calculated as number of each type of enforcement action divided by the total number of enforcement actions.

[14] Percentage shall be calculated as follows: number of violations fully corrected prior to the goal of the next rain event but no later than10 business days after the violations are discovered divided by the total number of violations for the reporting year.

[15] Percentage shall be calculated as follows: number of violations not fully corrected 30 days after the violations are discovered divided by the total number of violations for the reporting year.

more focused education for site owners, operators, and developers the following year.

(3) The Executive Officer may require that the information recorded and tracked by C.6.e.ii.(4) be submitted electronically or in a tabular format. Permittees shall submit the information within 10-working days of the Executive Officer's requirement. Submittal of the information in tabular form for the reporting year is not required in each Annual Report but encouraged.

C.6.f. Staff Training

i. Task Description – Permittees shall provide training or access to training for staff conducting construction stormwater inspections.

ii. Implementation Level – Permittees shall provide training at least every other year to municipal staff responsible for conducting construction site stormwater inspections. Training topics will include information on correct uses of specific BMPs, proper installation and maintenance of BMPs, Permit requirements, local requirements, and ERP.

iii. Reporting – Permittees shall include in each Annual Report the following information: training topics covered, dates of training, and the percentage of Permittees' inspectors attending each training. If no training in that year, so state.

C.7. Public Information and Outreach

Each Permittee shall increase the knowledge of the target audiences regarding the impacts of stormwater pollution on receiving water and potential solutions to mitigate the problems caused; change the waste disposal and runoff pollution generation behavior of target audiences by encouraging implementation of appropriate solutions; and involve various citizens in mitigating the impacts of stormwater pollution.

C.7.a. Storm Drain Inlet Marking

i. Task Description – Permittees shall mark and maintain at least 80 percent of municipally-maintained storm drain inlets with an appropriate stormwater pollution prevention message, such as "No dumping, drains to Bay" or equivalent. At least 80% of municipally-maintained storm drain inlet markings shall be inspected and maintained at least once per 5-year permit term. For newly approved, privately maintained streets, Permittees shall require inlet marking by the project developer upon construction and maintenance of markings through the development maintenance entity. Markings shall be verified prior to acceptance of the project.

ii. Implementation Level

(1) Inspect and maintain markings of at least 80 percent of municipality maintained inlets to ensure they are legibly labeled with a no dumping message or equivalent once per permit term.

(2) Verify that newly developed streets are marked prior to acceptance of the project.

iii. Reporting

(1) In the 2013 Annual Report, each Permittee shall report prior years' annual percentages of municipality maintained inlet markings inspected and maintained as legible with a no dumping message or equivalent.

(2) In the 2013 Annual Report, each Permittee shall report prior years' annual number of projects accepted after inlet markings were verified.

C.7.b. Advertising Campaigns

i. Task Description – Permittees shall participate in or contribute to advertising campaigns on trash/litter in waterways and pesticides with the goal of significantly increasing overall awareness of stormwater runoff pollution prevention messages and behavior changes in target audience.

ii. Implementation Level

(1) Target a broad audience with two separate advertising campaigns, one focused on reducing trash/litter in waterways and one focused on reducing the impact of urban pesticides. The advertising campaigns may be coordinated regionally or county-wide.

(2) Permittees shall conduct a pre-campaign survey and a post-campaign survey to identify and quantify the audiences' knowledge, trends, and attitudes and/or practices; and to measure the overall population's awareness of the messages and behavior changes achieved by the two advertising campaigns. These surveys may be done regionally or county-wide.

iii. Reporting

(1) In the Annual Report following the pre-campaign survey, each Permittee (or the Countywide Program, if the survey was done county-wide or regionally) shall provide a report of the survey completed, which at a minimum, shall include the following:

- A summary of how the survey was implemented.
- A copy of the survey.
- A copy of the survey results.
- An analysis of the survey results.
- A discussion of the outreach strategies based on the survey results.
- A discussion of the planned or future advertising campaigns to influence awareness and behavior changes regarding trash/litter and pesticides.

(2) In the Annual Report following the post campaign survey, each Permittee (or the Countywide Program, if survey was done county-wide or regionally) shall provide a report of the survey completed, which at minimum shall include the information required in the pre-campaign report (C.7.b.iii.(1)) and the following:

- A discussion of the campaigns.
- A discussion of the measurable changes in awareness and behavior achieved.
- An update of outreach strategies based on the survey results.

C.7.c. Media Relations – Use of Free Media

i. Task Description – Permittees shall participate in or contribute to a media relations campaign. Maximize use of free media/media coverage with the objective of significantly increasing the overall awareness of stormwater pollution prevention messages and associated behavior change in target audiences, and to achieve public goals.

ii. Implementation Level – Conduct a minimum of six pitches (e.g., press releases, public service announcements, and/or other means) per year at the county-wide program, regional, and/or local levels.

iii. Reporting – In each Annual Report, each Permittee (or the Countywide Program, if the media relations campaign was done county-wide or regionally) shall include the details of each media pitch, such as the medium, date, and content of the pitch.

C.7.d. Stormwater Point of Contact

i. Task Description – Permittees shall individually or collectively create and maintain a point of contact, e.g., phone number or website, to provide the public with information on watershed characteristics and stormwater pollution prevention alternatives.

ii. Implementation Level – Maintain and publicize one point of contact for information on stormwater issues. Permittees may combine this function with the complaint/spill contact required in C.5.

iii. Reporting – In the 2010 Annual Report, each Permittee shall discuss how this point of contact is publicized and maintained. If any change occurs in this contact, report in subsequent annual report.

C.7.e. Public Outreach Events

i. Task Description – Participate in and/or host events such as fairs, shows, workshops, (e.g., community events, street fairs, and farmers' markets), to reach a broad spectrum of the community with both general and specific stormwater runoff pollution prevention messages. Pollution prevention messages shall include encouraging residents to (1) wash cars at commercial car washing facilities, (2) use minimal detergent when washing cars, and (3) divert the car washing runoff to landscaped area.

ii. Implementation Level – Each Permittee shall annually participate and/or host the number of events according to its population, as shown in the table below:

Table 7.1 Public Outreach Events[16]

Permittee Population	Number of Outreach Events
< 10,000	2
10,001– 40,000	3
40,001 – 100,000	4
100,001 – 175,000	5
175,001 – 250,000	6
> 250,000	8
Non-population-based Permittees[17]	6

Should a public outreach event contain significant citizen involvement elements, the Permittee may claim credit for both Public Outreach Events (C.7.e.) and Citizen Involvement Events (C.7.g.).

[16] Permittees may claim individual credits for all events in which their Countywide Program or BASMAA participates, supports, and/or hosts, which are publicized to reach the Permittees jurisdiction.

[17] Alameda County Flood Control and Water Conservation District, Contra Costa Flood Control and Water Conservation District, Santa Clara Valley Water District, Vallejo Sanitation and Flood Control District, and Zone 7 of the Alameda County Flood Control and Water Conservation District

iii. Reporting – In each Annual Report, each Permittee shall list the events (name of event, event location, and event date) participated in and assess the effectiveness of efforts with appropriate measures (e.g., success at reaching a broad spectrum of the community, number of participants compared to previous years, post-event survey results, quantity/volume materials cleaned up and comparisons to previous efforts).

C.7.f. Watershed Stewardship Collaborative Efforts

i. Task Description – Permittees shall individually or collectively encourage and support watershed stewardship collaborative efforts of community groups such as the Contra Costa Watershed Forum, the Santa Clara Basin Watershed Management Initiative, "friends of creek" groups, and other organizations that benefit the health of the watershed such as the Bay-Friendly Landscaping and Gardening Coalition. If no such organizations exist, encourage and support development of grassroots watershed groups or engagement of an existing group, such as a neighborhood association, in watershed stewardship activities. Coordinate with existing groups to further stewardship efforts.

ii. Implementation Level – Annually demonstrate effort.

iii. Reporting – In each Annual Report, each Permittee shall state the level of effort, describe the support given, state what efforts were undertaken and the results of these efforts, and provide an evaluation of the effectiveness of these efforts.

C.7.g. Citizen Involvement Events

i. Task Description – Permittees shall individually or collectively, support citizen involvement events, which provide the opportunity for citizens to directly participate in water quality and aquatic habitat improvement, such as creek/shore clean-ups, adopt-an-inlet/creek/beach programs, volunteer monitoring, service learning activities such as storm drain inlet marking, community riparian restoration activities, community grants, other participation and/or host volunteer activities.

ii. Implementation Level – Each Permittee shall annually sponsor and/or host the number of citizen involvement events according to its population, as shown in the table below:

Table 7.2 Community Involvement Events[18]

Permittee Population	Number of Involvement Events
< 10,000	1
10,001 – 40,000	1
40,001 – 100,000	2
100,001 – 175,000	3
175,001 – 250,000	4

[18] Permittees can claim individual credit for all events sponsored or hosted by their Countywide Program or BASMAA, which are publicized to reach the Permittee's jurisdiction.

Permittee Population	Number of Involvement Events
> 250,000	5
Non-population-based Permittees	2

Should a citizen involvement event contain significant public outreach elements, the Permittee may claim credit for both Citizen Involvement Events (C.7.g.) and Public Outreach Events (C.7.e.).

iii. Reporting – In each Annual Report, each Permittee shall list the events (name of event, event location, and event date) participated in and assess the effectiveness of efforts with appropriate measures (e.g., success at reaching a broad spectrum of the community, number of participants compared to previous years, post-event survey results, number of inlets/creeks/shores/parks/and such adopted, quantity/volume materials cleaned up, data trends, and comparisons to previous efforts).

C.7.h. School-Age Children Outreach

i. Task Description – Permittees shall individually or collectively implement outreach activities designed to increase awareness of stormwater and/or watershed message(s) in school-age children (K through 12).

ii. Implementation Level – Implement annually and demonstrate effectiveness of efforts through assessment.

iii. Reporting – In each Annual Report, each Permittee shall state the level of effort, spectrum of children reached, and methods used, and provide an evaluation of the effectiveness of these efforts.

C.7.i. Outreach to Municipal Officials

i. Task Description – Permittees shall conduct outreach to municipal officials. One alternative means of accomplishing this is through the use of the Nonpoint Education for Municipal Officials program (NEMO) to significantly increase overall awareness of stormwater and/or watershed message(s) among regional municipal officials.

ii. Implementation Level – At least once per permit cycle, or more often.

iii. Reporting – Permittees shall summarize efforts in the 2013 Annual Report.

C.8. Water Quality Monitoring

C.8.a. Compliance Options

i. Regional Collaboration – All Permittees shall comply with the monitoring requirements in C.8, however, Permittees may choose to comply with any requirement of this Provision through a collaborative effort to conduct or cause to be conducted the required monitoring in their jurisdictions. Where all or a majority of the Permittees collaborate to conduct water quality monitoring, this shall be considered a regional monitoring collaborative.

Where an existing collaborative body has initiated plans, before the adoption of this Permit, to conduct monitoring that would fulfill a requirement(s) of this Provision, but the monitoring would not meet this Provision's due date(s) by a year or less, the Permittees may request the Executive Officer adjust the due date(s) to synchronize with such efforts.

The types, quantities, and quality of data required within Provision C.8 establish the minimum level-of-effort that a regional monitoring collaborative must achieve. Provided these data types, quantities, and quality are obtained, a regional monitoring collaborative may develop its own sampling design. For Pollutants of Concern and Long-Term monitoring required under C.8.e, an alternative approach may be pursued by Permittees provided that: either similar data types, data quality, data quantity are collected with an equivalent level of effort described under C.8.e; or an equivalent level of monitoring effort is employed to answer the management information needs stated under C.8.e.

ii. Implementation Schedule – Monitoring conducted through a regional monitoring collaborative shall commence data collection by October 2011. All other Permittee monitoring efforts shall commence data collection by October 2010. By July 1, 2010, each Permittee shall provide documentation to the Water Board, such as a written agreement, letter, or similar document that confirms whether the Permittee will conduct monitoring individually or through a regional monitoring collaborative.[19]

iii. Permittee Responsibilities – A Permittee may comply with the requirements in Provision C.8 by performing the following:

(1) Contributing to its stormwater countywide program, as determined appropriate by the Permittee members, so that the stormwater countywide Program conducts monitoring on behalf of its members;

(2) Contributing to a regional collaborative effort;

[19] This documentation will allow the Water Board to know when monitoring will commence for each Permittee. Permittees who commit to monitoring individually may join the regional monitoring collaborative at any time. Any Permittee who discontinues monitoring through the regional collaborative must commence complying with all requirements of Provision C.8 immediately.

(3) Fulfilling monitoring requirements within its own jurisdictional boundaries; or

(4) A combination of the previous options, so that all requirements are fulfilled.

iv. Third-party Monitoring – Permittees may choose to fulfill requirements of Provision C.8 using data collected by citizen monitors or other third-party organizations, provided the data are demonstrated to meet the data quality objectives described in Provision C.8.h. Where an existing third-party organization has initiated plans to conduct monitoring that would fulfill a requirement(s) of this Provision, but the monitoring would not meet this Provision's due date(s) by a year or less, the Permittees may request that the Executive Officer adjust the due date(s) to synchronize with such efforts.

C.8.b. San Francisco Estuary Receiving Water Monitoring

With limited exceptions, urban runoff from the Permittees' jurisdictions ultimately discharges to the San Francisco Estuary. Monitoring of the Estuary is intended to answer questions[20] such as:

- Are chemical concentrations in the Estuary potentially at levels of concern and are associated impacts likely?
- What are the concentrations and masses of contaminants in the Estuary and its segments?
- What are the sources, pathways, loadings, and processes leading to contaminant related impacts in the Estuary?
- Have the concentrations, masses, and associated impacts of contaminants in the Estuary increased or decreased?
- What are the projected concentrations, masses, and associated impacts of contaminants in the Estuary?

Permittees shall participate in implementing an Estuary receiving water monitoring program, at a minimum equivalent to the San Francisco Estuary Regional Monitoring Program for Trace Substances (RMP), by contributing their fair-share financially on an annual basis.

C.8.c. Status Monitoring/Rotating Watersheds

i. Status Monitoring is intended to answer these questions: Are water quality objectives, both numeric and narrative, being met in local receiving waters,

[20] These are the management questions approved by the Regional Monitoring Program's Steering Committee on May 9, 2008, and stated at http://www.sfei/rmp/rmp_steering_meetings/rmp_steering_meeting_5_09_08/Item%2010a%20Attachment%201%20%20Draft%20RMP%20Management%20Questions%2005-02-08%20Annotated.pdf. While the stated objectives may change over time, the intent of this provision is for Permittees to continue contributing financially and as stakeholders in such a program as the RMP, which monitors the quality of San Francisco Bay.

including creeks, rivers and tributaries? Are conditions in local receiving waters supportive of or likely to be supportive of beneficial uses?

ii. Parameters and Methods – Permittees shall conduct Status Monitoring using the parameters, methods, occurrences, durations, and minimum number of sampling sites as described in Table 8.1. Spring sampling shall be conducted during the April - June timeframe; dry weather sampling shall be conducted during the July - September timeframe. Minor variations of the parameters and methods may be allowed with Executive Officer concurrence.

iii. Frequency – Permittees shall complete the Status Monitoring in Table 8.1 at the following frequencies:

- Alameda Permittees – annually
- Contra Costa Permittees – annually
- Fairfield-Suisun Permittees – twice during the Permit term
- San Mateo Permittees – annually
- Santa Clara Permittees – annually
- Vallejo Permittees – once during the Permit term

Table 8.1 Status Monitoring Elements

Status Monitoring Parameter	Sampling and/or Analytical Method[21]	Minimum Sampling Occurrence[22]	Duration of Sampling	Minimum # Sample Sites to Monitor/Yr[23] Santa Clara & Alameda Permittees/ Contra Costa & San Mateo Permittees/ Fairfield-Suisun & Vallejo Permittees	Result(s) that Trigger a Monitoring Project in Provision C.8.d.i.
Biological Assessment[24] (Includes Physical Habitat Assessment and General Water Quality Parameters[25]) Nutrients (total phosphorus, dissolved orthophosphate, total nitrogen, nitrate, ammonia, silica, chloride,	SWAMP Std Operating Procedure[26,27,28] for Biological Assessments & PHab; SWAMP comparable	1/yr (Spring Sampling)	Grab sample	Spring 20 / 10 / 4	BMI metrics that indicate substantially degraded community as per Attachment H, Table H-1 For Nutrients: 20% of results in one waterbody exceed one or more water quality standard

[21] Refers to field protocol, instrumentation and/or laboratory protocol.

[22] Refers to the number of sampling events at a specific site in a given year.

[23] The number of sampling sites shown is based on the relative population in each Regional Stormwater Countywide Program and is listed in this order: Santa Clara & Alameda Countywide / Contra Costa & San Mateo Countywide / Vallejo & Fairfield-Suisun Programs.

[24] The same general location must be used to collect benthic community, sediment chemistry, and sediment toxicity samples. General Water Quality Parameters need not be collected twice, where it is collected by a multi-parameter probe at a subset of these sample sites (see next row of Table 8.1).

[25] Includes dissolved oxygen, temperature, conductivity, and pH.

[26] Ode, P.R. 2007. Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California, California State Water Resources Control Board Surface Water Ambient Monitoring Program (SWAMP), as subsequently revised (http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/phab_sopr6.pdf). Permittees may coordinate with Water Board staff to modify their sampling procedures if these referenced procedures change during the Permit term.

[27] Biological assessments shall include benthic macroinvertebrates and algae. Bioassessment sampling method shall be multihabitat reach-wide. Macroinvertebrates shall be identified according to the Standard Taxonomic Effort Level I of the Southwestern Association of Freshwater Invertebrate Taxonomists, using the most current SWAMP approved method. Current methods are documented in (1) SWAMP Standard Operating Procedure (SOP) and Interim Guidance on Quality Assurance for SWAMP Bioassessments, Memorandum to SWAMP Roundtable from Beverly H. van Buuren and Peter R. Ode, 5-21-07, and (2) Amendment to SWAMP Interim Guidance on Quality Assurance for SWAMP Bioassessments, Memorandum to SWAMP Roundtable from Beverly H. van Buuren and Peter R. Ode, 9-17-08. For algae, include mass (ash-free dry weight), chlorophyll a, diatom and soft algae taxonomy, and reachwide algal percent cover. Physical Habitat (PHab) Assessment shall include the SWAMP basic method plus 1) depth and pebble count + CPOM, 2) cobble embeddedness, 3) discharge measurements, and 4) in-stream habitat. Permittees may coordinate with Water Board staff to modify these sampling procedures if SWAMP procedures change during the Permit term.

[28] Algae shall be collected in a consistent timeframe as Regional SWAMP. For guidance on algae sampling and evaluation: Fetscher, A. and K. McLaughlin, May 16, 2008. Incorporating Bioassessment Using Freshwater Algae into California's Surface Water Ambient Monitoring Program (SWAMP). Technical Report 563 and current SWAMP-approved updates to Standard Operating Procedures therein. Available at http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/reports/563_periphyton_bioassessment.pdf.

Status Monitoring Parameter	**Sampling and/or Analytical Method**[21]	**Minimum Sampling Occurrence**[22]	**Duration of Sampling**	**Minimum # Sample Sites to Monitor/Yr**[23] Santa Clara & Alameda Permittees/ Contra Costa & San Mateo Permittees/ Fairfield-Suisun & Vallejo Permittees	**Result(s) that Trigger a Monitoring Project in Provision C.8.d.i.**
dissolved organic carbon, suspended sediment concentration)	methods for Nutrients				or established threshold
General Water Quality[29]	Multi-Parameter Probe	2/yr (Concurrent with bioassessment & during the Aug. - Sept. timeframe)	15-minute intervals for 1-2 weeks	3 / 2 / 1	20% of results in one waterbody exceed one or more water quality standard or established threshold
Chlorine (Free and Total)	USEPA Std. Method 4500 Cl F[30]	2/yr Spring & Dry Seasons	Grab sample	Spring 20 / 10 / 2 Dry 3 / 2 / 1	After immediate resampling, concentrations remain > 0.08 mg/L
Temperature	Digital Temperature Logger	60-minute intervals	60-minute intervals April through Sept.	8 / 4 / 1	20% of results in one waterbody exceed applicable temperature threshold[31]
Toxicity – Water Column[32]	Applicable SWAMP Comparable Method	2/yr (1/Dry Season & 1 Storm Event)	Grab or composite sample	3 / 2 / 1	If toxicity results < 50% of control results, repeat sample. If 2nd sample yields < 50% of control results, proceed to C.8.d.i.

[29] Includes dissolved oxygen, temperature, conductivity, and pH.

[30] The method of analysis shall achieve a method detection limit at least as low as that achieved by the Amperometric Titration Method (4500-Cl from *Standard Methods for Examination of Water and Wastewater*, Edition 20).

[31] If temperatures exceed applicable threshold (e.g., Maximum Weekly Average Temperature, Sullivan K., Martin, D.J., Cardwell, R.D., Toll, J.E., Duke, S. 2000. *An Analysis of the Effects of Temperature on Salmonids of the Pacific Northwest with Implications for Selecting Temperature Criteria, Sustainable Ecosystem Institute*) or spike with no obvious natural explanation observed.

[32] *US EPA three species toxicity tests: Selenastrum* growth and *Ceriodaphnia* and *Pimephales* with lethal and sublethal endpoints. Also H*yalella azteca with lethal endpoint.*

Status Monitoring Parameter	**Sampling and/or Analytical Method**[21]	**Minimum Sampling Occurrence**[22]	**Duration of Sampling**	**Minimum # Sample Sites to Monitor/Yr**[23] Santa Clara & Alameda Permittees/ Contra Costa & San Mateo Permittees/ Fairfield-Suisun & Vallejo Permittees	**Result(s) that Trigger a Monitoring Project in Provision C.8.d.i.**
Toxicity– Bedded Sediment, Fine-grained[33]	Applicable SWAMP Comparable Method	1/yr	Grab sample	3 / 2 / 1 At fine-grained depositional area at bottom of watershed	See Attachment H, Table H-1
Pollutants – Bedded Sediment,[34] fine-grained	Applicable SWAMP Comparable Method inc. grain size	1/yr	Grab sample	3 / 2 / 1 At fine-grained depositional area at bottom of watershed	See Attachment H, Table H-1
Pathogen Indicators[35]	U.S. EPA protocol[36]	1/yr (During Summer)	Follow U.S. EPA protocol	5 / 5 / * *Fairfield-Suisun & Vallejo Permittees: 3 sites twice in permit term	Exceedance of USEPA criteria
Stream Survey (stream walk & mapping)[37]	USA[38] or equivalent	1 waterbody/yr	N/A	9 / 6 / 3 stream miles/year	N/A

[33] Bedded sediments should be fine-grain from depositional areas. Grain size and TOC must be reported. Coordinate with TMDL Provision requirements as applicable.

[34] Bedded sediments should be fine-grain from depositional areas. Grain size and TOC must be reported. Analytes shall include all of those reported in MacDonald et al. 2000 (including copper, nickel, mercury, PCBs, DDT, chlordane, dieldrin) as well as pyrethroids (see Table 8.4 for list of pyrethroids). Coordinate with TMDL Provision requirements as applicable. MacDonald, D.D., G.G. Ingersoll, and T.A. Berger. 2000. Development and Evaluation of Consensus-based Sediment Quality Guidelines for Freshwater Ecosystems. *Archives of Environ. Contamination and Toxicology* 39(1):20–31.

[35] Includes fecal coliform and *E. Coli.*

[36] Rather than collecting samples over five separate days, Permittees may use Example #2, pg. 54, of USEPA's *Implementation Guidance for Ambient Water Quality Criteria for Bacteria*, March 2004 Final.

[37] The Stream Surveys need not be repeated on a watershed if a Stream Survey was completed on that waterbody within the previous five years. The number of stream miles to be surveyed in any given year may be less than that shown in Table 8-1 in order to avoid repeating surveys at areas surveyed during the previous five years.

[38] Center for Watershed Protection, Manual 10: *Unified Stream Assessment: A User's Manual*, February 2005.

iv. Locations – For each sampling year (per C.8.c.iii.), Permittees shall select at least one waterbody to sample from the applicable list below. Locations shall be selected so that sampling is sufficient to characterize segments of the waterbody(s). For example, Permittees required to collect a larger number of samples should sample two or more waterbodies, so that each sampling effort represents a reasonable segment length and/or type. Samples shall be collected in reaches that receive urban stormwater discharges, except in possible infrequent instances where non-urban-impacted stream samples are needed for comparison[39]. Waterbody selection shall be based on factors such as watershed area, land use, likelihood of urban runoff impacts, and existing monitoring data.

Table 8.2 Status Monitoring Locations – Waterbodies

SCVURPPP	ACCWP	CCCWP	SMCWPPP	FSUMRP	VALLEJO
Coyote Creek and tributaries	Arroyo Valle (below Livermore or lower)	Kirker Creek	San Pedro Creek and tributaries	Laurel Creek	Chabot Creek
Guadalupe River and tributaries	Arroyo Mocho	Mt. Diablo Creek	Pilarcitos Creek	Ledgewood Creek	Austin Creek & tributaries
San Tomas Creek and tributaries	Tassajara Creek	Walnut Creek and tributaries	Colma Creek		
Calabazas Creek	Alamo Creek	Rodeo Creek	San Bruno Creek and tributaries		
Permanente Creek and tributaries	Arroyo de la Laguna	Pinole Creek	Millbrae Creek and tributaries		
Stevens Creek and tributaries	Alameda Creek (at Fremont or below)	San Pablo Creek	Mills Creek and tributaries		
Matadero Creek and tributaries	San Lorenzo Creek & tribs	Alhambra Creek	Easton Creek and tributaries		
Adobe Creek	San Leandro Creek & tribs	Wildcat Creek	Sanchez Creek and tributaries		
Lower Penitencia Creek and tributaries	Oakland, Berkeley, or Albany Creeks		Burlingame Creek and tributaries		
Barron Creek			San Mateo Creek (below dam only)		
San Francisquito Creek & tributaries			Borel Creek & tributaries		
			Laurel Creek & tribs		
			Belmont Creek & tribs		
			Pulgas Creek & tribs		
			Cordilleras & tributaries		
			Redwood Creek & tribs		
			Atherton Creek & tribs		
			San Francisquito Creek and tributaries		

[39] Sampling efforts shall focus on stream reaches with urban stormwater system discharges. Sampling upstream of urban outfalls is not precluded where needed to meet sampling plan objectives.

v. Status Monitoring Results – When Status Monitoring produces results such as those described in the final column of Table 8.1, Permittees shall conduct Monitoring Project(s) as described in C.8.d.i.

C.8.d. Monitoring Projects – Permittees shall conduct the Monitoring Projects listed below.

i. Stressor/Source Identification – When Status results trigger a follow-up action as indicated in Table 8.1, Permittees shall take the following actions, as also required by Provision C.1. If the trigger stressor or source is already known, proceed directly to step 2. The first follow-up action shall be initiated as soon as possible, and no later than the second fiscal year after the sampling event that triggered the Monitoring Project.

(1) Conduct a site specific study (or non-site specific if the problem is wide-spread) in a stepwise process to identify and isolate the cause(s) of the trigger stressor/source. This study should follow guidance for Toxicity Reduction Evaluations (TRE)[40] or Toxicity Identification Evaluations (TIE).[41] A TRE, as adapted for urban stormwater data, allows Permittees to use other sources of information (such as industrial facility stormwater monitoring reports) in attempting to determine the trigger cause, potentially eliminating the need for a TIE. If a TRE does not result in identification of the stressor/source, Permittees shall conduct a TIE.

(2) Identify and evaluate the effectiveness of options for controlling the cause(s) of the trigger stressor/source.

(3) Implement one or more controls.

(4) Confirm the reduction of the cause(s) of trigger stressor/source.

(5) Stressor/Source Identification Project Cap: Permittees who conduct this monitoring through a regional collaborative shall be required to initiate no more than ten Stressor/Source Identification projects during the Permit term in total, and at least two must be toxicity follow-ups, unless monitoring results do not indicate the presence of toxicity. If conducted through a stormwater countywide program, the Santa Clara and Alameda

[40] USEPA. August 1999. *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants.* EPA/833B-99/002. Office of Wastewater Management, Washington, D.C.

[41] Select TIE methods from the following references after conferring with SWAMP personnel: For sediment: (1) Ho KT, Burgess R., Mount D, Norberg-King T, Hockett, RS. 2007. *Sediment toxicity identification evaluation: interstitial and whole methods for freshwater and marine sediments*. USEPA, Atlantic Ecology Division/Mid-Continental Ecology Division, Office of Research and Development, Narragansett, RI, or (2) Anderson, BS, Hunt, JW, Phillips, BM, Tjeerdema, RS. 2007. *Navigating the TMDL Process: Sediment Toxicity*. Final Report- 02-WSM-2. Water Environment Research Federation. 181 pp. For water column: (1) USEPA. 1991. *Methods for aquatic toxicity identification evaluations. Phase I Toxicity Characterization Procedures.* EPA 600/6-91/003. Office of Research and Development, Washington, DC., (2) USEPA. 1993. *Methods for aquatic toxicity identification evaluations. Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity.* EPA 600/R-92/080. Office of Research and Development, Washington, DC., or (3) USEPA. 1996. *Marine Toxicity Identification Evaluation (TIE), Phase I Guidance Document.* EPA/600/R-95/054. Office of Research and Development, Washington, DC.

Permittees each shall be required to initiate no more than five (two for toxicity); the Contra Costa and San Mateo Permittees each shall be required to initiate no more than three (one for toxicity); and the Fairfield-Suisun and Vallejo Permittees each shall be required to initiate no more than one Stressor/Source Identification project(s) during the Permit term.

(6) As long as Permittees have complied with the procedures set forth above, they do not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed to do so by the Water Board.

ii. BMP Effectiveness Investigation – Investigate the effectiveness of one BMP for stormwater treatment or hydrograph modification control. Permittees who do this project through a regional collaborative are required to initiate no more than one BMP Effectiveness Investigation during the Permit term. If conducted through a stormwater countywide program, the Santa Clara, Alameda, Contra Costa, and San Mateo Permittees shall be required to initiate one BMP Effectiveness Investigation each, and the Fairfield-Suisun and Vallejo Permittees shall be exempt from this requirement. The BMP(s) used to fulfill requirements of C.3.b.iii., C.11.e. and C.12.e. may be used to fulfill this requirement, provided the BMP Effectiveness Investigation includes the range of pollutants generally found in urban runoff. The BMP Effectiveness Investigation will not trigger a Stressor/Source Identification Project. Data from this Monitoring Project need not be SWAMP-comparable.

iii. Geomorphic Project – This monitoring is intended to answer the questions: How and where can our creeks be restored or protected to cost-effectively reduce the impacts of pollutants, increased flow rates, and increased flow durations of urban runoff?

Permittees shall select a waterbody/reach, preferably one that contains significant fish and wildlife resources, and conduct one of the following projects within each county, except that only one such project must be completed within the collective Fairfield-Suisun and Vallejo Permittees' jurisdictions:

(1) Gather geomorphic data to support the efforts of a local watershed partnership[42] to improve creek conditions; or

(2) Inventory locations for potential retrofit projects in which decentralized, landscape-based stormwater retention units can be installed; or

(3) Conduct a geomorphic study which will help in development of regional curves which help estimate equilibrium channel conditions for different-sized drainages. Select a waterbody/reach that is not undergoing changing land use. Collect and report the following data:

- Formally surveyed channel dimensions (profile), planform, and cross-sections. Cross-sections shall include the topmost floodplain terrace and

[42] A list of local watershed partnerships may be obtained from Water Board staff.

be marked by a permanent, protruding (not flush with ground) monument.

- Contributing drainage area.
- Best available information on bankfull discharges and width and depth of channel formed by bankfull discharges.
- Best available information on average annual rainfall in the study area.

Permittees shall complete the selected geomorphic project so that project results are reported in the Integrated Monitoring Report (see Provision C.8.g.v).

C.8.e. Pollutants of Concern and Long-Term Trends Monitoring

Pollutants of Concern (POC) monitoring is intended to assess inputs of Pollutants of Concern to the Bay from local tributaries and urban runoff, assess progress toward achieving wasteload allocations (WLAs) for TMDLs and help resolve uncertainties associated with loading estimates for these pollutants. In particular, there are four priority management information needs toward which POC monitoring must be directed: 1) identifying which Bay tributaries (including stormwater conveyances) contribute most to Bay impairment from pollutants of concern; 2) quantifying annual loads or concentrations of pollutants of concern from tributaries to the Bay; 3) quantifying the decadal-scale loading or concentration trends of pollutants of concern from small tributaries to the Bay; and 4) quantifying the projected impacts of management actions (including control measures) on tributaries and identifying where these management actions should be implemented to have the greatest beneficial impact.

Permittees shall implement the following POC monitoring components or pursue an alternative approach that addresses each of the aforementioned management information needs. An alternative approach may be pursued by Permittees provided that: either similar data types, data quality, data quantity are collected with an equivalent level of effort described; or an equivalent level of monitoring effort is employed to answer the management information needs.

Long-Term monitoring is intended to assess long-term trends in pollutant concentrations and toxicity in receiving waters and sediment, in order to evaluate if stormwater discharges are causing or contributing to toxic impacts on aquatic life. Permittees shall implement the following Long-Term monitoring components or, following approval by the Executive Officer, an equivalent monitoring program.

i. Pollutants of Concern Loads Monitoring Locations – Permittees shall conduct Pollutants of Concern monitoring at stations listed below. Permittees may install these stations in two phases providing at least half of the stations are monitored in the water year beginning October 2010, and all the stations are monitored in the water year beginning October 2012. Upon approval by the Executive Officer, Permittees may use alternate POC monitoring locations.

(1) Castro Valley Creek S3 at USGS gauging station in Castro Valley

(2) Guadalupe River

(3) Zone 4 Line A at Chabot Road in Hayward

(4) Rheem Creek at Giant Road in Richmond

(5) Walnut Creek at a downstream location

(6) Calabazas Creek at Lakeside Drive in Sunnyvale, at border with Santa Clara

(7) San Mateo Creek at downstream location

(8) Laurel Creek at Laurie Meadows park, off Casanova Drive in City of San Mateo.

ii. Long-Term Monitoring Locations – Permittees shall conduct Long-Term monitoring at stations listed below. After conferring with the Regional SWAMP program, and upon approval by the Executive Officer, Permittees may use alternate Long-Term monitoring locations.

Table 8.3. Long-Term Monitoring Locations

Stormwater Countywide Program	Waterbody	Suggested Location
Alameda Permittees	Alameda Creek OR	East of Alvarado Blvd*
	Lower San Leandro Creek	Empire Road*
Contra Costa Permittees	Kirker Creek OR	Floodway*
	Walnut Creek	Concord Avenue*
Santa Clara Permittees	Guadalupe River OR	USGS Gaging Station 11169025*
	Coyote Creek	Montague*
San Mateo Permittees	San Mateo Creek	Gateway Park*

* SWAMP is scheduled to collect sediment toxicity and sediment chemistry samples annually at these stations during the month of June.

iii. Parameters and Frequencies – Permittees shall conduct Pollutants of Concern sampling pursuant to Table 8.4, Categories 1 and 2. In Table 8.4, Category 1 pollutants are those for which the Water Board has active water quality attainment strategies (WQAS), such as TMDL or site-specific objective projects. Category 2 pollutants are those for which WQAS are in development. The lower monitoring frequency for Category 2 pollutants is sufficient to develop preliminary loading estimates for these pollutants.

Permittees shall conduct Long-Term monitoring pursuant to Table 8.4, Category 3. SWAMP has scheduled collection of Category 3 data at the Long-Term monitoring locations stated in C.8.e.ii. As stated in Provision C.8.a.iv., Permittees may use SWAMP data to fulfill Category 3 sampling requirements.

iv. Protocols – At a minimum, sampling and analysis protocols shall be consistent with 40 CFR 122.21(g)(7)(ii).

v. Methods – Methyl mercury samples shall be grab samples collected during storm events that produce rainfall of at least 0.10 inch, shall be frozen immediately upon collection, and shall be kept frozen during transport to the laboratory. All other Category 1 and 2 samples shall be wet weather flow-weighted composite samples, collected during storm events that produce rainfall of at least 0.10 inch. Sampled storms should be separated by 21 days of dry weather, but, at a minimum, sampled storms must have 72 hours of antecedent dry weather. Samples must include the first rise in the hydrograph. Category 3 monitoring data shall be SWAMP-comparable.

Table 8.4 Pollutants of Concern Loads & Long-Term Monitoring Elements

Category/Parameter	Sampling Years	Minimum Sampling Occurrence	Sampling Interval
Category 1 • Total and Dissolved Copper • Total Mercury[43] • Methyl Mercury • Total PCBs[44] • Suspended Sediments (SSC) • Total Organic Carbon • Toxicity – Water Column • Nitrate as N • Hardness	Annually	Average of 4 wet weather events per year For methyl mercury only: average of 2 wet & 2 dry weather events per year	Flow-weighted composite For methyl mercury only: grab samples collected during the first rise in the hydrograph of a storm event.
Category 2 • Total and Dissolved Selenium • Total PBDEs (Polybrominated Diphenyl Ethers) • Total PAHs (Poly-Aromatic Hydrocarbons) • Chlordane • DDTs (Dichloro-Diphenyl-Trichloroethane) • Dieldrin • Nitrate as N • Pyrethroids - bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin, and tralomethrin • Carboryl and fipronil • Total and Dissolved Phosphorus	Oct. 2010 - 2011 water year and Oct. 2012 - 2013 water year	2 times per year	Flow-weighted composite
Category 3 Toxicity – Bedded Sediment, fine-grained[45]	Biennially, Coordinate	Once per year, during April-June,	Grab sample

[43] The monitoring type and frequency shown for mercury is not sufficient to determine progress toward achieving TMDL load allocations. Progress toward achieving load allocations will be accomplished by assessing loads avoided resulting from treatment, source control, and pollution prevention actions.

[44] The monitoring type and frequency shown for PCBs is not sufficient to determine progress toward achieving TMDL load allocations. Progress toward achieving load allocations will be accomplished by assessing loads avoided resulting from treatment, source control, and pollution prevention actions.

Category/Parameter	Sampling Years	Minimum Sampling Occurrence	Sampling Interval
Pollutants – Bedded Sediment, fine-grained	with SWAMP	coordinate with SWAMP	

vi. Sediment Delivery Estimate/Budget – The objective of this monitoring is to develop a strong estimate of the amount of sediment entering the Bay from local tributaries and urban drainages. By July 1, 2011, Permittees shall develop a design for a robust sediment delivery estimate/sediment budget in local tributaries and urban drainages. Permittees shall implement the study by July 1, 2012.

vii. Emerging Pollutants – Permittees shall develop a work plan and schedule for initial loading estimates and source analyses for emerging pollutants: endocrine-disrupting compounds, PFOS/PFAS (Perfluorooctane Sulfonates (PFOS), Perfluoroalkyl sulfonates (PFAS); these perfluorocompounds are related to Teflon products), and NP/NPEs (nonylphenols/nonylphenol esters —estrogen-like compounds). This work plan, which is to be implemented in the next Permit term, shall be submitted with the Integrated Monitoring Report (see Provision C.8.g.).

C.8.f. Citizen Monitoring and Participation

i. Permittees shall encourage Citizen Monitoring.

ii. In developing Monitoring Projects and evaluating Status & Trends data, Permittees shall make reasonable efforts to seek out citizen and stakeholder information and comment regarding waterbody function and quality.

iii. Permittees shall demonstrate annually that they have encouraged citizen and stakeholder observations and reporting of waterbody conditions. Permittees shall report on these outreach efforts in the annual Urban Creeks Monitoring Report.

C.8.g. Reporting

i. Water Quality Standard Exceedence – When data collected pursuant to C.8.a.-C.8.f. indicate that stormwater runoff or dry weather discharges are or may be causing or contributing to exceedance(s) of applicable water quality standards, including narrative standards, a discussion of possible pollutant sources shall be included in the Urban Creeks Monitoring Report. When data collected pursuant to C.8.a.-C.8.f. indicate that discharges are causing or contributing to an exceedance of an applicable water quality standard, Permittees shall notify the Water Board within no more than 30 days of such a determination and submit a follow-up report in accordance with Provision C.1 requirements. The preceding reporting requirements shall not apply to

[45] If Ceriodaphnia, H*yalella azteca,* or Pimephales survival or Selenastrum growth is < 50% of control results, repeat wet weather sample. If 2nd sample yields < 50% of control results, proceed to C.8.d.i.

continuing or recurring exceedances of water quality standards previously reported to the Water Board or to exceedances of pollutants that are to be addressed pursuant to Provisions C.8 through C.14 of this Order in accordance with Provision C.1.

ii. Status Monitoring Electronic Reporting – Permittees shall submit an Electronic Status Monitoring Data Report no later than January 15 of each year, reporting on all data collected during the foregoing October 1–September 30 period. Electronic Status Monitoring Data Reports shall be in a format compatible with the SWAMP database.[46] Water Quality Objective exceedances shall be highlighted in the Report.

iii. Urban Creeks Monitoring Report – Permittees shall submit a comprehensive Urban Creeks Monitoring Report no later than March 15 of each year, reporting on all data collected during the foregoing October 1–September 30 period, with the initial report due March 15, 2012, unless the Permittees choose to monitor through a regional collaborative, in which case the due date is March 15, 2013. Each Urban Creeks Monitoring Report shall contain summaries of Status, Long-Term, Monitoring Projects, and Pollutants of Concern Monitoring including, as appropriate, the following:

(1) Maps and descriptions of all monitoring locations;

(2) Data tables and graphical data summaries; Constituents that exceed applicable water quality standards shall be highlighted;

(3) For all data, a statement of the data quality;

(4) An analysis of the data, which shall include the following:

- Calculations of biological metrics and physical habitat endpoints.
- Comparison of biological metrics to:
  - Each other
  - Any applicable, available reference site(s)
  - Any applicable, available index of biotic integrity
  - Physical habitat endpoints.
- Identification and analysis of any long-term trends in stormwater or receiving water quality.

(5) A discussion of the data for each monitoring program component, which shall:

- Discuss monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Basin Plan, the Ocean Plan, or the California Toxics Rule or other applicable water quality control plans.

[46] See http://mpsl.mlml.calstate.edu/swdataformats.htm. Permittees shall maintain an information management system that will support electronic transfer of data to the Regional Data Center of the ***California Environmental Data Exchange Network*** **(*CEDEN*)**, located within the San Francisco Estuary Institute.

- Where appropriate, develop hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness.
- Identify and prioritize water quality problems.
- Identify potential sources of water quality problems.
- Describe follow-up actions.
- Evaluate the effectiveness of existing control measures.
- Identify management actions needed to address water quality problems.

iv. Monitoring Project Reports – Permittees shall report on the status of each ongoing Monitoring Project in each annual Urban Creeks Monitoring Report. In addition, Permittees shall submit stand-alone summary reports within six months of completing BMP Effectiveness and Geomorphic Projects; these reports shall include: a description of the project; map(s) of project locations; data tables and summaries; and discussion of results.

v. Integrated Monitoring Report – No later than March 15, 2014, Permittees shall prepare and submit an Integrated Monitoring Report through the regional collaborative monitoring effort on behalf of all participating Permittees, or on a countywide basis on behalf of participating Permittees, so that all monitoring conducted during the Permit term is reported.[47] This report shall be in lieu of the Annual Urban Creeks Monitoring Report due on March 15, 2014.

The report shall include, but not be limited to, a comprehensive analysis of all data collected pursuant to Provision C.8., and may include other pertinent studies. For Pollutants of Concern, the report shall include methods, data, calculations, load estimates, and source estimates for each Pollutant of Concern Monitoring parameter. The report shall include a budget summary for each monitoring requirement and recommendations for future monitoring. This report will be part of the next Report of Waste Discharge for the reissuance of this Permit.

vi. Standard Report Content –All monitoring reports shall include the following:

- The purpose of the monitoring and briefly describe the study design rationale.
- Quality Assurance/Quality Control summaries for sample collection and analytical methods, including a discussion of any limitations of the data.
- Brief descriptions of sampling protocols and analytical methods.
- Sample location description, including waterbody name and segment and latitude and longitude coordinates.
- Sample ID, collection date (and time if relevant), media (e.g., water, filtered water, bed sediment, tissue).
- Concentrations detected, measurement units, and detection limits.

[47] Permittees who do not participate in the Regional Monitoring Group or in a stormwater countywide program must submit an individual Integrated Receiving Water Impacts Report.

- Assessment, analysis, and interpretation of the data for each monitoring program component.
- Pollutant load and concentration at each mass emissions station.
- A listing of volunteer and other non-Permittee entities whose data are included in the report.
- Assessment of compliance with applicable water quality standards.
- A signed certification statement.

vii. Data Accessibility – Permittees shall make electronic reports available through a regional data center, and optionally through their web sites. Permittees shall notify stakeholders and members of the general public about the availability of electronic and paper monitoring reports through notices distributed through appropriate means, such as an electronic mailing list.

C.8.h. Monitoring Protocols and Data Quality

Where applicable, monitoring data must be SWAMP comparable. Minimum data quality shall be consistent with the latest version of the SWAMP Quality Assurance Project Plan (QAPP)[48] for applicable parameters, including data quality objectives, field and laboratory blanks, field duplicates, laboratory spikes, and clean techniques, using the most recent Standard Operating Procedures. A Regional Monitoring Collaborative may adapt the SWAMP QAPP for use in conducting monitoring in the San Francisco Bay Region, and may use such QAPP if acceptable to the Executive Officer.

[48] The current SWAMP QAPP at the time of Permit issuance is dated September 1, 2008, and is available at http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/qapp/swamp_qapp_master090108a.pdf.

C.9. Pesticides Toxicity Control

To prevent the impairment of urban streams by pesticide-related toxicity, the Permittees shall implement a pesticide toxicity control program that addresses their own and others' use of pesticides within their jurisdictions that pose a threat to water quality and that have the potential to enter the municipal conveyance system. This provision implements requirements of the TMDL for Diazinon and Pesticide related Toxicity for Urban Creeks in the region. The TMDL includes urban runoff allocations for Diazinon of 100 ng/l and for pesticide related toxicity of 1.0 Acute Toxicity Units (TUa) and 1.0 Chronic Toxicity Units (TUc) to be met in urban creek waters. However, urban runoff management agencies (i.e., the Permittees) are not solely responsible for attaining the allocations because their authority to regulate pesticide use is constrained by federal and State law. Accordingly, the Permittees' requirements for addressing the allocations are set forth in the TMDL implementation plan and are included in this provision.

Pesticides of concern include: organophosphorous pesticides (chlorpyrifos, diazinon, and malathion); pyrethroids (bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin, and tralomethrin); carbamates (e.g., carbaryl); and fipronil. The Permittees may coordinate with BASMAA, the Urban Pesticide Pollution Prevention Project, the Urban Pesticide Committee, the Bay-Friendly Landscaping and Gardening Coalition, and other agencies and organizations in carrying out these activities.

C.9.a. Adopt an Integrated Pest Management (IPM) Policy or Ordinance

i. Task Description – In their IPM policies or ordinances, the Permittees shall include provisions to minimize reliance on pesticides that threaten water quality and to require the use of IPM in municipal operations and on municipal property.

ii. Implementation Level – If not already in place, the Permittees shall adopt IPM policies or ordinances no later than July 1, 2010.

iii. Reporting – The Permittees shall submit a copy of their IPM ordinance(s) or policy(s) in their 2010 Annual Report.

C.9.b. Implement IPM Policy or Ordinance

i. Task Description – The Permittees shall establish written standard operating procedures for pesticide use that ensure implementation of the IPM policy or ordinance and require municipal employees and contractors to adhere to the IPM standard operating procedures.

ii. Reporting

(1) In their Annual Reports, the Permittees shall report on IPM implementation by showing trends in quantities and types of pesticide used, and suggest reasons for increases in use of pesticides that threaten water quality, specifically organophosphorous pesticides, pyrethroids, carbaryl, and fipronil.

(2) The Permittees shall maintain pesticide application standard operating procedures and submit them upon request.

C.9.c. Train Municipal Employees

i. Task Description – The Permittees shall ensure that all municipal employees who, within the scope of their duties, apply or use pesticides that threaten water quality are trained in IPM practices and the Permittee's IPM policy. This training may also include other training opportunities such as Bay-Friendly Landscape Maintenance Training & Qualification Program and EcoWise Certified.

ii. Reporting

(1) In their Annual Reports, the Permittees shall report the percentage of municipal employees who apply pesticides who have received training in IPM policy and IPM standard operating procedures within the last three years.

(2) The Permittees shall submit training materials (e.g., course outline, date, attendees) upon request.

C.9.d. Require Contractors to Implement IPM

i. Task Description – The Permittees shall hire IPM-certified contractors or include contract specifications requiring contractors to implement IPM no later than July 1, 2010.

ii. Reporting – In their Annual Reports, the Permittees shall submit documentation to confirm compliance, such as the Permittee's standard contract specification or copy of contractors' certification(s).

C.9.e. Track and Participate in Relevant Regulatory Processes (may be done jointly with other Permittees, such as through CASQA or BASMAA and/or the Urban Pesticide Pollution Prevention Project)

i. Task Description

(1) The Permittees shall track USEPA pesticide evaluation and registration activities as they relate to surface water quality, and when necessary, encourage USEPA to coordinate implementation of the Federal Insecticide, Fungicide, and Rodenticide Act and the CWA and to accommodate water quality concerns within its pesticide registration process;

(2) The Permittees shall track California Department of Pesticide Regulation (DPR) pesticide evaluation activities as they relate to surface water quality, and when necessary, encourage DPR to coordinate implementation of the California Food and Agriculture Code with the California Water Code and to accommodate water quality concerns within its pesticide evaluation process;

(3) The Permittees shall assemble and submit information (such as monitoring data) as needed to assist DPR and County Agricultural Commissioners in ensuring that pesticide applications comply with water quality standards; and

(4) As appropriate, the Permittees shall submit comment letters on USEPA and DPR re-registration, re-evaluation, and other actions relating to pesticides of concern for water quality.

ii. Reporting – In their Annual Reports, the Permittees who participate in a regional effort to comply with C.9.e. may reference a regional report that summarizes regional participation efforts, information submitted, and how regulatory actions were affected. All other Permittees shall list their specific participation efforts, information submitted, and how regulatory actions were affected.

C.9.f. Interface with County Agricultural Commissioners

i. Task Description – The Permittees shall maintain regular communications with county agricultural commissioners (or other appropriate State and/or local agencies) to (1) get input and assistance on urban pest management practices and use of pesticides, (2) inform them of water quality issues related to pesticides, and (3) report violations of pesticide regulations (e.g., illegal handling) associated with stormwater management.

ii. Reporting – In their Annual Reports, the Permittees shall summarize improper pesticide usage reported to county agricultural commissioners and report follow-up actions to correct violations.

C.9.g. Evaluate Implementation of Source Control Actions Relating to Pesticides

i. Task Description – The Permittees shall evaluate the effectiveness of the control measures implemented, evaluate attainment of pesticide concentration and toxicity targets for water and sediment from monitoring data (Provision C.8.), and identify improvements to existing control measures and/or additional control measures, if needed, to attain targets with an implementation time schedule.

ii. Reporting – In their 2013 Annual Reports, the Permittees shall report the evaluation results, and if needed, submit a plan to implement improved and/or new control measures.

C.9.h. Public Outreach (may be done jointly with other Permittees, such as through CASQA or BASMAA and/or the Urban Pesticide Pollution Prevention Project or the Bay-Friendly Landscaping and Gardening Coalition).

i. Point of Purchase Outreach: The Permittees shall:

(1) Conduct outreach to consumers at the point of purchase;

(2) Provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control; and

(3) Participate in and provide resources for the "Our Water, Our World" program or a functionally equivalent pesticide use reduction outreach program.

ii. Reporting – In their Annual Reports, the Permittees who participate in a regional effort to comply with C.9.h.i. may reference a report that summarizes these actions. All other Permittees shall summarize activities completed and document any measurable awareness and behavior changes resulting from outreach.

iii. Pest Control Contracting Outreach: The Permittees shall conduct outreach to residents who use or contract for structural or landscape pest control and shall:

(1) Provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control, including IPM;

(2) Incorporate IPM messages into general outreach;

(3) Provide information to residents about "Our Water, Our World" or functionally equivalent program;

(4) Provide information to residents about EcoWise Certified IPM certification in Structural Pest Management, or functionally equivalent certification program; and

(5) Coordinate with household hazardous-waste programs to facilitate appropriate pesticide waste disposal, conduct education and outreach, and promote appropriate disposal.

iv. Reporting – In their 2013 Annual Reports, the Permittees who participate in a regional effort to comply with C.9.h.iii. may reference a report that summarizes these actions. All other Permittees shall document the effectiveness of their actions in their 2013 Annual Reports. This documentation may include percentages of residents hiring certified IPM providers and the change in this percentage.

v. Outreach to Pest Control Operators: The Permittees shall conduct outreach to pest control operators (PCOs) and landscapers; Permittees are encouraged to work with DPR, county agricultural commissioners, UC-IPM, BASMAA, the Urban Pesticide Committee, the EcoWise Certified Program (or functionally equivalent certification program), the Bio-integral Resource Center and others to promote IPM to PCOs and landscapers.

vi. Reporting – In each Annual Report, the Permittees who participate in a regional effort to comply with C.9.h.v. may reference a report that summarizes these actions. All other Permittees shall summarize how they reached PCOs and landscapers and reduced pesticide use.

C.10. Trash Load Reduction

The Permittees shall demonstrate compliance with Discharge Prohibition A.2 and trash-related Receiving Water Limitations through the timely implementation of control measures and other actions to reduce trash loads from municipal separate storm sewer systems (MS4s) by 40% by 2014, 70% by 2017, and 100% by 2022 as further specified below.

During this permit term, the Permittees shall develop and implement a Short-Term Trash Load Reduction Plan. This includes implementation of a mandatory minimum level of trash capture; cleanup and abatement progress on a mandatory minimum number of Trash Hot Spots; and implementation of other control measures and best management practices, such as trash reduction ordinances, to prevent or remove trash loads from MS4s to attain a 40% reduction in trash loads by July 1, 2014. The Permittees shall also develop and begin implementation of a Long-Term Trash Load Reduction Plan to attain a 70% reduction in trash loads from their MS4s by 2017 and 100% by 2022. Flood management agencies, which are non-population-based Permittees that do not have jurisdiction over urban watershed land, are not subject to these trash reduction requirements except for minimum full trash capture and Trash Hot Spot requirements, as specified in subsections C.10.a.iii and C.10.b below.

C.10.a. Short-Term Trash Load Reduction

i. Short-Term Trash Loading Reduction Plan – Each Permittee shall submit a Short-Term Trash Load Reduction Plan, including an implementation schedule, to the Water Board by February 1, 2012. The Plan shall describe control measures and best management practices, including any trash reduction ordinances, that are currently being implemented and the current level of implementation and additional control measures and best management practices that will be implemented, and/or an increased level of implementation designed to attain a 40% trash load reduction from its MS4 by July 1, 2014.

The Short-Term Trash Load Reduction Plan shall account for required mandatory minimum Full Trash Capture devices called for in Provision C.10.a.iii and Trash Hot Spot Cleanup called for in Provision C.10.b.

ii. Baseline Trash Load and Trash Load Reduction Tracking Method – Each Permittee, working collaboratively or individually, shall determine the baseline trash load from its MS4 to establish the basis for trash load reductions and submit the determined load level to the Water Board by February 1, 2012, along with documentation of methodology used to determine the load level. The submittal shall also include a description of the trash load reduction tracking method that will be used to account for trash load reduction actions and to demonstrate progress and attainment of trash load reduction levels. The submittal shall account for the drainage areas of a Permittee's jurisdiction that are associated with the baseline trash load from its MS4, and the baseline trash load level per unit area by land use type and drainage area characteristics used to derive the total baseline trash load level for each Permittee.

In the determination of applicable areas that generate trash loads for inclusion in the Baseline Trash Load, the Permittees may propose areas for exclusion, with

supporting documentation, which meet Discharge Prohibition A.2 and trash-related Receiving Water Limitations. Documentation demonstrating no material trash presence or adverse impact may include data from the maintenance of existing trash capture devices, data from trash flux measurements in the MS4 and the water column of streams during wet weather, Trash Hot Spot assessments, and litter audits of street curb and gutter areas in high pedestrian traffic and high commercial activity areas.

If proposed areas for exclusion are commercial, industrial, or high density residential areas, or adjacent to schools or event venues, the Permittee shall collect and submit by February 1, 2013, an additional year of documentation to further support the basis for the exclusion. If the data continue to support the exclusion determination, further trash reduction actions are not required in these areas, unless the Water Board notifies the Permittee otherwise.

Each Permittee shall submit a progress report by February 1, 2011, that indicates whether it is determining its baseline trash load and trash load reduction method individually or collaboratively with other Permittees and a summary of the approach being used. The report shall also include the types and examples of documentation that will be used to propose exclusion areas, and the land use characteristics and estimated area of potentially excluded areas.

iii. Minimum Full Trash Capture – Except as excluded below, population-based Permittees shall install and maintain a mandatory minimum number of full trash capture devices by July 1, 2014, to treat runoff from an area equivalent to 30% of Retail/Wholesale Land[49] that drains to MS4s within their jurisdictions (see Table 10.1 in Attachment J). If the sum of the areas that generate trash loads determined pursuant to C.10.a.ii above is a smaller acreage than the required trash capture acreage, a population-based Permittee may reduce its minimum full trash capture requirement to the smaller acreage. A population-based Permittee with a population less than 12,000 and retail/wholesale land less than 40 acres, or a population less than 2000, is exempt from this trash capture requirement. The minimum number of trash capture devices required to be installed and maintained by non-population-based Permittees is included in Attachment J.

All installed devices that meet the following full trash capture definition may be counted toward this requirement regardless of date of installation. A full capture system or device is any single device or series of devices that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate Q resulting from a one-year, one-hour, storm in the sub-drainage area.

[49] [http://quake.abag.ca.gov/mitigation/pickdbh2.html] and Association of Bay Area Governments, 2005 ABAG Land Use Existing Land Use in 2005: Report and Data for Bay Area Counties

C.10.b. Trash Hot Spot Selection and Cleanup

Trash Hot Spots in receiving waters shall be cleaned annually to achieve the multiple benefits of beginning abatement of these impacts as mitigation and to learn more about the sources and patterns of trash loading.

i. Hot Spot Cleanup and Definition – The Permittees shall cleanup selected Trash Hot Spots to a level of "no visual impact" at least one time per year for the term of the permit. Trash Hot Spots shall be at least 100 yards of creek length or 200 yards of shoreline length.

ii. Hot Spot Selection – Population-based Permittees shall identify high trash-impacted locations on State waters totaling at least one Trash Hot Spot per 30,000 population, or one per 100 acres of Retail/Wholesale Commercial Land Area, within their jurisdictions based on Association of Bay Area Governments (ABAG) 2005 data1, whichever is greater. If the hot spot number by one of the two determination methods is more than twice that determined by the other method, double the smaller hot spot number shall be used. Otherwise, the larger hot spot number determined by the two methods shall be the Trash Hot Spot assignment for a population-based Permittee. Each population-based Permittee shall select at least one Trash Hot Spot. The Permittees shall each submit selected Trash Hot Spots to the Water Board by July 1, 2010. The list should include photo documentation (one photo per 50 feet) and initial assessment results for the proposed hot spots. The minimum number of Trash Hot Spots per Permittee is included in Attachment J for population and non-population-based Permittees. The Permittees shall proceed with cleanup of selected Trash Hot Spots unless informed otherwise by the Water Board.

iii. Hot Spot Assessments – The Permittees shall quantify the volume of material removed from each Trash Hot Spot cleanup, and identify the dominant types of trash (e.g., glass, plastics, paper) removed and their sources to the extent possible. Documentation shall include the trash condition before and after clean up of the entire hot spot using photo documentation with a minimum of one photo per 50 feet of hot spot length. Trash Hot Spots may also be assessed using either the Rapid Trash Assessment (RTA v.8) or the SCVURPPP Urban RTA variation of that method.

C.10.c. Long-Term Trash Load Reduction

Each Permittee shall submit a Long-Term Trash Load Reduction Plan, including an implementation schedule, to the Water Board by February 1, 2014. The Plan shall describe control measures and best management practices, including any trash reduction ordinances, that are being implemented and the level of implementation and additional control measures and best management practices that will be implemented, and/or an increased level of implementation designed to attain a 70% trash load reduction from its MS4 by July 1, 2017, and 100% by July 1, 2022.

C.10.d. Reporting

i. In each Annual Report, each Permittee shall provide a summary of its trash load reduction actions (control measures and best management practices) including the types of actions and levels of implementation, the total trash loads and dominant types of trash removed by its actions, and the total trash loads and dominant types of trash for each type of action. The latter shall include each Trash Hot Spot selected pursuant to C.10.b. Beginning with the 2012 Annual Report, each Permittee shall also report its percent annual trash load reduction relative to its Baseline Trash Load.

ii. The Permittees shall retain records for review providing supporting documentation of trash load reduction actions and the volume and dominant type of trash removed from full trash capture devices, from each Trash Hot Spot cleanup, and from additional control measures or best management practices implemented. Data may be combined for specific types of full trash capture devices deployed in the same drainage area. These records shall have the specificity required for the trash load reduction tracking method established pursuant to subsection C.10.a.iii.

C.11. Mercury Controls

The Permittees shall implement the following control programs for mercury. The Permittees shall perform the control measures and provide reporting on those control measures according to the provisions below. The purpose of this provision is to implement the urban runoff requirements of the San Francisco Bay mercury TMDL and reduce mercury loads to make substantial progress toward achieving the urban runoff mercury load allocation established for the TMDL. The aggregate, regionwide, urban runoff wasteload load allocation is 82 kg/yr. This allocation should be achieved by February 2028 and, as a way to measure progress, an interim loading milestone of 120 kg/yr, halfway between the current load and the allocation, should be achieved by February 2018. If the interim loading milestone is not achieved, the Permittees shall demonstrate reasonable and measurable progress toward achieving the milestone. The Permittees may comply with any requirement of this provision through a collaborative effort.

C.11.a. Mercury Collection and Recycling Implemented throughout the Region

i. Task Description – The Permittees shall promote, facilitate, and/or participate in collection and recycling of mercury containing devices and equipment at the consumer level (e.g., thermometers, thermostats, switches, bulbs).

ii. Reporting – The Permittees shall report on these efforts in their Annual Report, including an estimate of the mass of mercury collected.

C.11.b. Monitor Methylmercury

i. Task Description – The Permittees shall monitor methymercury in runoff discharges. The objective of the monitoring is to investigate a representative set of drainages and obtain seasonal information and to assess the magnitude and spatial/temporal patterns of methylmercury concentrations.

ii. Implementation Level – The Permittees shall analyze aqueous grab samples already being collected for total mercury analysis for methylmercury as specified in Provision C.8.f.

iii. Reporting – The Permittees shall report monitoring results annually beginning with their 2010 Annual Report.

C.11.c. Pilot Projects To Investigate and Abate Mercury Sources in Drainages, Including Public Rights-Of-Way, and Stormwater Conveyances with Accumulated Sediment that Contains Elevated Mercury Concentrations.

i. Task Description – The Permittees shall investigate and abate mercury sources in or to their storm drain systems in conjunction with the Water Board and other appropriate regulatory agencies with investigation and cleanup authorities. The purpose of this task is to implement and evaluate the benefit of a suite of abatement measures at five pilot project locations. The Permittees shall document the knowledge and experience gained through pilot implementation,

and this documentation will provide a basis for determining the scope of abatement implementation in subsequent permit terms. The Permittees shall also quantify and report the amount of mercury loads abated resulting from implementation of these measures.

ii. Implementation Level – Reducing loads of PCBs is the main pilot location selection factor for this Provision, and reducing loads of mercury is a secondary criterion. Accordingly, for PCB pilot project locations selected as part of Provision C.12.c, the Permittees shall conduct reconnaissance in the pilot project drainage areas. The Permittees shall test sediments in storm drains and conveyances to characterize the extent and magnitude of mercury concentrations. They shall evaluate monitoring data and determine if a mercury sediment abatement program would reduce mercury loading significantly. If so determined, the Permittees shall cause abatement activities to be conducted at those sites under Permittee jurisdiction with identified remedial activities. When contamination is located on private property, a Permittee must either exercise direct authority to require cleanup or notify and request other appropriate authorities to exercise their cleanup authority.

iii. Reporting – Report on mercury-related aspects of work and loads abated as part of reporting requirements for Provision C.12.c.

C.11.d. Pilot Projects to Evaluate and Enhance Municipal Sediment Removal and Management Practices

i. Task Description – The Permittees shall jointly evaluate ways to enhance mercury load reduction benefits of operation and maintenance actives that remove or manage sediment. The purpose of this task is to implement these management practices at the pilot scale in five drainages during this permit term. The knowledge and experience gained through pilot implementation will be used to determine the implementation scope of enhanced sediment removal and management practices in subsequent permit terms. The Permittees shall document the knowledge and experience gained through pilot implementation, and this documentation will provide a basis for determining the implementation scope of enhanced sediment removal management practices in subsequent permit terms. The Permittees shall also quantify and report the amount of mercury loads removed or avoided resulting from implementation of these measures.

ii. Implementation Level – In all pilot program drainages selected as part of Provision C.12.c, the Permittees shall jointly evaluate ways to enhance existing sediment removal and management practices such as municipal street sweeping, curb clearing parking restrictions, inlet cleaning, catch basin cleaning, stream and stormwater conveyance system maintenance, and pump station cleaning via increased effort and/or retrofits for the control of mercury. This evaluation shall also include consideration of street flushing and capture, collection, or routing to the sanitary sewer (in coordination and consultation with local sanitary sewer agencies) as a potential enhanced management practice in coordination and consultation with local sanitary sewer agencies.

Beginning July 1, 2011, the Permittees shall implement pilot studies for the most potentially effective measures(s) based on the evaluation of Provision C.11.d.ii in all drainages for which PCB pilot projects are being conducted.

iii. Reporting

(1) The Permittees shall present a progress report on the results of the evaluation in their 2010 Annual Report and the final evaluation results in their 2011 Annual Report.

(2) In their March 15, 2014 Integrated Monitoring Report, the Permittees shall report the effectiveness of enhanced practices pilot implementation, report estimates of loads reduced, and present a plan and schedule for possible expanded implementation for subsequent permit terms.

C.11.e. Conduct Pilot Projects to Evaluate On-Site Stormwater Treatment via Retrofit

i. Task Description – The Permittees shall evaluate and quantify the removal of mercury by on-site treatment systems via retrofit of such systems into existing storm drain systems. The purpose of this task is to implement on-site treatment projects at the pilot scale in ten locations during this permit term. The Permittees shall document the knowledge and experience gained through pilot implementation, and this documentation will provide a basis for determining the implementation scope of on-site treatment retrofits in subsequent permit terms. The Permittees shall also quantify and report the amount of mercury loads removed or avoided resulting from implementation of these measures.

ii. Implementation Level – The Permittees, working collaboratively, shall identify at least ten locations throughout the Permittees' jurisdictions that present opportunities to install and evaluate[50] on-site treatment systems (e.g., detention basins, bioretention units, sand filters, infiltration basins, treatment wetlands) and shall assess best treatment options for those locations. Every county (San Mateo, Contra Costa, Alameda, Santa Clara, and Solano) should have at least one location. This effort shall identify potential locations draining a variety of land uses; evaluate technical feasibility; and discuss economical feasibility. The pilot locations may be the same as those chosen for Provision C.12.e, but consideration should be given to areas of elevated mercury concentrations.

On the basis of the Provision C.11.e.ii report, the Permittees shall select sites to perform pilot studies and shall conduct pilot studies in ten selected locations. Pilot studies shall span treatment types and drainage characteristics.

iii. Reporting –

(1) In their 2011 Annual Report, the Permittees shall report on candidate locations and types of treatment retrofit for each location. The report shall include assessment of at least ten locations.

[50] Permittees may evaluate a maximum of two pre-existing treatment systems of the ten total required systems to be evaluated provided that these existing treatment systems are applicable to the intent of this provision..

(2) In their March 15, 2014 Integrated Monitoring Report, the Permittees shall report status, results, mercury removal effectiveness, and lessons learned from the ten pilot studies and their plan for implementing this type of treatment on an expanded basis throughout their jurisdictions during the next permit term.

C.11.f. Diversion of Dry Weather and First Flush Flows to Publicly Owned Treatment Works (POTWs)

i. Task Description – The Permittees shall evaluate the reduced loads of mercury from diversion of dry weather and first flush stormwater flows to sanitary sewers. The Permittees shall document the knowledge and experience gained through pilot implementation, and this documentation will provide a basis for determining the implementation scope of urban runoff diversion projects in subsequent permit terms. The Permittees shall also quantify and report the amount of mercury loads removed or avoided resulting from implementation of these measures.

ii. Implementation Level – The Permittees shall implement pilot projects to divert dry weather and first flush flows to POTWs to address these flows as a source of PCBs and mercury to receiving waters. The Permittees are strongly encouraged to make use of stormwater pump stations in this effort because pump station characterization work performed pursuant to Provisions C.2 and C.10, addressing dissolved oxygen depletion and trash impacts, may be efficiently leveraged for the initial phase of these diversion pilot projects. The objectives of this Provision are to: implement five pilot projects for urban runoff diversion from stormwater pump stations to POTWs; evaluate the reduced loads of mercury and PCBs resulting from each diversion; and gather information to guide the selection of additional diversion projects in future permits. Collectively, the Permittees shall select five stormwater pump stations and five alternates by evaluating drainage characteristics and the feasibility of diverting flows to the sanitary sewer.

(1) The Permittees should work with local POTWs on a watershed, county, or regional level to evaluate feasibility and to establish cost sharing agreements. The feasibility evaluation shall include, but not be limited to, costs, benefits, and impacts on the stormwater and wastewater agencies and the receiving waters relevant to the diversion and treatment of the dry weather and first flush flows.

(2) From this feasibility evaluation, the Permittees shall select five pump stations and five alternates for pilot diversion studies. At least one urban runoff diversion pilot project shall be implemented in each of the five counties (San Mateo, Contra Costa, Alameda, Santa Clara, and Solano). The pilot and alternate locations should be located in industrially-dominated catchments where elevated PCB concentrations are documented.

(3) The Permittees shall implement flow diversion to the sanitary sewer at five pilot pump stations. As part of the pilot studies, the Permittees shall monitor, measure, and report mercury load reduction.

iii. Reporting

(1) The Permittees shall summarize the results of the feasibility evaluation in their 2010 Annual Report, including:

- Selection criteria leading to the identification of the five candidate and five alternate pump stations for pilot studies.
- Time schedules for conducting the pilot studies.
- A proposed method for distributing mercury load reductions to participating wastewater and stormwater agencies.

(2) The Permittees shall report annually on the status of the pilot studies in each subsequent Annual Report.

(3) The Permittees shall include in their March 15, 2014 Integrated Monitoring Report:

- Evaluation of pilot program effectiveness.
- Mercury loads reduced.
- Updated feasibility evaluation procedures to guide future diversion project selection.

C.11.g. Monitor Stormwater Mercury Pollutant Loads and Loads Reduced

i. Task Description – The Permittees shall develop and implement a monitoring program to quantify mercury loads and loads reduced through source control, treatment and other management measures as required in Provision C.8.f.

ii. Implementation Level – The Permittees shall demonstrate progress toward (a) the interim loading milestones, or (b) attainment of the program area allocations, by using the following methods:

(1) Quantify through estimates the annual average mercury load reduced by implementing pollution prevention, source control and treatment control efforts required by the provisions of this permit or other relevant efforts; or

(2) Quantify the mercury load as a rolling five-year annual average using data on flow and water column mercury concentrations; or

(3) Quantitatively demonstrate that the mercury concentration of suspended sediment that best represents sediment discharged with urban runoff is below the target of 0.2 mg mercury/kg dry weight.

iii. Reporting

(1) The Permittees shall report in their 2010 Annual Report methods used to assess progress toward meeting WLA goals and a full description of the

measurement and estimation methodology and rationale for the approaches.

(2) The Permittees shall report in their March 15, 2014 Integrated Monitoring Report results of chosen monitoring/measurement approach concerning loads assessment and estimation of loads reduced.

C.11.h. Fate and Transport Study of Mercury in Urban Runoff

i. Task Description – The Permittees shall conduct or cause to be conducted studies aimed at better understanding the fate, transport, and biological uptake of mercury discharged in urban runoff to San Francisco Bay and tidal areas.

ii. Implementation Level – The specific information needs include understanding the in-Bay transport of mercury discharged in urban runoff, the influence of urban runoff on the patterns of food web mercury accumulation, and the identification of drainages where urban runoff mercury is particularly important in food web accumulation.

iii. Reporting – The Permittees shall submit in their 2010 Annual Report a work plan describing the specific manner in which these information needs will be accomplished and describing the studies to be performed with a schedule. The Permittees shall report on status of these studies in their 2010, 2011, and 2012 Annual Reports. In the March 15, 2014 Integrated Monitoring Report, the Permittees shall report the findings and results of the studies completed, planned, or in progress as well as implications of studies on potential control measures to be investigated, piloted or implemented in future permit cycles.

C.11.i. Development of a Risk Reduction Program Implemented Throughout the Region.

i. Task Description – The Permittees shall develop and implement or participate in effective programs to reduce mercury-related risks to humans and quantify the resulting risk reductions from these activities.

ii. Implementation Level – The risk reduction activities shall include investigating ways to address public health impacts of mercury in San Francisco Bay/Delta fish, including activities that reduce actual and potential exposure of health impacts to those people and communities most likely to be affected by mercury in San Francisco Bay-caught fish, such as subsistence fishers and their families. Such strategies should include public participation in developing effective programs in order to ensure their effectiveness. The Permittees may include studies needed to establish effective exposure reduction activities and risk communication messages as part of their planning. The risk reduction activities may be performed by a third party if the Permittees wish to provide funding for this purpose. This requirement may be satisfied by a combination of related efforts through the Regional Monitoring Program or other similar collaborative efforts.

iii. Reporting – The Permittees shall submit in their 2010 Annual Report the specific manner in which these risk reduction activities will be accomplished and describe the studies to be performed with a schedule. The Permittees shall report on the status of the risk reduction efforts in their 2011 and 2012 Annual Reports. The Permittees shall report the findings and results of the studies completed, planned, or in progress as well as the status of other risk reduction actions in their March 15, 2014 Integrated Monitoring Report.

C.11.j. Develop Allocation Sharing Scheme with Caltrans.

i. Task Description – The wasteload allocations for urban stormwater developed through the San Francisco Bay mercury TMDL implicitly include California Department of Transportation (Caltrans) roadway and non-roadway facilities within the geographic boundaries of urban runoff management agencies. Consistent with the TMDL, the Permittees are required to develop an equitable mercury allocation-sharing scheme in consultation with Caltrans to address the Caltrans facilities in the program area, and report the details to the Water Board. Alternatively, Caltrans may choose to implement mercury load reduction actions on a watershed or regionwide basis in lieu of sharing a portion of an urban runoff management agencies' mercury allocation. In such a case, the Water Board will consider a separate allocation for Caltrans for which it may demonstrate progress toward attaining an allocation or load reduction in the same manner as municipal programs.

ii. Reporting – The Permittees shall report on the status of the efforts to develop this allocation sharing scheme in their 2010, 2011, and 2012 Annual Reports. The Permittees shall submit in their March 15, 2014 Integrated Monitoring Report the manner in which the urban runoff mercury TMDL allocation will be shared between the Permittees and Caltrans.

C.12. Polychlorinated Biphenyls (PCBs) Controls

The Permittees shall implement the following control programs for PCBs. The Permittees shall perform the control measures and provide reporting on those control measures according to the provisions below. The purpose of these provisions is to implement the urban runoff requirements of the PCBs TMDL and reduce PCBs loads to make substantial progress toward achieving the urban runoff PCBs load allocation. The Permittees may comply with any requirement of this Provision through a collaborative effort.

C.12.a. Implement Project throughout Region to Incorporate PCBs and PCB-Containing Equipment Identification into Existing Industrial Inspections

i. Task Description – The Permittees shall develop training materials and train municipal industrial building inspectors to identify, in the course of their existing inspections, PCBs or PCB-containing equipment. The Permittees shall incorporate such PCB identification into industrial inspection programs.

ii. Implementation Level – Where inspectors identify during inspections PCBs or PCB-containing equipment, the Permittees shall document incidents in inspection reports and refer to appropriate regulatory agencies (e.g. county health departments, Department of Toxic Substances Control, California Department of Public Health, and the Water Board) as necessary.

iii. Reporting – The Permittees shall report the results of training in their 2010 Annual Report and report on both ongoing training development and inspections for PCB identification in their 2011, and following, Annual Reports.

C.12.b. Conduct Pilot Projects to Evaluate Managing PCB-Containing Materials and Wastes during Building Demolition and Renovation (e.g., Window Replacement) Activities

i. Task Description – The Permittees shall evaluate potential presence of PCBs at construction sites, current material handling and disposal regulations/programs (e.g., municipal ordinances, RCRA, TSCA) and current level of implementation.

ii. Implementation Level –

(1) The Permittees shall develop a sampling and analysis plan to evaluate PCBs at construction sites that involve demolition activities (including research on when, where, and which materials potentially contained PCBs).

(2) The Permittees shall implement a sampling and analysis plan at a minimum of 10 sites distributed throughout the combined Permittees' jurisdiction areas.

(3) The Permittees shall develop/select BMPs to reduce or prevent discharges of PCBs during demolition/remodeling. The BMPs will focus on methods

to identify, handle, contain, transport and dispose of PCB-containing building materials.

(4) The Permittees shall develop model ordinances or policies, train and deploy inspectors, and pilot test BMPs at 5 sites.

iii. Reporting –

(1) In their 2010 Annual Report, the Permittees shall submit the sampling and analysis plan (of Provision C.12.b.ii.).

(2) In their 2010 Annual Report, the Permittees shall submit a status report on sampling and analysis along with whatever sampling results are available.

(3) In their 2011 Annual Report, the Permittees shall submit the results of the evaluation (Provision C.12.b.i.) of current regulations, level of implementation, and regulatory gaps as well as the final sampling and analysis report, a list of appropriate BMPs, BMP training program, and model ordinances and policies to prevent PCB discharges from building demolition and improvement activities.

(4) In the March 15, 2014 Integrated Monitoring Report, the Permittees shall submit the results of pilot program effectiveness evaluation.

C.12.c. Pilot Projects to Investigate and Abate On-land Locations with Elevated PCB Concentrations, Including Public Rights-of-way, and Stormwater Conveyances with Accumulated Sediments with Elevated PCBs Concentrations.

i. Task Description – The Permittees shall investigate and abate PCBs sources in or to their storm drain systems in conjunction with the Water Board and other appropriate regulatory agencies with investigation and cleanup authorities. The purpose of this task is to implement and evaluate the benefit of a suite of abatement measures at five pilot project locations. The Permittees shall document the knowledge and experience gained through pilot implementation, and this documentation will provide a basis for determining the implementation scope of abatement projects in subsequent permit terms. The Permittees shall also quantify and report the amount of PCBs loads abated resulting from implementation of these measures.

ii. Implementation Level –

(1) The Permittees, working collaboratively, shall identify 5 drainage areas that contain high levels of PCBs and conduct pilot projects to investigate and abate these high PCB concentrations. To accomplish this, the Permittees shall interview municipal staff and review municipal databases, data collected or compiled through grant-funded efforts, other agency files, and other available information to identify potential PCB source areas and areas where PCB-contaminated sediment accumulates, including within stormwater conveyances. The Permittees shall qualitatively rank and map potential PCB source areas within each drainage. Investigation of mercury (Provision C.11.c.) shall be included in these efforts unless not

appropriate. When contamination is located on private property, the Permittees must either exercise direct authority to require cleanup or notify and request other appropriate authorities to exercise their cleanup authority.

(2) The Permittees shall conduct reconnaissance surveys of the identified drainages and gather information concerning past or current use of PCBs to further identify potential source areas and determine whether runoff from such locations is likely to convey soils/sediments with PCBs to municipal stormwater conveyances.

(3) The Permittees shall validate existence of elevated PCB concentrations through surface soil/sediment sampling and analysis where visual inspections and/or other information suggest potential source areas within each drainage.

Where data confirm significantly elevated PCB concentrations in surface soils/sediments within the subject pilot drainage, the Permittees shall provide available information on current site conditions and owner/operators and other potentially responsible parties to Water Board and other appropriate regulatory agencies to facilitate their issuance of orders for further investigation and remediation of subject sites. The Permittees shall assist the Water Board and other appropriate agencies to identify/evaluate funding to perform abatement and/or responsible parties and abatement options.

(4) The Permittees shall identify areas for expedited abatement on the basis of loading potential including factors such as PCB concentration, mass of sediment, and mobilization potential and/or human health protection thresholds, such as California Human Health Screening Levels.

(5) The Permittees shall conduct an abatement program in portions of drainages under their jurisdiction in conjunction with the Water Board and other appropriate agencies.

iii. Reporting

(1) The Permittees shall report on the identified suspect drainage areas [Provision C.12.c.ii (1)] in their 2010 Annual Report and results of the surveys [Provision C.12.c.ii.(2)] in their 2011 Annual Report.

(2) The Permittees shall report sampling and chemical analysis results at pilot locations [Provision C.12.c.ii.(3)] in their 2011 Annual Reports.

(3) The Permittees shall report on proposed abatement opportunities and activities [Provision C.12.c.ii.(4) and (5)], responsible parties, funding, agency oversight, and schedules in their 2012 Annual Report.

(4) The Permittees shall report results of abatement program effectiveness and estimates of loads reduced (see C.11.g) in the March 15, 2014 Integrated Monitoring Report.

C.12.d. Conduct Pilot Projects to Evaluate and Enhance Municipal Sediment Removal and Management Practices

i. **Task Description** – The Permittees shall jointly evaluate ways to enhance PCBs load reduction benefits of operation and maintenance activities that remove or manage sediment. The purpose of this task is to implement these management practices at the pilot scale in five drainages during this permit term. The Permittees shall document the knowledge and experience gained through pilot implementation, and this documentation will provide a basis for determining the implementation scope of enhanced sediment removal and management practices in subsequent permit terms. The Permittees shall also quantify and report the amount of PCBs loads removed or avoided resulting from implementation of these measures.

ii. **Implementation Level** – In all pilot program drainages selected as part of Provision C.12.c, the Permittees shall jointly evaluate ways to enhance existing sediment removal and management practices such as municipal street sweeping, curb clearing parking restrictions, inlet cleaning, catch basin cleaning, stream and stormwater conveyance system maintenance, and pump station cleaning via increased effort and/or retrofits. This evaluation shall also include consideration of street flushing and capture, collection, or routing to the sanitary sewer (in coordination and consultation with local sanitary sewer agency) as a potential enhanced management practice. The Permittees shall also jointly evaluate existing information on high-efficiency street sweepers. The goal is to evaluate the cost-effectiveness of high-efficiency street sweeping relative to reducing pollutant loads. The Permittees shall develop recommendations for follow-up studies to be conducted.

iii. **Reporting** – The Permittees shall submit a progress report on the results of these two evaluations in their 2010 Annual Report and the final evaluation results in their 2011 Annual Report.

iv. Beginning July 1, 2011, the Permittees shall implement pilot studies for the most potentially effective measure(s) based on the evaluation of Provision C.12.d. ii. throughout the region.

v. **Reporting** – The Permittees shall report effectiveness of enhanced practices pilot implementation in the March 15, 2014 Integrated Monitoring Report, and their plan for implementing enhanced practices in the next permit term.

C.12.e. Conduct Pilot Projects to Evaluate On-Site Stormwater Treatment via Retrofit

i. **Task Description** – The Permittees shall evaluate and quantify the removal of PCBs by on-site treatment systems via retrofit of such systems into existing storm drain systems. The purpose of this task is to implement on-site treatment projects at the pilot scale in ten locations during this permit term. The Permittees shall document the knowledge and experience gained through pilot implementation, and this documentation will provide a basis for determining the implementation scope of on-site treatment retrofits in subsequent permit terms.

ii. Implementation Level – The Permittees, working collaboratively, shall identify at least 10 locations throughout the Permittees' jurisdictions that present opportunities to install and evaluate[51] on-site treatment systems (e.g., detention basins, bioretention units, sand filters, infiltration basins, treatment wetlands) and shall assess the best treatment options for those locations. Every county (San Mateo, Contra Costa, Alameda, Santa Clara, and Solano) should have at least one location. This assessment shall identify potential locations draining a variety of land uses, discuss technical feasibility, and discuss economical feasibility. The Permittees shall choose pilot study locations primarily on the basis of elevated PCBs concentrations with additional consideration to mercury concentrations.

iii. On the basis of the Provision C.12.e.ii. report, the Permittees shall select sites to perform pilot studies and shall conduct pilot studies in selected locations. Taken as a group, these 10 pilot study locations should span treatment types and drainage characteristics.

iv. Reporting –

(1) In their 2011 Annual Report, the Permittees shall report on candidate locations with types of treatment retrofit for each location. The report shall include assessment of at least 10 locations.

(2) In the March 15, 2014 Integrated Monitoring Report, the Permittees shall report status, results, PCBs-removal effectiveness, and lessons learned from the pilot studies and their plan for implementing this type of treatment on an expanded basis throughout the region during the next permit term.

C.12.f. Diversion of Dry Weather and First Flush Flows to POTWs

i. Task Description – The Permittees shall evaluate the reduced loads of PCBs from diversion of dry weather and first flush stormwater flows to sanitary sewers. The knowledge and experience gained through pilot implementation will be used to determine the implementation scope of urban runoff diversion in subsequent permit terms. The Permittees shall document the knowledge and experience gained through pilot implementation, and this documentation will provide a basis for determining the implementation scope of urban runoff diversion projects in subsequent permit terms.

ii. Implementation Level – The Permittees shall implement pilot projects to address the role of pump stations as a source of pollutants of concern (primarily PCBs and secondarily mercury). This work is in addition to Provisions C.2 and C.10 that address dissolved oxygen depletion and trash impacts in receiving waters. The objectives of this provision are: to implement five pilot projects for urban runoff diversion from stormwater pump stations to POTWs; evaluate the reduced loads of mercury and PCBs resulting from the diversion; and gather

[51] The Permittees may evaluate a maximum of two pre-existing treatment systems of the ten total required systems to be evaluated provided that these existing treatment systems are applicable to the intent of this provision.

information to guide the selection of additional diversion projects required in future permits. Collectively, the Permittees shall select 5 stormwater pump stations and 5 alternates by evaluating drainage characteristics and the feasibility of diverting flows to the sanitary sewer.

(1) The Permittees should work with the local POTW on a watershed, program, or regional level to evaluate feasibility and to establish cost sharing agreements. The feasibility evaluation shall include, but not be limited to, costs, benefits, and impacts on the stormwater and wastewater agencies and the receiving waters relevant to the diversion and treatment of the dry weather and first flush flows.

(2) From this feasibility evaluation, the Permittees shall select 5 pump stations and 5 alternates for pilot diversion studies. At least one urban runoff diversion pilot project shall be implemented in each of the five counties (San Mateo, Contra Costa, Alameda, Santa Clara, and Solano). The pilot and alternate locations should be located in industrially dominated catchments where elevated PCB concentrations are documented.

(3) The Permittees shall implement flow diversion to the sanitary sewer at the 5 pilot pump stations. As part of the pilot studies, they shall monitor and measure PCBs load reduction.

iii. Reporting –

(1) The Permittees shall summarize the results of the feasibility evaluation in their 2010 Annual Report, including:

- Selection criteria leading to the identification of the 5 candidate and 5 alternate pump station for pilot studies.
- Time schedules for conducting the pilot studies.
- A proposed method for distributing PCBs load reductions to participating wastewater and stormwater agencies.

(2) The Permittees shall report annually on the status of the pilot studies in each subsequent annual report.

(3) The March 15, 2014 Integrated Monitoring Report shall include:

- Evaluation of pilot program effectiveness.
- PCBs loads reduced.
- Updated feasibility evaluation procedures to guide future diversion project selection.

C.12.g. Monitor Stormwater PCB Pollutant Loads and Loads Reduced

The Permittees shall develop and implement a monitoring program as required in Provision C.8.f to quantify PCBs loads and loads reduced (see C.11.g for details) through the source control, treatment and other management measures implemented as part of the pilot studies of C.12.a through C.12.f.

C.12.h. Fate and Transport Study of PCBs in Urban Runoff

i. Task Description – The Permittees shall conduct or cause to be conducted studies aimed at better understanding the fate, transport, and biological uptake of PCBs discharged in urban runoff.

ii. Implementation Level – The specific information needs include understanding the in-Bay transport of PCBs discharged in urban runoff, the influence of urban runoff on the patterns of food web PCBs accumulation, and the identification of drainages where urban runoff PCBs are particularly important in food web accumulation.

iii. Reporting – The Permittees shall submit in their 2010 Annual Report a workplan describing the specific manner in which these information needs will be accomplished and describing the studies to be performed with a schedule. The Permittees shall report on status of the studies in their 2011 and 2012 Annual Reports. The Permittees shall report in the March 15, 2014 Integrated Monitoring Report the findings and results of the studies completed, planned, or in progress as well as implications of studies on potential control measures to be investigated, piloted or implemented in future permit cycles.

C.12.i. Development of a Risk Reduction Program Implemented throughout the Region

i. Task Description – The Permittees shall develop and implement or participate in effective programs to reduce PCBs-related risks to humans and quantify the resulting risk reductions from these activities.

ii. Implementation Level – The risk reduction activities shall include investigating ways to address public health impacts of PCBs in San Francisco Bay/Delta fish, including activities that reduce actual and potential exposure of health impacts to those people and communities most likely to be affected by PCBs in San Francisco Bay-caught fish, such as subsistence fishers and their families. Such strategies should include public participation in developing effective programs in order to ensure their effectiveness. The Permittees may include studies needed to establish effective exposure reduction activities and risk communication messages as part of their planning. The risk reduction activities may be performed by a third party if the Permittees wish to provide funding for this purpose. This requirement may be satisfied by a combination of related efforts through the Regional Monitoring Program or other similar collaborative efforts.

iii. Reporting – The Permittees shall submit in their 2010 Annual Report the specific manner in which these risk reduction activities will be accomplished and describe the studies to be performed with a schedule. The Permittees shall report on status of the studies in their 2011 and 2012 Annual Reports. The Permittees shall report the findings and results of the studies completed, planned, or in progress as well as the status of other risk reduction actions in the March 15, 2014 Integrated Monitoring Report.

C.13. Copper Controls

The control program for copper is detailed below. The Permittees shall implement the control measures and accomplish the reporting on those control measures according to the provisions below. The purpose of these provisions is to implement the control measures identified in the Basin Plan amendment necessary to support the copper site-specific objectives in San Francisco Bay. The Permittees may comply with any requirement of C.13 Provisions through a collaborative effort.

C.13.a. Manage Waste Generated from Cleaning and Treating of Copper Architectural Features, Including Copper Roofs, during Construction and Post-Construction.

i. Task Description – The Permittees shall ensure that local ordinance authority is established to prohibit the discharge of wastewater to storm drains generated from the installation, cleaning, treating, and washing of the surface of copper architectural features, including copper roofs to storm drains.

ii. Implementation Level

(1) The Permittees shall develop BMPs on how to manage the waste during and post-construction.

(2) The Permittees shall require use of appropriate BMPs when issuing building permits.

(3) The Permittees shall educate installers and operators on appropriate BMPs.

(4) The Permittees shall enforce against noncompliance.

iii. Reporting

(1) The Permittees shall certify adequate legal authority in their 2011 Annual Report or otherwise provide justification for schedule not to exceed one year to comply.

(2) The Permittees shall report annually, starting with their 2012 Annual Report, on training, permitting and enforcement activities.

(3) In their 2013 Annual Report, the Permittees shall evaluate the effectiveness of these measures, including BMP implementation and propose any additional measures to address this source.

C.13.b. Manage Discharges from Pools, Spas, and Fountains that Contain Copper-Based Chemicals

i. Task Description – By adopting local ordinances, the Permittees shall prohibit discharges to storm drains from pools, spas, and fountains that contain copper-based chemicals.

ii. Implementation Level – The Permittees shall either: 1) require installation of a sanitary sewer discharge connection for pools, spas, and fountains, including

connection for filter backwash, with a proper permit from the POTWs; or 2) require diversion of discharge for use in landscaping or irrigation.

iii. Reporting – The Permittees shall certify adequate legal authority in their 2011 Annual Report or otherwise provide justification for schedule not to exceed one year to comply.

C.13.c. Vehicle Brake Pads

i. Task Description – The Permittees shall engage in efforts to reduce the copper discharged from automobile brake pads to surface waters via urban runoff.

ii. Implementation Level – The Permittees shall participate in the Brake Pad Partnership (BPP) process to develop California legislation phasing out copper from certain automobile brake pads sold in California.

iii. Reporting – The Permittees shall report on legislation development and implementation status in Annual Reports during the permit term. In their 2013 Annual Report, the Permittees shall assess status of copper water quality issues associated with automobile brake pads and recommend brake pad-related actions for inclusion in subsequent permits if needed.

C.13.d. Industrial Sources

i. Task Description – The Permittees shall ensure industrial facilities do not discharge elevated levels of copper to storm drains by ensuring, through industrial facility inspections, that proper BMPs are in place.

ii. Implementation Level –

(1) As part of industrial site controls required by Provision C.4, the Permittees shall identify facilities likely to use copper or have sources of copper (e.g., plating facilities, metal finishers, auto dismantlers) and include them in their inspection program plans.

(2) The Permittees shall educate industrial inspectors on industrial facilities likely to use copper or have sources of copper and proper BMPs for them.

(3) As part of the industrial inspection, inspectors shall ensure that proper BMPs are in place at such facilities to minimize discharge of copper to storm drains, including consideration of roof runoff that might accumulate copper deposits from ventilation systems on-site.

iii. Reporting

The Permittees shall highlight copper reduction results in the industrial inspection component in the C.13 portion of each Annual Report beginning September 2010.

C.13.e. Studies to Reduce Copper Pollutant Impact Uncertainties

i. Task Description – The Permittees shall conduct or cause to be conducted technical studies to investigate possible copper sediment toxicity and technical studies to investigate sub-lethal effects on salmonids.

ii. Implementation Level – Technical uncertainties regarding copper effects in the Bay are described in the Basin Plan's implementation program for copper site-specific objectives. These uncertainties include toxicity to Bay benthic organisms possibly caused by high copper concentrations as well as possible impacts to the olfactory system of salmonids. The Permittees shall ensure that these studies are supported and conducted. Similar requirements are included in NPDES permits for wastewater discharges. The Permittees shall submit in their 2010 Annual Report the specific manner in which these information needs will be accomplished and describe the studies to be performed with a schedule. The Permittees shall report the findings and results of the studies completed, planned, or in progress in their 2012 Annual Report.

C.14. Polybrominated Diphenyl Ethers (PBDE), Legacy Pesticides and Selenium

The control program for PBDEs, legacy pesticides, and selenium is detailed below. The Permittees shall perform the control measures and accomplish the reporting on those control measures according to the provisions below. The purpose of these provisions is to gather concentration and loading information on a number of pollutants of concern (e.g., PBDEs, DDT, dieldrin, chlordane, selenium) for which TMDLs are planned or are in the early stages of development. The Permittees may comply with any requirement of C.14 Provisions through a collaborative effort.

C.14.a. Control Program for PBDEs, Legacy Pesticides, and Selenium.

i. Task Description – To determine if urban runoff is a conveyance mechanism associated with the possible impairment of San Francisco Bay for PBDEs, legacy pesticides (such as DDT, dieldrin, and chlordane), and selenium, the Permittees shall work with the other municipal stormwater management agencies in the Bay Region to implement a plan (PBDEs/Legacy Pesticides/Selenium Plans) to identify, assess, and manage controllable sources of PBDEs, legacy pesticides, and selenium found in urban runoff, if any. The Water Board recognizes that these three pollutants are distinct in terms of origin and transport, but they have been grouped into a single permit provision because the requirements are identical. The Water Board anticipates that some of the control measures that are developed for PCBs consistent with aforementioned efforts warrant consideration for the control of PBDEs and possibly legacy pesticides.

ii. Implementation Level – The PBDEs/Legacy Pesticides/Selenium Plan shall include actions to do the following:

Characterize the representative distribution of PBDEs, legacy pesticides, and selenium in the urban areas of the Bay Region covered by this permit to determine:

(1) If PBDEs, legacy pesticides, and selenium are present in urban runoff;

(2) If PBDEs, legacy pesticides, or selenium are distributed relatively uniformly in urban areas; and

(3) Whether storm drains or other surface drainage pathways are sources of PBDEs, legacy pesticides, or selenium in themselves, or whether there are specific locations within urban watersheds where prior or current uses result in land sources contributing to discharges of PBDEs, legacy pesticides, or selenium to San Francisco Bay via urban runoff conveyance systems.

iii. Report on progress in 2010 and 2011 Annual Reports. Submit in the 2012 Annual Report a report with the results of the characterization of PBDEs, legacy pesticides, and selenium in urban areas throughout the Bay Region.

iv. Provide information to allow calculation of PBDEs, legacy pesticides, and selenium loads to San Francisco Bay from urban runoff conveyance systems.

v. Submit in the 2013 Annual Report a report with the information required to compute such loads to San Francisco Bay of PBDEs, legacy pesticides, and selenium from urban runoff conveyance systems throughout the Bay.

vi. Identify control measures and/or management practices to eliminate or reduce discharges of PBDEs, legacy pesticides, or selenium conveyed by urban runoff conveyance systems.

vii. Submit in the 2013 Annual Report a report identifying such control measures/management practices.

C.15. Exempted and Conditionally Exempted Discharges

The objective of this provision is to exempt unpolluted non-stormwater discharges from Discharge Prohibition A.1 and to conditionally exempt non-stormwater discharges that are potential sources of pollutants. In order for non-stormwater discharges to be conditionally exempted from Discharge Prohibition A.1, the Permittees must identify appropriate BMPs, monitor the non-stormwater discharges where necessary, and ensure implementation of effective control measures – as listed below – to eliminate adverse impacts to waters of the State consistent with the discharge prohibitions of the Order.

C.15.a. Exempted Non-Stormwater Discharges (Exempted Discharges):

i. Discharge Type – In carrying out Discharge Prohibition A.1, the following unpolluted discharges are exempted from prohibition of non-stormwater discharges:

(1) Flows from riparian habitats or wetlands;

(2) Diverted stream flows;

(3) Flows from natural springs;

(4) Rising ground waters;

(5) Uncontaminated and unpolluted groundwater infiltration;

(6) Single family homes' pumped groundwater, foundation drains, and water from crawl space pumps and footing drains;

(7) Pumped groundwater from drinking water aquifers; and

(8) NPDES permitted discharges (individual or general permits).

ii. Implementation Level – The non-stormwater discharges listed in Provision C.15.a.i above are exempted unless they are identified by the Permittees or the Executive Officer as sources of pollutants to receiving waters. If any of the above categories of discharges, or sources of such discharges, are identified as sources of pollutants to receiving waters, such categories or sources shall be addressed as conditionally exempted discharges in accordance with Provision C.15.b below.

C.15.b. Conditionally Exempted Non-Stormwater Discharges:

The following non-stormwater discharges are also exempt from Discharge Prohibition A.1 if they are either identified by the Permittees or the Executive Officer as not being sources of pollutants to receiving waters, or if appropriate control measures to eliminate adverse impacts of such sources are developed and implemented in accordance with the tasks and implementation levels of each category of Provision C.15.b.i-viii below.

i. Discharge Type – Pumped Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains

(1) **Pumped Groundwater from Non Drinking Water Aquifers** –
Groundwater pumped from monitoring wells, used for groundwater basin management, which are owned and/or operated by the Permittees who pump groundwater as drinking water. These aquifers tend to be shallower, when compared to drinking water aquifers.

(a) **Implementation Level** – Twice a year (once during the wet season and once during the dry season), representative samples shall be taken from each aquifer that potentially will discharge or has discharged into a storm drain. Samples collected and analyzed for compliance in accordance with self-monitoring requirements of other NPDES permits or sample data collected for drinking water regulatory compliance may be submitted to comply with this requirement as long as they meet the following criteria:

(i) The water samples shall meet water quality standards consistent with the existing effluent limitations in the Water Board's NPDES General Permits, such as NPDES Nos. CAG912002 and CAG912003 for Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by fuel and VOCs, respectively, and NPDES No. CAG912004 for discharges of low-level, incidental, and potentially contaminated groundwater.

(ii) The water samples shall be analyzed using approved USEPA Methods (e.g., (a) USEPA Method 160.2 for total suspended solids; (b) USEPA Method 8015 Modified for total petroleum hydrocarbons; (c) USEPA Method 8260B and 8270C or equivalent for volatile and semi-volatile organic compounds; and (d) USEPA Method 3005 for metals.

(iii) The water samples shall be analyzed for pH and turbidity.

(iv) If a Permittee is unable to comply with the above criteria, the Permittee shall notify the Water Board upon becoming aware of the compliance issue.

(b) **Required BMPs** – When uncontaminated (meeting the criteria in C.15.b.i.(1)(a)(i)) groundwater is discharged from these monitoring wells, the following shall be implemented:

(i) Discharges shall be properly controlled and maintained to prevent erosion at the discharge point and at a rate that avoids scouring of banks and excess sedimentation in the receiving waterbody.

(ii) Appropriate BMPs shall be implemented to remove total suspended solids and silt to allowable discharge levels. Appropriate BMPs may include filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small scale peroxide addition, or other minor treatment.

(iii) Turbidity of the discharged groundwater shall be maintained below 50 NTUs for discharges to dry creeks, 110 percent of the ambient stream turbidity for a flowing stream with turbidities greater than 50 NTU, or 5 NTU above ambient turbidity for flowing streams with turbidities less than or equal to 50 NTU.

(iv) pH of the discharged groundwater shall be maintained within the range of 6.5 to 8.5.

(c) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.

(2) **Pumped[52] Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains**

(a) Proposed new discharges of uncontaminated groundwater at flows of 10,000 gallons/day or more and all new discharges of potentially contaminated groundwater shall be reported to the Water Board so that they can be subject to NPDES permitting requirements.

(b) Proposed new discharges of uncontaminated groundwater at flows of less than 10,000 gallons/day shall be encouraged to discharge to a landscaped area or bioretention unit that is large enough to accommodate the volume.

(c) If the discharge options in C.15.b.i.(2)(b) above are not feasible and these discharges must enter a storm drain, sampling shall be done to verify that the discharge is uncontaminated.

(i) The discharge shall meet water quality standards consistent with the existing effluent limitations in the Water Board's NPDES General Permits, such as NPDES Nos. CAG912002 and CAG912003 for Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by fuel and VOCs, respectively, and NPDES No. CAG912004 for discharges of low-level, incidental, and potentially contaminated groundwater.

(ii) The Permittees shall require that water samples from these discharge types be analyzed using approved USEPA Methods (e.g., (a) USEPA Method 160.2 for total suspended solids; (b) USEPA Method 8015 Modified for total petroleum hydrocarbons; (c) USEPA Method 8260B and 8270C or equivalent for volatile and semi-volatile organic compounds; and (d) USEPA Method 3005 for metals.

(d) **Required BMPs** – When the discharge has been verified as uncontaminated per sampling completed in C.15.b.i.(2)(c) above, the Permittees shall require the following during discharge:

(i) Proper control and maintain to prevent erosion at the discharge point and at a rate that avoids scouring of banks and excess sedimentation in the receiving waterbody.

[52] Pumped groundwater not exempted in C.15.a or conditionally exempted in C.15.b.i.(1).

(ii) Appropriate BMPs to render pumped groundwater free of pollutants and therefore exempted from prohibition may include the following: filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small scale peroxide addition, or other minor treatment.

(iii) Testing of water samples for turbidity and pH on the first two consecutive days of dewatering.

(iv) Turbidity of discharged groundwater shall be maintained below 50 NTU for discharges to dry creeks, 110 percent of the ambient stream turbidity for a flowing stream with turbidities greater than 50 NTU, or 5 NTU above ambient turbidity for a flowing stream with turbidities less than or equal to 50 NTU.

(v) pH of discharged water shall be maintained within the range of 6.5 to 8.5.

(e) If a Permittee determines that a discharger or a project proponent is unable to comply with the above criteria, the discharger shall be directed to obtain approval or permits directly from the Water Board.

(f) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.

ii. Discharge Type – Air Conditioning Condensate

Required BMPs – Condensate from air conditioning units shall be directed to landscaped areas or the ground. Discharge to a storm drain system may be allowed if discharge to landscaped areas or the ground is not feasible.

iii. Discharge Types – Planned,[53] Unplanned,[54] and Emergency Discharges of the Potable Water System

(1) **Planned Discharges** – Planned discharges are routine operation and maintenance activities in the potable water distribution system that can be scheduled in advance, such as disinfecting water mains, testing fire hydrants, storage tank maintenance, cleaning and lining pipe sections, routine distribution system flushing, reservoir dewatering, and water main dewatering activities. The following requirements only apply to those Permittees that are water purveyors and pertain to their planned discharges of potable water to their storm drain systems.

(a) **Required BMPs[55]** – The Permittees shall implement appropriate BMPs for dechlorination, and erosion and sediment controls for all planned potable water discharges.

[53] Planned discharges typically result from required routine operation and maintenance activities that can be scheduled in advance. Planned discharges are easier to control than unplanned discharges, and the BMPs are significantly easier to plan and implement.

[54] Unplanned discharges are non-routine, the result of accidents or incidents that cannot be scheduled or planned for in advance.

(b) **Notification Requirements**

(i) The Permittees shall notify the Water Board staff at least one week in advance for planned discharges with a flow rate of 250,000 gallons per day or more, or a total volume of 500,000 gallons or more. The Permittees shall also notify other interested parties who may be impacted by planned discharges, such as flood control agencies, downstream jurisdictions, and non-governmental organizations such as creek groups, before discharge. The notification shall include the following information, but is not limited to: (1) project name; (2) type of discharges; (3) receiving waterbody(ies); (4) date of discharge; (5) time of discharge (in military time); (6) estimated volume (gallons); and (7) estimated flow rate (gallons per day); and (8) monitoring plan of the discharges and receiving water. If receiving water monitoring is infeasible or is not practicable, justification shall be provided.

(c) **Monitoring and Reporting Requirements**

(i) The Permittees shall monitor planned discharges for pH, chlorine residual, and turbidity.

(ii) The following discharge benchmarks shall be used to evaluate the effectiveness of BMPs for all planned discharges:

- Chlorine residual 0.05 mg/L using the field test (Standard Methods 4500-Cl F and F) or equivalent
- pH ranges between 6.5 and 8.5
- Turbidity of 50 NTU post-BMPs or limit increase in turbidity above background level as follows:

Receiving Water Background	Incremental Increase
Dry Creek	50 NTU
< 50 NTU	5 NTU
50–100 NTU	10 NTU
> 100 NTU	10% of background

(iii) The Permittees shall submit the following information with the Annual Report in tabular form for all planned discharges. Reporting content shall include, but is not limited to the following parameters: (1) project name; (2) type of discharge; (3) receiving waterbody(ies); (4) date of discharge; (5) duration of discharge (in military time); (6) estimated volume (gallons); (7) estimated flow rate (gallons per day); (8) chlorine residual (mg/L); (9) pH; (10) turbidity (NTU) for receiving water where feasible and point of discharge, and (11) description of implemented BMPs or corrective actions.

[55] Reference for BMPs, monitoring methods: *Guidelines for the Development of Your BMP Manual for Drinking Water System Releases.* Developed by the California-Nevada Sections of the American Water Works Association (CA-NV AWWA), Environmental Compliance Committee (ECC) 2005.

(2) **Unplanned Discharges** – Unplanned discharges are non-routine activities such as water line breaks, leaks, overflows, fire hydrant shearing, and emergency flushing. The following requirements only apply to those Permittees that are water purveyors and pertain to their unplanned discharges of potable water to their storm drain systems.

(a) **Required BMPs** – The Permittees shall implement appropriate BMPs for dechlorination and erosion and sediment control for all unplanned discharges upon containing the discharge and attaining safety of the discharge site.

(b) **Administrative BMPs** – In some instances, the Permittees shall implement Administrative BMPs, such as source control measures, managerial practices, operations and maintenance procedures, or other measures to reduce or prevent potential pollutants from being discharged during unplanned discharges upon containing the discharge and attaining safety of the discharge site.

(c) **Notification Requirements**

(i) The Permittees shall report to the State Office of Emergency Services as soon as possible, but no later than two hours after becoming aware of (1) any aquatic impacts (e.g., fish kill) as a result of the unplanned discharges, or (2) when the discharge might endanger or compromise public health and safety.

(ii) The Permittees shall report to Water Board staff, by telephone or email as soon as possible, but no later than 24 hours after becoming aware of any unplanned discharges, where the total chlorine residual is greater than 0.05 mg/L and the total volume is approximately 50,000 gallons or more.

- Within five working days after the 24-hour telephone or email report, the Permittees shall submit a report documenting the discharge and corrective actions taken to Water Board staff and other interested parties.

(d) Monitoring and Reporting Requirements

(i) The Permittees shall monitor at least 10% of their unplanned discharges for pH and chlorine residual, and visually assess each discharge for turbidity immediately downstream of implemented BMPs to demonstrate their effectiveness. After the implementation of appropriate BMPs, the discharge pH levels outside the discharge ranges (below 6.5 and above 8.5), chlorine residual above 0.05 mg/l, or moderate and high turbidity shall trigger BMP improvement. If the Permittees monitor more than 10% of the unplanned discharges, all monitoring results shall be included in the Annual Report.

(ii) The Permittees shall submit the following information with the Annual Report in tabular form for all unplanned discharges. The reporting format and content shall be as described in Provision C.15.b.ii.(1)(c)(iii) of the Planned Discharges above. In

addition, these reports shall also state the time of discharge discovery, notification time, inspector arrival time, and responding crew arrival time.

(iii) After 18 months of consecutive data gathering, a Permittee may propose, to the Executive Officer, a reduced monitoring plan targeting specific "high-risk" or "environmentally sensitive" areas (i.e., areas that are prone to erosion and excess sedimentation at high flows, support rare or endangered species, or provide aquatic habitat with proven effective BMPs). Until the Executive Officer approves the reduced monitoring plan, the Permittee shall continue the monitoring plan prescribed in C.15.b.iii.(2)(d)(i).

(3) **Emergency Discharges** – Emergency discharges are the result of firefighting, unauthorized hydrant openings, natural or man-made disasters (e.g., earthquakes, floods, wildfires, accidents, terrorist actions).

Required BMPs

(a) The Permittees shall implement or require fire fighting personnel to implement BMPs for emergency discharges. However, the BMPs should not interfere with immediate emergency response operations or impact public health and safety. BMPs may include, but are not limited to, the plugging of the storm drain collection system for temporary storage, the proper disposal of water according to jurisdictional requirements, and the use of foam where there may be toxic substances on the property the fire is located.

(b) During emergency situations, priority of efforts shall be directed toward life, property, and the environment (in descending order). The Permittees or fire fighting personnel shall control the pollution threat from their activities to the extent that time and resources allow.

(c) **Reporting Requirements** – Reporting requirements will be determined by Water Board staff on a case-by-case basis, such as for fire incidents at chemical plants.

iv. Discharge Type – Individual Residential Car Washing

Required BMPs

(1) The Permittees shall discourage through outreach efforts individual residential car washing within their jurisdictional areas that discharge directly into their MS4s.

(2) The Permittees shall encourage individuals to direct car wash waters to landscaped areas, use as little detergent as necessary, wash cars at commercial car wash facilities, etc.

v. Discharge Type – Swimming Pool, Hot Tub, Spa, and Fountain Water Discharges

(1) **Required BMPs**

(a) The Permittees shall prohibit discharge of water that contains chlorine residual, copper algaecide, filter backwash or other pollutants to storm drains or to waterbodies. Such polluted discharges from pools, hot tubs, spas, and fountains shall be directed to the sanitary sewer (with the local sanitary sewer agency's approval) or to landscaped areas that can accommodate the volume.

(b) Discharges from swimming pools, hot tubs, spas and fountains shall be allowed into storm drain collection systems only if there are no other feasible disposal alternatives (e.g., disposal to sanitary sewer or landscaped areas) and if the discharge is properly dechlorinated to non-detectable levels of chlorine consistent with water quality standards.

(c) The Permittees shall require that new or rebuilt swimming pools, hot tubs, spas and fountains within their jurisdictions have a connection[56] to the sanitary sewer to facilitate draining events. The Permittees shall coordinate with local sanitary sewer agencies to determine the standards and requirements necessary for the installation of a sanitary sewer discharge location to allow draining events for pools, hot tubs, spas, and fountains to occur with the proper permits from the local sanitary sewer agency.

(d) The Permittees shall improve their public outreach and educational efforts and ensure implementation of the required BMPs and compliance in commercial, municipal, and residential facilities.

(e) The Permittees shall implement the Illicit Discharge Enforcement Response Plan from C.5.b for polluted (contains chlorine, copper algaecide, filter backwash, or other pollutants) swimming pool, hot tub, spa, or fountain waters that get discharged into the storm drain.

(2) **Reporting** – The Permittees shall keep records of the authorized major discharges of dechlorinated pool, hot tubs, spa and fountain water to the storm drain, including BMPs employed; such records shall be available for inspection by the Water Board.

vi. Discharge Type – Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering

(1) **Required BMPs** – The Permittees shall promote measures that minimize runoff and pollutant loading from excess irrigation via the following:

(a) Promoting and/or working with potable water purveyors to promote conservation programs that minimize discharges from lawn watering and landscape irrigation practices;

[56] This connection could be a drain in the pool to the sanitary sewer or a sanitary sewer clean out located close enough to the pool so that a hose can readily direct the pool discharge into the sanitary sewer clean out.

(b) Promoting outreach messages regarding the use of less toxic options for pest control and landscape management;

(c) Promoting and/or working with potable water purveyors to promote the use of drought tolerant, native vegetation to minimize landscape irrigation demands;

(d) Promoting and/or working with potable water purveyors to promote outreach messages that encourage appropriate applications of water needed for irrigation and other watering practices; and,

(e) Implementing the Illicit Discharge Enforcement Response Plan from C.5.b, as necessary, for ongoing, large-volume landscape irrigation runoff to their MS4s.

(2) **Reporting** – The Permittees shall provide implementation summaries in their Annual Report.

vii. Additional Discharge Types –The Permittees shall identify and describe additional types and categories of discharges not yet listed in Provision C.15.b that they propose to conditionally exempt from Prohibition A.1 in periodic submissions to the Executive Officer. For each such category, the Permittees shall identify and describe, as necessary and appropriate to the category, either documentation that the discharges are not sources of pollutants to receiving waters or circumstances in which they are not found to be sources of pollutants to receiving waters. Otherwise, the Permittees shall describe control measures to eliminate adverse impacts of such sources, procedures and performance standards for their implementation, procedures for notifying the Water Board of these discharges, and procedures for monitoring and record management.

viii. Permit Authorization for Exempted Non-Stormwater Discharges

(1) Discharges of non-stormwater from sources owned or operated by the Permittees are authorized and permitted by this Permit, if they are in accordance with the conditions of this provision.

(2) The Water Board may require dischargers of non-stormwater, other than the Permittees, to apply for and obtain coverage under an NPDES permit and to comply with the control measures pursuant to Provision C.15.b. Non-stormwater discharges that are in compliance with such control measures may be accepted by a Permittee and are not subject to Prohibition A.1.

(3) The Permittees may propose, as part of their annual updates consistent with the requirements of Provision C.15.b of this Permit, additional categories of non-stormwater discharges with BMPs, to be included in the exemption to Prohibition A.1. Such proposals may be subject to approval by the Executive Officer as a minor modification of the Permit.

C.16. Annual Reports

C.16.a. The Permittees shall submit Annual Reports electronically and in paper copy upon request by September 15 of each year. Each Annual Report shall report on the previous fiscal year beginning July 1 and ending June 30. The annual reporting requirements are set forth in Provisions C.1 – C.15. The Permittees shall retain documentation as necessary to support their Annual Report. The Permittees shall make this supporting information available upon request within a timely manner, generally no more that ten business days unless otherwise agreed to by the Executive Officer.

C.16.b. The Permittees shall collaboratively develop a common annual reporting format for acceptance by the Executive Officer by April 1, 2010. The resulting Annual Report Form, once approved, shall be used by all Permittees. The Annual Report Form may be changed by April 1 of each year for the following annual report, to more accurately reflect the reporting requirements of Provisions C.1 – C.15, with the agreement of the Permittees and by the approval of the Executive Officer.

C.16.c. The Permittees shall certify in each Annual Report that they are in compliance with all requirements of the Order. If a Permittee is unable to certify compliance with a requirement, it must submit in the Annual Report the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance.

C.17. Modifications to this Order

This Order may be modified, or alternatively, revoked or reissued, before the expiration date as follows:

C.17.a. To address significant changed conditions identified in the technical or Annual Reports required by the Water Board, or through other means or communication, that were unknown at the time of the issuance of this Order;

C.17.b. To incorporate applicable requirements of statewide water quality control plans adopted by the State Board or amendments to the Basin Plan approved by the State Board; or

C.17.c. To comply with any applicable requirements, guidelines, or regulations issued or approved under section 402(p) of the CWA, if the requirement, guideline, or regulation so issued or approved contains different conditions or additional requirements not provided for in this Order. The Order as modified or reissued under this paragraph shall also contain any other requirements of the CWA then applicable.

C.18. Standard Provisions

Each Permittee shall comply with all parts of the Standard Provisions contained in Attachment K of this Order.

C.19. Expiration Date

This Order expires on November 30, 2014, five years from the effective date of this Order. The Permittees must file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of such date as application for reissuance of waste discharge requirements.

C.20. Rescission of Old Orders

Order Nos. 99-058, 99-059, 01-024, R2-2003-0021, and R2-2003-0034 are hereby rescinded on the effective date of this Order, which shall be December 1, 2009, provided that the Regional Administrator of USEPA, Region IX, does not object.

C.21. Effective Date

The Effective Date of this Order and Permit shall be December 1, 2009, provided that the Regional Administrator of USEPA, Region IX, does not object.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on October 14, 2009 and revised on November 28, 2011 by Order No. R2-2011-0083.

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Bruce H. Wolfe
Executive Officer

Appendix I: Municipal Regional Stormwater Permit Fact Sheet
Attachment A: Provision C.3.b. Sample Reporting Table
Attachment B: Provision C.3.g. Alameda Permittees Hydromodification Requirements
Attachment C: Provision C.3.g. Contra Costa Permittees Hydromodification Requirements
Attachment D: Provision C.3.g. Fairfield-Suisun Permittees Hydromodification Requirements
Attachment E: Provision C.3.g. San Mateo Permittees Hydromodification Requirements
Attachment F: Provision C.3.g. Santa Clara Permittees Hydromodification Requirements
Attachment G: Provision C.3.h. Sample Reporting Table
Attachment H: Provision C.8. Status & Long-Term Monitoring Follow-up Analysis and Actions
Attachment I: Provision C.8. Standard Monitoring Provisions

Attachment J: Provision C.10. Minimum Trash Capture Areas and Minimum Number of Trash Hot Spots
Attachment K: Standard NPDES Stormwater Permit Provisions
Attachment L: Provision C.3.c.i.(1)(b)(vi) Specification of Soils for Biotreatment or Bioretention Facilities
Attachment M: Provision C.3.g. Revised HM Map for Santa Clara Permittees

ACRONYMS & ABBREVIATIONS

ACCWP	Alameda Countywide Clean Water Program
BAHM	Bay Area Hydrology Model
Basin Plan	Water Quality Control Plan for the San Francisco Bay Basin
BASMAA	Bay Area Stormwater Management Agencies Association
BMPs	Best Management Practices
CASQA	California Stormwater Quality Association
CCC	California Coastal Commission
CCCWP	Contra Costa Clean Water Program
CDFG	California Department of Fish and Game
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CSBP	California Stream Bioassessment Procedures
CWA	Federal Clean Water Act
CWC	California Water Code
DCIA	Directly Connected Impervious Area
ERP	Enforcement Response Plan
FR	Federal Register
GIS	Geographic information System
HBANC	Homebuilders Association of Northern California
HM	Hydromodification Management
HMP	Hydromodification Management Plan
IC/ID	Illicit Connections and Illicit Discharges
IPM	Integrated Pest Management
LID	Low Impact Development
MEP	Maximum Extent Practicable
MRP	Municipal Stormwater Regional Permit
MS4	Municipal Separate Storm Sewer System
MTC	Metropolitan Transportation Commission

NAFSMA	National Association of Flood & Stormwater Management Agencies
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRDC	Natural Resources Defense Council
O&M	Operation and Maintenance
PBDE	Polybrominated Diphenyl Ether
POTW	Publicly Owned Treatment Works
RCRA	Resource Conservation and Recovery Act
RMP	Regional Monitoring Program
ROWD	Report of Waste Discharge
RTA	Rapid Trash Assessment
SARA	Superfund Amendments and Reauthorization Act
SCURTA	Santa Clara Urban Rapid Trash Assessment
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SFRWQCB	San Francisco Bay Regional Water Quality Control Board
SIC	Standard Industrial Classification
SMWPPP	San Mateo Countywide Water Pollution Prevention Program
SOP	Standard Operating Procedure
SWAMP	Surface Water Ambient Monitoring Program
SWPPP	Stormwater Pollution Prevention Plan
SWRCB	State Water Resources Control Board
TIE	Toxicity Identification Evaluation
TMDLs	Total Maximum Daily Loads
TSCA	Toxic Substances Control Act
USEPA	Unites States Environmental Protection Agency
Water Board	San Francisco Bay Regional Water Quality Control Board
WLAs	Wasteload Allocations

GLOSSARY

Arterial Roads	Freeways, multilane highways, and other important roadways that supplement the Interstate System. Arterial roads connect, as directly as practicable, principal urbanized areas, cities, and industrial centers.
Beneficial Uses	The uses of water of the state protected against degradation, such as domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation and preservation of fish and wildlife, and other aquatic resources or preserves.
Collector Roads	Major and minor roads that connect local roads with arterial roads. Collector roads provide less mobility than arterial roads at lower speeds and for shorter distances.
Commercial Development	Development or redevelopment to be used for commercial purposes, such as office buildings, retail or wholesale facilities, restaurants, shopping centers, hotels, and warehouses.
Construction Site	Any project, including projects requiring coverage under the General Construction Permit, that involves soil disturbing activities including, but not limited to, clearing, grading, paving, disturbances to ground such as stockpiling, and excavation. Construction sites are all sites with disturbed or graded land area not protected by vegetation, or pavement, that are subject to a building or grading permit.
Conditionally Exempted Non-Stormwater Discharge	Non-stormwater discharges that are prohibited by A.1. of this permit, unless such discharges are authorized by a separate NPDES permit or are not in violation of water quality standards because appropriate BMPs have been implemented to reduce pollutants to the maximum extent practicable, consistent with Provision C.15.
Discharger	Any responsible party or site owner or operator within the Permittees' jurisdiction whose site discharges stormwater runoff, or a non-stormwater discharge
Detached Single-family Home Project	The building of one single new house or the addition and/or replacement of impervious surface associated with one single existing house, which is not part of a larger plan of development.
Development	Construction, rehabilitation, redevelopment, or reconstruction of any public or private residential project (whether single-family, multi-unit, or planned unit development); or industrial, commercial, retail or other nonresidential project, including public agency projects.
Estate Residential Development	Development zoned for a minimum 1 acre lot size
Emerging Pollutants	Pollutants in water that either: (1) May not have been thoroughly studied to date but are suspected by the scientific community to be a source of impairment of beneficial uses and/or present a health risk; or (2) Are not yet part of a monitoring program.
Erosion	The diminishing or wearing away of land due to wind, or water. Often the eroded debris (silt or sediment) becomes a pollutant via stormwater runoff. Erosion occurs

	naturally, but can be intensified by land disturbing and grading activities such as farming, development, road building, and timber harvesting.
Full Trash Capture Device	Full trash capture systems are defined as "any device or series of devices that traps all particles retained by a 5mm mesh screen and has a design treatment capacity of not less than the peak flow rate resulting from a one-year, one-hour, storm in the tributary drainage catchment area." Trash collection booms and sea curtains do not meet this definition, but are effective for removal of floating trash if properly maintained. Because these devices do not meet the Full Trash Capture Device definition, only ¼ of the catchment area treated by these measures is credited toward meeting the trash management area requirement of C.10.a.
General Permits	Waste Discharge Requirements or NPDES Permits containing requirements that are applicable to a class or category of dischargers. The State of California has general stormwater permits for construction sites that disturb soil of 1 acre or more; industrial facilities; `Phase II smaller municipalities (including nontraditional Small MS4s, which are governmental facilities, such as military bases, public campuses, and prison and hospital complexes); and small linear underground/overhead projects disturbing at least 1 acre, but less than 5 acres (including trenching and staging areas).
Grading	The cutting and/or filling of the land surface to a slope or elevation.
Hydrologic source control measures	Site design techniques that minimize and/or slow the rate of stormwater runoff from the site.
Hydromodification	The modification of a stream's hydrograph, caused in general by increases in flows and durations that result when land is developed (e.g., made more impervious). The effects of hydromodification include, but are not limited to, increased bed and bank erosion, loss of habitat, increased sediment transport and deposition, and increased flooding.
Illicit Discharge	Any discharge to a municipal separate storm sewer (storm drain) system (MS4) that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term *illicit discharge* includes all non-stormwater discharges not composed entirely of stormwater and discharges that are identified under Section A. (Discharge Prohibitions) of this Permit. The term illicit discharge does not include discharges that are regulated by an NPDES permit (other than the NPDES permit for discharges from the MS4) or authorized by the Regional Water Board Executive Officer.
Impervious Surface	A surface covering or pavement of a developed parcel of land that prevents the land's natural ability to absorb and infiltrate rainfall/stormwater. Impervious surfaces include, but are not limited to, roof tops; walkways; patios; driveways; parking lots; storage areas; impervious concrete and asphalt; and any other continuous watertight pavement or covering. Landscaped soil and pervious pavement, including pavers with pervious openings and seams, underlain with pervious soil or pervious storage material, such as a gravel layer sufficient to hold at least the C.3.d volume of rainfall runoff are not impervious surfaces. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for purposes of determining whether a project is a Regulated Project under

	Provisions C.3.b. and C.3.g. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling and meeting the Hydromodification Standard.
Industrial Development	Development or redevelopment of property to be used for industrial purposes, such as factories; manufacturing buildings; and research and development parks.
Infill Site	A site in an urbanized area where the immediately adjacent parcels are developed with one or more qualified urban uses or at least 75% of the perimeter of the site adjoins parcels that are developed with qualified urban uses and the remaining 25% of the site adjoins parcels that have previously been developed for qualified urban uses and no parcel within the site has been created within the past 10 years.
Infiltration Device	Any structure that is deeper than wide and designed to infiltrate stormwater into the subsurface, and, as designed, bypass the natural groundwater protection afforded by surface soil. These devices include dry wells, injection wells, and infiltration trenches (includes French drains).
Joint Stormwater Treatment Facility	A stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects located adjacent to each other,
Local Roads	Roads that provide limited mobility and are the primary access to residential areas, businesses, farms, and other local areas. Local roads offer the lowest level of mobility and usually contain no bus routes. Service to through traffic movement usually is deliberately discouraged in local roads.
Maximum Extent Practicable (MEP)	A standard for implementation of stormwater management actions to reduce pollutants in stormwater. Clean Water Act (CWA) 402(p)(3)(B)(iii) requires that municipal stormwater permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." Also see State Board Order WQ 2000-11.
Mixed-use Development or Redevelopment	Development or redevelopment of property to be used for two or more different uses, all intended to be harmonious and complementary. An example is a high-rise building with retail shops on the first 2 floors, office space on floors 3 through 10, apartments on the next 10 floors, and a restaurant on the top floor.
Municipal Separate Storm Sewer System (MS4)	A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains), as defined in 40 CFR 122.26(b)(8): (1) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law...including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization or a designated and approved management agency under section 208 of the CWA) that discharges into waters of the United States; (2) Designed or used for collecting or conveying stormwater; (3) Which is not a combined sewer; and (4) Which is not part of a Publicly Owned Treatment Works (POTW), as defined in

	40 CFR 122.2.
Municipal Corporation Yards, Vehicle Maintenance/Material Storage Facilities/	Any Permittee-owned or -operated facility, or portion thereof, that: (1) Conducts industrial activity, operates or stores equipment, and materials; (2) Performs fleet vehicle service/maintenance including repair, maintenance, washing, or fueling; (3) Performs maintenance and/or repair of machinery/equipment;
National Pollutant Discharge Elimination System (NPDES)	A national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the CWA.
Notice of Intent (NOI)	The application form by which dischargers seek coverage under General Permits, unless the General Permit requires otherwise.
Parking Lot	Land area or facility for the parking or storage of motor vehicles used for business, commerce, industry, or personal use.
Permittee/Permittees	Municipal agency/agencies that are named in and subject to the requirements of this Permit.
Permit Effective Date	The date at least 45 days after Permit adoption, provided the Regional Administrator of U.S. EPA Region 9 has no objection, whichever is later.
Pervious Pavement	Pavement that stores and infiltrates rainfall at a rate equal to immediately surrounding unpaved, landscaped areas, or that stores and infiltrates the rainfall runoff volume described in C.3.d.
Point Source	Any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operations, landfill leachate collection systems, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.
Pollutants of Concern	Pollutants that impair waterbodies listed under CWA section 303(d), pollutants associated with the land use type of a development, including pollutants commonly associated with urban runoff. Pollutants commonly associated with stormwater runoff include, but are not limited to, total suspended solids; sediment; pathogens (e.g., bacteria, viruses, protozoa); heavy metals (e.g., copper, lead, zinc, and cadmium); petroleum products and polynuclear aromatic hydrocarbons; synthetic organics (e.g., pesticides, herbicides, and PCBs); nutrients (e.g., nitrogen and phosphorus fertilizers); oxygen-demanding substances (e.g., decaying vegetation and animal waste) litter and trash.
Potable Water	Water that is safe for domestic use, drinking, and cooking.
Pre-Project Runoff Conditions	Stormwater runoff conditions that exist onsite immediately before development activities occur. This definition is not intended to be interpreted as that period before any human-induced land activities occurred. This definition pertains to redevelopment as well as initial development.
Public Development	Any construction, rehabilitation, redevelopment or reconstruction of any public agency project, including but not limited to, libraries, office buildings, roads, and

	highways.
Redevelopment	Land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred.
Regional Monitoring Program (RMP)	A monitoring program aimed at determining San Francisco Bay Region receiving water conditions. The program was established in 1993 through an agreement among the Water Board, wastewater discharger agencies, dredgers, Municipal Stormwater Permittees and the San Francisco Estuary Institute to provide regular sampling of Bay sediments, water, and organisms for pollutants. The program is funded by the dischargers and managed by San Francisco Estuary Institute.
Regional Project	A regional or municipal stormwater treatment facility that discharges into the same watershed that the Regulated Project does.
Regulated Projects	Development projects as defined in Provision C.3.b.ii.
Residential Housing Subdivision	Any property development of multiple single-family homes or of dwelling units intended for multiple families/households (e.g., apartments, condominiums, and town homes).
Retrofitting	Installing improved pollution control devices at existing facilities to attain water quality objectives.
Sediments	Soil, sand, and minerals washed from land into water, usually after rain.
Solid Waste	All putrescible and nonputrescible solid, semisolid, and liquid wastes as defined by California Government Code Section 68055.1 (h).
Source Control BMP	Land use or site planning practices, or structural or nonstructural measures, that aim to prevent runoff pollution by reducing the potential for contact with rainfall runoff at the source of pollution. Source control BMPs minimize the contact between pollutants and urban runoff.
Standard Industrial Classification (SIC)	A federal system for classifying establishments by the type of activity in which they are engaged using a four-digit code.
Stormwater Pumping Station	Mechanical device (or pump) that is installed in MS4s or pipelines to discharge stormwater runoff and prevent flooding.
Stormwater Treatment System	Any engineered system designed to remove pollutants from stormwater runoff by settling, filtration, biological degradation, plant uptake, media absorption/adsorption or other physical, biological, or chemical process. This includes landscape-based systems such as grassy swales and bioretention units as well as proprietary systems.
Surface Water Ambient Monitoring Program (SWAMP)	The State Water Board's program to monitor surface water quality; coordinate consistent scientific methods; and design strategies for improving water quality monitoring, assessment, and reporting.
Total Maximum Daily Loads (TMDLs)	The maximum amount of a pollutant that can be discharged into a waterbody from all sources (point and nonpoint) and still maintain water quality standards. Under CWA section 303(d), TMDLs must be developed for all waterbodies that do not meet water quality standards even after application of technology-based controls,

	more stringent effluent limitations required by a state or local authority, and other pollution control requirements such as BMPs.
Toxicity Identification Evaluation (TIE)	TIE is a series of laboratory procedures used to identify the chemical(s) responsible for toxicity to aquatic life. These procedures are designed to decrease, increase, or transform the bioavailable fractions of contaminants to assess their contributions to sample toxicity. TIEs are conducted separately on water column and sediment samples.
Trash and Litter	Trash consists of litter and particles of litter. California Government Code Section 68055.1 (g) defines litter as all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the state, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling, or manufacturing.
Treatment	Any method, technique, or process designed to remove pollutants and/or solids from polluted stormwater runoff, wastewater, or effluent.
Waste Load Allocations (WLAs)	A portion of a receiving water's TMDL that is allocated to one of its existing or future point sources of pollution.
Water Quality Control Plan (Basin Plan)	The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State within the Region, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives and discharge prohibitions. The Basin Plan was duly adopted and approved by the State Water Resources Control Board, U.S. EPA, and the Office of Administrative Law where required. The latest version is effective as of December 22, 2006.
Water Quality Objectives	The limits or levels of water quality elements or biological characteristics established to reasonably protect the beneficial uses of water or to prevent pollution problems within a specific area. Water quality objectives may be numeric or narrative.
Water Quality Standards	State-adopted and USEPA-approved water quality standards for waterbodies. The standards prescribe the use of the waterbody and establish the water quality criteria that must be met to protect designated uses. Water quality standards also include the federal and state anti-degradation policy.
Wet Season	October 1 through April 30 of each year

APPENDIX I

MUNICIPAL REGIONAL STORMWATER PERMIT

FACT SHEET

FACT SHEET/RATIONALE
TECHNICAL REPORT

for

ORDER NO. R2-2009-0074

NPDES Permit No. CAS612008

Municipal Regional Stormwater NPDES Permit
and
Waste Discharge Requirements

for

The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County, the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District, which have joined together to form the Alameda Countywide Clean Water Program

The cities of Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District, which have joined together to form the Contra Costa Clean Water Program

The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and Santa Clara County, which have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program

The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood Control District, and San Mateo County, which have joined together to form the San Mateo Countywide Water Pollution Prevention Program

The cities of Fairfield and Suisun City, which have joined together to form the Fairfield-Suisun Urban Runoff Management Program

The City of Vallejo and the Vallejo Sanitation and Flood Control District

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I. CONTACT INFORMATION

Water Board Staff Contact: Dale Bowyer, 1515 Clay Street, Suite 1400, Oakland, CA 94612, 510-622-2323, 510-622-2501 (fax), email: dbowyer@waterboards.ca.gov

The Permit and other related documents can be downloaded from the Water Board website at: http://www.waterboards.ca.gov/sanfranciscobay/mrp.htm

Comments can be electronically submitted to mrp@waterboards.ca.gov.

All documents referenced in this Fact Sheet and in the Order are available for public review at the Water Board office, located at the address listed above. Public records are available for inspection during regular business hours, from 9:00 am to 4:00 pm, Monday through Friday, 12 - 1 pm excluded. Per the Governor's order calling for furloughs, the Water Board office will be closed the first three Fridays of each month through June 2010. To schedule an appointment to inspect public records, contact Melinda Wong at 510-622-2430.

II. PERMIT GOALS AND PUBLIC PROCESS

Goals

The Goals for the Municipal Regional Stormwater Permit (hereinafter, the Permit) Development Process include:

1. Consolidate six Phase I municipal stormwater NPDES permits into one consistent permit which is regional in scope.
2. Include more specificity in NPDES permit order language and requirements. Create (A) required stormwater management actions, (B) a specific level of implementation for each action or set of actions, and (C) reporting and effectiveness evaluation requirements for each action sufficient to determine compliance.
3. Incorporate the Stormwater Management Plan level of detail and specificity into the Permit. Stormwater Management Plans have always been considered integral to the municipal stormwater NPDES permits, but have not received the level of public review in the adoption process necessary relative to their importance in adequate stormwater pollutant management implementation.
4. Implement and enhance actions to control 303(d) listed pollutants, pollutants of concern, and achieve Waste Load Allocations adopted under Total Maximum Daily Loads.
5. Implement more specific and comprehensive stormwater monitoring, including monitoring for 303(d) listed pollutants.

Public Process

Water Board staff conducted a series of stakeholder meetings and workshops with the Permittees and other interested parties to develop this Permit over the past 3 years. These meetings included Water Board staff, representatives of the Permittees, representatives of

environmental groups, homebuilders, private citizens, and other interested parties. The following is a summary of the lengthy stakeholder process.

(2004–2005) Water Board staff and the Bay Area Stormwater Management Agencies Association (BASMAA) agreed to develop a municipal regional stormwater permit. Board staff and BASMAA held monthly meetings to agree on the regional permit approach and developed concepts and ground rules for a Steering Committee. The Steering Committee for the Permit began regular monthly meetings, and there was agreement to form work groups to develop options for permit program components in table format.

(2006) Water Board staff, BASMAA, and nongovernmental groups met and discussed the Performance Standard (i.e., actions, implementation levels, and reporting requirements) tables from six workgroups. In addition to the Steering Committee, Work Group Stakeholder meetings focused on the six program elements to complete the Performance Standard Tables and discuss other issues in preparation for creating the first Draft Permit Provisions. Two large public workshops were held in November with all interested stakeholders to discuss Work Group products.

(2007) The Water Board held a public workshop in March to receive public input. Board staff distributed an Administrative Draft Permit dated May 1, 2007, held multiple meetings and received comment.

(2007- 2008) On December 14, 2007, Board staff distributed the Tentative Order for a 77-day written public comment period ending February 29, 2008. A public hearing for oral testimony was held on March 11, 2008. During the remainder of 2008 there were additional meetings with stakeholders, and Board staff worked on revisions to the Tentative Order and produced responses to both written comments received by February 29, 2008, and oral comments received at the March 11, 2008, hearing. The Revised Tentative Order for the MRP was released on February 11, 2009, and a May 13, 2009, hearing before the Water Board was scheduled. Written comments on the revisions to the Tentative Order were received until April 3, 2009.

(2009) After the May 2009 MRP Public Hearing, Water Board staff held numerous meetings with the Permittees (via the Bay Area Stormwater Management Agencies Association) and other key stakeholders including Save the Bay, NRDC, the Northern California Homebuilders, S.F. BayKeeper and the U.S. EPA. These meetings have been focused on discussion of revisions to the MRP Tentative Order in response to comments received, in an effort to resolve issues primarily related to Provisions C.3 New Development, C.8 Monitoring, C.10 Trash Load Reduction, C.11 Mercury Controls, C.12 PCBs Controls, and C.15 Exempt Non-Stormwater Discharges.

Implementation

It is the Water Board's intent that this Permit shall ensure attainment of applicable water quality objectives and protection of the beneficial uses of receiving waters and associated habitat. This Permit requires that discharges shall not cause exceedances of water quality objectives nor shall they cause certain conditions to occur that create a condition of nuisance or water quality impairment in receiving waters. Accordingly, the Water Board is

requiring that these standard requirements be addressed through the implementation of technically and economically feasible control measures to reduce pollutants in stormwater discharges to the maximum extent practicable as provided in Provisions C.1 through C.15 of this Permit and section 402(p) of the CWA. Compliance with the Discharge Prohibitions, Receiving Water Limitations, and Provisions of this Permit is deemed compliance with the requirements of this Permit. If these measures, in combination with controls on other point and nonpoint sources of pollutants, do not result in attainment of applicable water quality objectives, the Water Board may invoke Provision C.1. and may reopen this Permit pursuant to Provisions C.1 and C.15 of this Permit to impose additional conditions that require implementation of additional control measures.

Each of the Permittees is individually responsible for adoption and enforcement of ordinances and policies, for implementation of assigned control measures or best management practices (BMPs) needed to prevent or reduce pollutants in stormwater, and for providing funds for the capital, operation, and maintenance expenditures necessary to implement such control measures/BMPs within its jurisdiction. Each Permittee is also responsible for its share of the costs of the area-wide component of the countywide program to which the Permittee belongs. Enforcement actions concerning non-compliance with the Permit will be pursued against individual Permittee(s) responsible for specific violations of the Permit.

III. BACKGROUND

Early Permitting Approach

The federal Clean Water Act (CWA) was amended in 1987 to address urban stormwater runoff pollution of the nation's waters. One requirement of the amendment was that many municipalities throughout the United States were obligated for the first time to obtain National Pollutant Discharge Elimination System (NPDES) permits for discharges of urban runoff from their Municipal Separate Storm Sewer Systems (MS4s). In response to the CWA amendment (and the pending federal NPDES regulations which would implement the amendment), the Water Board issued a municipal storm water Phase I permits in the early 1990s. These permits were issued to the entire county-wide urban areas of Santa Clara, Alameda, San Mateo and Contra Costa Counties, rather than to individual cities over 100,000 population threshold. The cities chose to collaborate in countywide groups, to pool resources and expertise, and share information, public outreach and monitoring costs, among other tasks.

During the early permitting cycles, the county-wide programs developed many of the implementation specifics which were set forth in their Stormwater Pollution Prevention Management Plans (Plans). The permit orders were relatively simple documents that referred to the stormwater Plans for implementation details. Often specific aspects of permit and Plan implementation evolved during the five year permit cycle, with relatively significant changes approved at the Water Board staff level without significant public review and comment.

Merging Permit Requirements and Specific Requirements Previously Contained in Stormwater Management Plans

US EPA stormwater rules for Phase I stormwater permits envisioned a process in which municipal stormwater management programs contained the detailed BMP and specific level of implementation information, and are reviewed and approved by the permitting agency before the municipal NPDES stormwater permits are adopted. The current and previous permits established a definition of a stormwater management program and required each Permittee to submit an urban runoff management plan and annual work plans for implementing its stormwater management program. An advantage to this approach was that it provided flexibility for Permittees to tailor their stormwater management programs to reflect local priorities and needs. However, Water Board staff found it difficult to determine Permittees' compliance with the current permits, due to the lack of specific requirements and measurable outcomes of some required actions. Furthermore, federal stormwater regulations require that modifications to stormwater management programs, such as annual revisions to urban runoff management plans, be approved through a public process.

Recent court decisions have reiterated that federal regulations and State law require that the implementation specifics of Municipal Stormwater NPDES permits be adopted after adequate public review and comment, and that no significant change in the permit requirements except minor modifications can occur during the permit term without a similar level of public review and comment.

This Permit introduces a modification to these previous approaches by establishing the stormwater management program requirements and defining up front, as part of the Permit Development Process, the minimum acceptable elements of the municipal stormwater management program. The advantages of this approach are that it satisfies the public involvement requirements of both the federal Clean Water Act and the State Water Code. An advantage for Permittees and the public of this approach is that the permit requirements are known at the time of permit issuance and not left to be determined later through iterative review and approval of work plans. While it may still be necessary to amend the Permit prior to expiration, any need to this should be minimized.

This Permit does not include approval of all Permittees' stormwater management programs or annual reports as part of the administration of the Permit. To do so would require significantly increased staff resources. Instead, minimum measures have been established to simplify assessment of compliance and allow the public to more easily assess each Permittee's compliance. Each Permit provision and its reporting requirements are written with this in mind. That is, each provision establishes the required actions, minimum implementation levels (i.e., minimum percentage of facilities inspected annually, escalating enforcement, reporting requirements for tracking projects, number of monitoring sites, etc.), and specific reporting elements to substantiate that these implementation levels have been met. Water Board staff will evaluate each individual Permittee's compliance through annual report review and the audit process.

The challenge in drafting the Permit is to provide the flexibility described above considering the different sizes and resources while ensuring that the Permit is still enforceable. To achieve this, the Permit frequently prescribes minimum measurable

outcomes, while providing Permittees with flexibility in the approaches they use to meet those outcomes. Enforceability has been found to be a critical aspect of the Permit. To avoid these types of situations, a balance between flexibility and enforceability has been crafted into the Permit.

Current Permit Approach

In the previous permit issuances, the detailed actions to be implemented by the Permittees were contained in Stormwater Management Plans, which were separate from the NPDES permits, and incorporated by reference. Because those plans were legally an integral part of the permits and were subject to complete public notice, review and comment, this permit reissuance incorporates those plan level details in the permit, thus merging the Permittees' stormwater management plans into the permit in one document. This Permit specifies the actions necessary to reduce the discharge of pollutants in stormwater to the maximum extent practicable, in a manner designed to achieve compliance with water quality standards and objectives, and effectively prohibit non-stormwater discharges into municipal storm drain systems and watercourses within the Permittees' jurisdictions. This set of specific actions is equivalent to the requirements that in past permit cycles were included in a separate stormwater management plan for each Permittee or countywide group of Permittees. With this permit reissuance, that level of specific compliance detail is integrated into permit language and is not a separate document.

The Permit includes requirements for the following components:

- Municipal Operations
- New Development and Redevelopment
- Industrial and Commercial Site Controls
- Illicit Discharge and Elimination
- Construction Site Controls
- Public Information and Outreach
- Water Quality Monitoring
- Pesticides Toxicity Controls
- Trash Reduction
- Mercury Controls
- PCBs Controls
- Copper Controls
- Polybrominated Diphenyl Ethers (PBDE), Legacy Pesticides, and Selenium
- Exempt and Conditionally Exempt Discharges

IV. ECONOMIC ISSUES

Economic discussions of urban runoff management programs tend to focus on costs incurred by municipalities in developing and implementing the programs. This is appropriate, and these costs are significant and a major issue for the Permittees. However, when considering the cost of implementing the urban runoff programs, it is also important

to consider the alternative costs incurred by not fully implementing the programs, as well as the benefits which result from program implementation.

It is very difficult to ascertain the true cost of implementation of the Permittees' urban runoff management programs because of inconsistencies in reporting by the Permittees. Reported costs of compliance for the same program element can vary widely from Permittee to Permittee, often by a very wide margin that is not easily explained.[57] Despite these problems, efforts have been made to identify urban runoff management program costs, which can be helpful in understanding the costs of program implementation.

In 1999, United States Environmental Protection Agency (USEPA) reported on multiple studies it conducted to determine the cost of urban runoff management programs. A study of Phase II municipalities determined that the annual cost of the Phase II program was expected to be $9.16 per household. USEPA also studied 35 Phase I municipalities, finding costs to be similar to those anticipated for Phase II municipalities, at $9.08 per household annually.[58]

A study on program cost was also conducted by the Los Angeles Regional Water Quality Control Board (LARWQCB), where program costs reported in the municipalities' annual reports were assessed. The LARWQCB estimated that average per household cost to implement the MS4 program in Los Angeles County was $12.50.

The State Water Resources Control Board (State Water Board) also commissioned a study by the California State University, Sacramento to assess costs of the Phase I MS4 program. This study is current and includes an assessment of costs incurred by the City of Encinitas in implementing its program. Annual cost per household in the study ranged from $18-46, with the City of Encinitas representing the upper end of the range.[59] The cost of the City of Encinitas' program is understandable, given the City's coastal location, reliance on tourism, and consent decree with environmental groups regarding its program. For these reasons, as well as the general recognition the City of Encinitas receives for implementing a superior program, the City's program cost can be considered as the high end of the spectrum for Permittee urban runoff management program costs.

It is important to note that reported program costs are not all attributable to compliance with MS4 permits. Many program components, and their associated costs, existed before any MS4 permits were issued. For example, street sweeping and trash collection costs cannot be solely or even principally attributable to MS4 permit compliance, since these practices have long been implemented by municipalities. Therefore, true program cost resulting from MS4 permit requirements is some fraction of reported costs. The California State University, Sacramento study found that only 38% of program costs are new costs fully attributable to MS4 permits. The remainder of program costs were either pre-existing or resulted from enhancement of pre-exiting programs.[60] The County of Orange found that even lesser amounts of program costs are solely attributable to MS4 permit compliance, reporting that the amount attributable to implement its Drainage Area Management Plan, its municipal

[57] LARWQCB, 2003. Review and Analysis of Budget Data Submitted by the Permittees for Fiscal Years 2000-2003.p.2
[58] Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68791-68792.
[59] State Water Board, 2005. NPDES Stormwater Cost Survey. P. ii
[60] Ibid. P. 58.

stormwater permit requirements, is less than 20% of the total budget. The remaining 80% is attributable to pre-existing programs.[61]

It is also important to acknowledge that the vast majority of costs that will be incurred as a result of implementing the Order are not new. Urban runoff management programs have been in place in this region for over 15 years. Any increase in cost to the Permittees will be incremental in nature.

Urban runoff management programs cannot be considered in terms of their costs only. The programs must also be viewed in terms of their value to the public. For example, household willingness to pay for improvements in fresh water quality for fishing and boating has been estimated by USEPA to be $158-210.[62] This estimate can be considered conservative, since it does not include important considerations such as marine waters benefits, wildlife benefits, or flood control benefits. The California State University, Sacramento study corroborates USEPA's estimates, reporting annual household willingness to pay for statewide clean water to be $180.[63] When viewed in comparison to household costs of existing urban runoff management programs, these household willingness to pay estimates exhibit that per household costs incurred by Permittees to implement their urban runoff management programs remain reasonable.

Another important way to consider urban runoff management program costs is to consider the implementation cost in terms of costs incurred by not improving the programs. Urban runoff in southern California has been found to cause illness in people bathing near storm drains.[64] A study of south Huntington Beach and north Newport Beach found that an illness rate of about 0.8% among bathers at those beaches resulted in about $3 million annually in health-related expenses.[65] Extrapolation of such numbers to the beaches and other water contact recreation in San Francisco Bay and the tributary creeks of the region could result in huge expenses to the public.

Urban runoff and its impact on receiving waters also places a cost on tourism. the California Division of Tourism has estimated that each out-of-state visitor spends $101.00 a day. The experience of Huntington Beach provides an example of the potential economic impact of poor water quality. Approximately 8 miles of Huntington Beach were closed for two months in the middle of summer of 1999, impacting beach visitation and the local economy.

Finally, it is important to consider the benefits of urban runoff management programs in conjunction with their costs. A recent study conducted by USC/UCLA assessed the costs and benefits of implementing various approaches for achieving compliance with the MS4 permits in the Los Angeles Region. The study found that non-structural systems would cost $2.8 billion but provide $5.6 billion in benefit. If structural systems were determined to be needed, the study found that total costs would be $5.7 to $7.4 billion, while benefits could

[61] County of Orange, 2000. A NPDES Annual Progress Report. P. 60. More current data from the County of Orange is not used in this discussion because the County of Orange no longer reports such information.

[62] Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68793.

[63] State Water Board, 2005. NPDES Stormwater Cost Survey. P. iv.

[64] Haile, R.W., et al, 1996. An Epidemiological Study of Possible Adverse Health Effects of Swimming in Santa Monica Bay. Santa Monica Bay Restoration Project.

[65] Los Angeles Times, May 2, 2005. Here's What Ocean Germs Cost You: A UC Irvine Study Tallies the Cost of Treatment and Lost Wages for Beachgoers Who Get Sick.

reach $18 billion.[66] Costs are anticipated to be borne over many years – probably ten years at least. As can be seen, the benefits of the programs are expected to considerably exceed their costs. Such findings are corroborated by USEPA, which found that the benefits of implementation of its Phase II storm water rule would also outweigh the costs.[67]

V. LEGAL AUTHORITY

The following statutes, regulations, and Water Quality Control Plans provide the basis for the requirements of Order No. R2-2009-0074: CWA, California Water Code (CWC), 40 CFR Parts 122, 123, 124 (National Pollutant Discharge Elimination System Permit Application Regulations for Storm Water Discharges, Final Rule), Part II of 40 CFR Parts 9, 122, 123, and 124 (National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule), Water Quality Control Plan – Ocean Waters of California (California Ocean Plan), Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), 40 CFR 131Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California; Rule (California Toxics Rule), and the California Toxics Rule Implementation Plan.

The legal authority citations below generally apply to directives in Order No. R2-2009-0074, and provide the Water Board with ample underlying authority to require each of the directives of Order No. R2-2009-0074.. Legal authority citations are also provided with each permit provision in this Fact Sheet.

CWA 402(p)(3)(B)(ii) – The CWA requires in section 402(p)(3)(B)(ii) that permits for discharges from municipal storm sewers "shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers."

CWA 402(p)(3)(B)(iii) – The CWA requires in section 402(p)(3)(B)(iii) that permits for discharges from municipal storm sewers "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."

40 CFR 122.26(d)(2)(i)(B,C,E, and F) – Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B,C,D,E, and F) require that each Permittee's permit application "shall consist of: (i) Adequate legal authority. A demonstration that the applicant can operate pursuant to legal authority established by statute, ordinance or series of contracts which authorizes or enables the applicant at a minimum to: […] (B) Prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer; (C) Control through ordinance, order or similar means the discharge to a municipal separate storm sewer of spills, dumping or disposal of materials other than storm water; (D) Control through interagency agreements among co-applicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system; (E) Require compliance with condition in ordinances, permits, contracts or orders; and (F) Carry out all

[66] LARWQCB, 2004. Alternative Approaches to Stormwater Control.
[67] Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68791.

inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer."

40 CFR 122.26(d)(2)(iv) – Federal NPDES regulation 40 CFR 122.26(d)(2)(iv) requires "a comprehensive planning process which involves public participation and where necessary intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate. The program shall also include a description of staff and equipment available to implement the program. […] Proposed programs may impose controls on a system wide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. […] Proposed management programs shall describe priorities for implementing controls."

40 CFR 122.26(d)(2)(iv)(A -D) – Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A - D) require municipalities to implement controls to reduce pollutants in urban runoff from new development and significant redevelopment, construction, and commercial, residential, industrial, and municipal land uses or activities. Control of illicit discharges is also required.

CWC 13377 – CWC section 13377 requires that "Notwithstanding any other provision of this division, the state board or the regional boards shall, as required or authorized by the CWA, as amended, issue waste discharge requirements and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with anymore stringent effluent standards or limitation necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance."

Order No. R2-2009-0074 is an essential mechanism for achieving the water quality objectives that have been established for protecting the beneficial uses of the water resources in the San Francisco Bay Region. Federal NPDES regulation 40 CFR 122.44(d)(1) requires MS4 permits to include any requirements necessary to "achieve water quality standards established under CWA section 303, including State narrative criteria for water quality." The term "water quality standards" in this context refers to a water body's beneficial uses and the water quality objectives necessary to protect those beneficial uses, as established in the Basin Plan.

State Mandates

This Permit does not constitute an unfunded local government mandate subject to subvention under Article XIIIB, Section (6) of the California Constitution for several reasons, including, but not limited to, the following. First, this Permit implements federally mandated requirements under CWA section 402, subdivision (p)(3)(B). (33 U.S.C. § 1342(p)(3)(B).) This includes federal requirements to effectively prohibit non-stormwater discharges, to reduce the discharge of pollutants to the maximum extent practicable, and to include such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. Federal cases have held that these provisions require the development of permits and permit provisions on a case-by-case basis to satisfy federal requirements. (Natural Resources Defense Council, Inc. v. USEPA

(9th Cir. 1992) 966 F.2d 1292, 1308, fn. 17.) The authority exercised under this Permit is not reserved state authority under the CWA's savings clause (cf. Burbank v. State Water Resources Control Bd. (2005) 35 Cal.4th 613, 627-628 [relying on 33 U.S.C. § 1370, which allows a state to develop requirements that are not less stringent than federal requirements]), but instead, is part of a federal mandate to develop pollutant reduction requirements for MS4. To this extent, it is entirely federal authority that forms the legal basis to establish the permit provisions. (See, City of Rancho Cucamonga v. Regional Water Quality Control Bd.-Santa Ana Region (2006) 135 Cal.App.4th 1377, 1389; Building Industry Association of San Diego County v. State Water Resources Control Bd. (2004) 124 Cal.App.4th 866, 882-883.)

Likewise, the provisions of this Permit to implement total maximum daily loads (TMDLs) are federal mandates. The CWA requires TMDLs to be developed for waterbodies that do not meet federal water quality standards. (33 U.S.C. § 1313(d).) Once USEPA or a state develops a TMDL, federal law requires that permits must contain effluent limitations consistent with the assumptions of any applicable WLA. (40 CFR 122.44(d)(1)(vii)(B).)

Second, the local agencies' (Permittees') obligations under this Permit are similar to, and in many respects less stringent than, the obligations of nongovernmental dischargers who are issued NPDES permits for stormwater discharges. With a few inapplicable exceptions, the CWA regulates the discharge of pollutants from point sources (33 U.S.C. § 1342) and the Porter-Cologne regulates the discharge of waste (Water Code, section 13263), both without regard to the source of the pollutant or waste. As a result, the costs incurred by local agencies to protect water quality reflect an overarching regulatory scheme that places similar requirements on governmental and nongovernmental dischargers. (See County of Los Angeles v. State of California (1987) 43 Cal.3d 46, 57-58 [finding comprehensive workers compensation scheme did not create a cost for local agencies that was subject to state subvention].)

The CWA and the Porter-Cologne Water Quality Control Act largely regulate stormwater with an even hand, but to the extent that there is any relaxation of this evenhanded regulation, it is in favor of the local agencies. Except for MS4s, the CWA requires point source dischargers, including discharges of stormwater associated with industrial or construction activity, to comply strictly with water quality standards. (33 U.S.C. § 1311(b)(1)(C), Defenders of Wildlife v. Browner (1999) 191 F.3d 1159, 1164-1165 [noting that industrial stormwater discharges must strictly comply with water quality standards].) As discussed in prior State Water Board decisions, this Permit does not require strict compliance with water quality standards. (SWRCB Order No. WQ 2001-15, p. 7.) The Permit, therefore, regulates the discharge of waste in municipal stormwater more leniently than the discharge of waste from nongovernmental sources.

Third, the Permittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with this Permit. The fact sheet demonstrates that numerous activities contribute to the pollutant loading in the MS4. Permittees can levy service charges, fees, or assessments on these activities, independent of real property ownership. (See, e.g., Apartment Association of Los Angeles County, Inc. v. City of Los Angeles (2001) 24 Cal.4th 830, 842 [upholding inspection fees associated with renting property].) The ability of a local agency to defray the cost of a program without raising

taxes indicates that a program does not entail a cost subject to subvention. (County of Fresno v. State of California (1991) 53 Cal.3d 482, 487-488.)

Fourth, the Permittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in CWA section 301, subdivision (a) (33 U.S.C. § 1311(a)) and in lieu of numeric restrictions on their discharges. To the extent Permittees have voluntarily availed themselves of the Permit, the program is not a state mandate. (Accord County of San Diego v. State of California (1997) 15 Cal.4th 68, 107-108.) Likewise, the Permittees have voluntarily sought a program-based municipal stormwater permit in lieu of a numeric limits approach. (See City of Abilene v. USEPA (5th Cir. 2003) 325 F.3d 657, 662-663 [noting that municipalities can choose between a management permit or a permit with numeric limits].) The Permittees' voluntary decision to file a report of waste discharge proposing a program-based permit is a voluntary decision not subject to subvention. (See Environmental Defense Center v. USEPA (9th Cir. 2003) 344 F.3d 832, 845-848.)

Fifth, the Permittees' responsibility for preventing discharges of waste that can create conditions of pollution or nuisance from conveyances that are within their ownership or control under State law predates the enactment of Article XIIIB, Section (6) of the California Constitution.

This Permit is based on the federal CWA, the Porter-Cologne Water Quality Control Act (Division 7 of the CWC, commencing with Section 13000), applicable State and federal regulations, all applicable provisions of statewide Water Quality Control Plans and Policies adopted by the State Water Board, the Basin Plan, the California Toxics Rule, and the California Toxics Rule Implementation Plan.

Discussion: In 1987, Congress established CWA Amendments to create requirements for storm water discharges under the NPDES program, which provides for permit systems to regulate the discharge of pollutants. Under the Porter-Cologne Water Quality Control Act, the State Water Board and Regional Water Quality Control Boards (Water Boards) have primary responsibility for the coordination and control of water quality, including the authority to implement the CWA. Porter-Cologne (section 13240) directs the Water Boards to set water quality objectives via adoption of Basin Plans that conform to all state policies for water quality control. As a means for achieving those water quality objectives, Porter-Cologne (section 13243) further authorizes the Water Boards to establish waste discharge requirements (WDRs) to prohibit waste discharges in certain conditions or areas. Since 1990, the Water Board has issued area-wide MS4 NPDES permits. The Permit will re-issue Order Nos. 99-058, 99-059, 01-024, R2-2003-0021, R2-2003-0034 to comply with the CWA and attain water quality objectives in the Basin Plan by limiting the contributions of pollutants conveyed by urban runoff. Further discussions of the legal authority associated with the prohibitions and directives of the Permit are provided in section V. of this document.

This Permit supersedes NPDES Permit Nos. CAS029718, CAS029831, CAS029912, CAS029921, CAS612005, and CAS612006.

Basin Plan

The Urban Runoff Management, Comprehensive Control Program section of the Basin Plan requires the Permittees to address existing water quality problems and prevent new problems associated with urban runoff through the development and implementation of a comprehensive control program focused on reducing current levels of pollutant loading to storm drains to the maximum extent practicable. The Basin Plan comprehensive program requirements are designed to be consistent with federal regulations (40 CFR Parts 122-124) and are implemented through issuance of NPDES permits to owners and operators of MS4s. A summary of the regulatory provisions is contained in Title 23 of the California Code of Regulations at section 3912. The Basin Plan identifies beneficial uses and establishes water quality objectives for surface waters in the Region, as well as effluent limitations and discharge prohibitions intended to protect those uses. This Permit implements the plans, policies, and provisions of the Water Board's Basin Plan.

Statewide General Permits

The State Water Board has issued NPDES general permits for the regulation of stormwater discharges associated with industrial activities and construction activities. To effectively implement the New Development (and significant redevelopment) and Construction Controls, Illicit Discharge Controls, and Industrial and Commercial Discharge Controls components in this Permit, the Permittees will conduct investigations and local regulatory activities at industrial and construction sites covered by these general permits. However, under the CWA, the Water Board cannot delegate its own authority to enforce these general permits to the Permittees. Therefore, Water Board staff intends to work cooperatively with the Permittees to ensure that industries and construction sites within the Permittees' jurisdictions are in compliance with applicable general permit requirements and are not subject to uncoordinated stormwater regulatory activities.

Regulated Parties

Each of the Permittees listed in this Permit owns or operates a MS4, through which it discharges urban runoff into waters of the United States within the San Francisco Bay Region. These MS4s fall into one or more of the following categories: (1) a medium or large MS4 that services a population of greater than 100,000 or 250,000 respectively; or (2) a small MS4 that is "interrelated" to a medium or large MS4; or (3) an MS4 which contributes to a violation of a water quality standard; or (4) an MS4 which is a significant contributor of pollutants to waters of the United States.

Permit Coverage

The Permittees each have jurisdiction over and maintenance responsibility for their respective MS4s in the Region. Federal, State or regional entities within the Permittees' boundaries, not currently named in this Permit, operate storm drain facilities and/or discharge stormwater to the storm drains and watercourses covered by this Permit. The Permittees may lack jurisdiction over these entities. Consequently, the Water Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. The Water Board will consider such facilities for coverage under NPDES permitting pursuant to USEPA Phase II stormwater regulations. Under Phase II, the Water

Board intends to permit these federal, State, and regional entities through use of a Statewide Phase II NPDES General Permit.

Discussion: Section 402 of the CWA prohibits the discharge of any pollutant to waters of the United States from a point source, unless that discharge is authorized by a NPDES permit. Though urban runoff comes from a diffuse source, it is discharged through MS4s, which are point sources under the CWA. Federal NPDES regulation 40 CFR 122.26(a) (iii) and (iv) provide that discharges from MS4s, which service medium or large populations greater than 100,000 or 250,000 respectively, shall be required to obtain a NPDES permit. Federal NPDES regulation 40 CFR 122.26(a)(v) also provides that a NPDES permit is required for "A [storm water] discharge which the Director, or in States with approved NPDES programs, either the Director or the USEPA Regional Administrator, determines to contribute to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States." Such sources are then designated into the program.

VI. PERMIT PROVISIONS

A. Discharge Prohibitions

Prohibition A.1. Legal Authority – CWA 402(p)(3)(B)(ii) – The CWA requires in section 402(p)(3)(B)(ii) that permits for discharges from municipal storm sewers "shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers."

Prohibition A.2. Legal Authority – San Francisco Bay Basin Plan, 2006 Revision, Chapter 4 Implementation, Table 4-1, Prohibition 7.

B. Receiving Water Limitations

Receiving Water Limitation B.1. Legal Authority – Receiving Water Limitations are retained from previous Municipal Stormwater Runoff NPDES permits. They reflect applicable water quality standards from the Basin Plan.

Receiving Water Limitation B.2. Legal Authority – Receiving Water Limitations are retained from previous Municipal Stormwater Runoff NPDES permits. They reflect applicable water quality standards from the Basin Plan.

C. Provisions

C.1. Compliance with Discharge Prohibitions and Receiving Water Limitations

Legal Authority

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: The Water Board's Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) contains the following waste discharge prohibition: "The discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of pollution, contamination, or nuisance as defined in California Water Code Section 13050, is prohibited."

California Water Code section 13050(l) states "(1) 'Pollution' means an alteration of the quality of waters of the state by waste to a degree which unreasonably affects either of the following: (A) The water for beneficial uses. (B) Facilities which serve beneficial uses. (2) 'Pollution' may include "contamination."

California Water Code section 13050(k) states "'Contamination' means an impairment of the quality of waters of the state by waste to a degree which creates a hazard to public health through poisoning or through the spread of disease. 'Contamination' includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected."

California Water Code section 13050(m) states "'Nuisance' means anything which meets all of the following requirements: (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal. (3) Occurs during, or as a result of, the treatment or disposal of wastes."

California Water Code section 13241 requires each water board to "establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance […]."

California Water Code Section 13243 provides that a water board, "in a water quality control plan or in waste discharge requirements, may specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted."

California Water Code Section 13263(a) provides that waste discharge requirements prescribed by the water board implement the Basin Plan.

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A -D) require municipalities to implement controls to reduce pollutants in urban runoff from commercial, residential, industrial, and construction land uses or activities.

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(A -D) require municipalities to have legal authority to control various discharges to their MS4.

Federal NPDES regulation 40 CFR 122.44(d)(1) requires municipal storm water permits to include any requirements necessary to "[a]chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality."

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to "control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality."

State Water Resources Control Board ("State Water Board") Order WQ 1999-05, is a precedential order requiring that municipal stormwater permits achieve water quality standards and water quality standard based discharge prohibitions through the implementation of control measures, by which Permittees' compliance with the permit can be determined. The State Water Board Order specifically requires that Provision C.1 include language that Permittees shall comply with water quality standards based discharge prohibitions and receiving water limitations through timely implementation of control measures and other actions to reduce pollutants in the discharges. State Water Board Order WQ 2001-15 refines Order 1999-05 by requiring an iterative approach to compliance with water quality standards that involves ongoing assessments and revisions.

C.2. Municipal Operations

Legal Authority

The following legal authority applies to Provision C.2:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), California Water Code (CWC) section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(1) requires, "A description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(3) requires, "A description for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters of discharges from municipal storm sewer systems, including pollutants discharged as a result of deicing activities."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(4) requires, "A description of procedures to assure that flood management projects assess the impacts on the water quality of receiving waterbodies and that existing structural flood control devices have been evaluated to determine if retrofitting the device to provide additional pollutant removal from storm water is feasible."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(5) requires, "A description of a program to monitor pollutants in runoff from operating or closed municipal landfills or other treatment, storage or disposal facilities for municipal waste, which shall identify priorities and procedures for inspections and establishing and implementing control measures for such discharges."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(6) requires, "A description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewers associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities."

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to "control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality."

Fact Sheet Findings in Support of Provision C.2

C.2-1 Municipal maintenance activities are potential sources of pollutants unless appropriate inspection, pollutant source control, and cleanup measures are implemented during routine maintenance works to minimize pollutant discharges to storm drainage facilities.

Sediment accumulated on paved surfaces, such as roads, parking lots, parks, sidewalks, landscaping, and corporation yards, is the major source of point source pollutants found in urban runoff. Thus, Provision C.2 requires the Permittees to designate minimum BMPs for all municipal facilities and activities as part of their ongoing pollution prevention efforts as set forth in this Permit. Such prevention measures include, but are not limited to, activities as described below. The work of municipal maintenance personnel is vital to minimize stormwater pollution, because personnel work directly on municipal storm drains and other municipal facilities. Through work such as inspecting and cleaning storm drain drop inlets and pipes and conducting municipal construction and maintenance activities upstream of the storm drain, municipal maintenance personnel are directly responsible for preventing and removing pollutants from the storm drain. Maintenance personnel also play an important role in educating the public and in reporting and cleaning up illicit discharges.

C.2-2 Road construction and other activities can disturb the soil and drainage patterns to streams in undeveloped areas, causing excess runoff and thereby erosion and the release of sediment. In particular, poorly designed roads can act as man-made drainages that carry runoff and sediment into natural streams, impacting water quality.

Provision C.2 also requires the Permittees to implement effective BMPs for the following rural works maintenance and support activities: (a) Road design, construction, maintenance, and repairs in rural areas that prevent and control road-related erosion and sediment transport; (b)Identification and prioritization of rural roads maintenance on the basis of soil erosion potential, slope steepness, and stream habitat resources; (c) Road and culvert construction designs that do not impact creek functions. New or replaced culverts shall not create a migratory fish passage barrier, where migratory fish are present, or lead to stream instability; (d) Development and implement an inspection program to maintain roads structural integrity and prevent impacts on water quality; (e) Provide adequate maintenance of rural roads adjacent to streams and riparian habitat to reduce erosion, replace damaging shotgun culverts, re-grade roads to slope outward where consistent with road engineering safety standards, and install water bars; and (f) When replacing existing culverts or redesigning new culverts or bridge crossings use measures to reduce erosion, provide fish passage and maintain natural stream geomorphology in a stable manner.

Road construction, culvert installation, and other rural maintenance activities can disturb the soil and drainage patterns to streams in undeveloped areas, causing excess runoff and thereby erosion and the release of sediment. Poorly

designed roads can act as preferential drainage pathways that carry runoff and sediment into natural streams, impacting water quality. In addition, other rural public works activities, including those the BMP approach would address, have the potential to significantly affect sediment discharge and transport within streams and other waterways, which can degrade the beneficial uses of those waterways. This Provision would help ensure that these impacts are appropriately controlled.

Specific Provision C.2 Requirements

Provision C.2.a-f. (Operation and Maintenance of Municipal Separate Storm Sewer Systems (MS4) facilities) requires that the Permittees implement appropriate pollution control measures during maintenance activities and to inspect and, if necessary, clean municipal facilities such as conveyance systems, pump stations, and corporation yards, before the rainy season. The requirements will assist the Permittees to prioritize tasks, implement appropriate BMPs, evaluate the effectiveness of the implemented BMPs, and compile and submit annual reports.

Provision C.2.d. (Stormwater Pump Stations) In late 2005, Board staff investigated the occurrence of low salinity and dissolved oxygen conditions in Old Alameda Creek (Alameda County) and Alviso Slough (Santa Clara County) in September and October of 2005. Board staff became aware of this problem in their review of receiving water and discharge sampling conducted by the U.S. Geological Survey as part of its routine monitoring on discharges associated with the former salt ponds managed by the U.S. Fish and Wildlife Service in Santa Clara County and the California Department of Fish and Game in Alameda County.

In the case of Old Alameda Creek, discharge of black-colored water from the Alvarado pump station to the slough was observed at the time of the data collection on September 7, 2005, confirming dry weather urban runoff as the source of the documented violations of the 5 mg/L dissolved oxygen water quality objective. Such conditions were measured again on September 21, 2005.

On October 17, 2005, waters in Alviso Slough were much less saline than the salt ponds and had the lowest documented dissolved oxygen of the summer, suggesting a dry weather urban runoff source. The dissolved oxygen sag was detected surface to bottom at 2.3 mg/L at a salinity of less than 1 part per thousand (ppt), mid-day, when oxygen levels should be high at the surface. The sloughs have a typical depth of 6 feet.

Board staff's investigations of these incidents, documented in a memorandum,[68] found that "storm water pump stations, universally operated by automatic float triggers, have been confirmed as the cause in at least one instance, and may represent an overlooked source of controllable pollution to the San Francisco Bay Estuary and its tidal sloughs. . . . the discharges of dry weather urban runoff from these pump stations are not being

[68] Internal Water Board Memo dated December 2, 2005: "Dry Weather Urban Weather Urban Runoff Causing or Contributing to Water Quality Violations: Low Dissolved Oxygen (DO) in Old Alameda Creek and Alviso Slough"

managed to protect water quality, and [that] surveillance monitoring has detected measurable negative water quality consequences of this current state of pump station management."

Pump station discharges of dry weather urban runoff can cause violations of water quality objectives. These discharges are controllable point sources of pollution that are virtually unregulated. The Water Board needs a complete inventory of dry weather urban runoff pump stations and to require BMP development and implementation for these discharges now. In the long term, Water Board staff should prioritize the sites from the regional inventory for dry weather diversion to sanitary sewers and encourage engineering feasibility studies to accomplish the diversions in a cost-effective manner. Structural treatment alternatives should be explored for specific pump stations.

To address the short term goals identified in the previous paragraph, Provision C.2.g. requires the Permittees to implement the following measures to reduce pollutant discharges to stormwater runoff from Permittee-owned or operated pump stations:

1. Establish an inventory of pump stations within each Permittee's jurisdiction, including pump station locations and key characteristics, and inspection frequencies.
2. Inspect these pump stations regularly, but at least two times a year, to address water quality problems, including trash control and sediment and debris removal.
3. Inspect trash racks and oil absorbent booms at pump stations in the first business day after ¼-inch within 24 hours and larger storm events. Remove debris in trash racks and replace oil absorbent booms, as needed.

C.3. New Development and Redevelopment

Legal Authority

Broad Legal Authority: CWA Sections 402(p)(3)(B)(ii-iii), CWA Section 402(a), CWC Section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F), 40 CFR 131.12, and 40 CFR 122.26(d)(2)(iv).

Fact Sheet Findings in Support of Provision C.3

C.3-1 Urban development begins at the land use planning phase; therefore, this phase provides the greatest cost-effective opportunities to protect water quality in new development and redevelopment. When a Permittee incorporates policies and principles designed to safeguard water resources into its General Plan and development project approval processes, it has taken a critical step toward the preservation and most of local water resources for current and future generations.

C.3-2 Provision C.3. is based on the assumption that Permittees are responsible for considering potential stormwater impacts when making planning and land use decisions. The goal of Provision C.3. is for Permittees to use their planning authority to include appropriate source control, site design, and stormwater treatment measures to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flow from new development and redevelopment projects. This goal is to be accomplished primarily through the implementation of low impact development (LID) techniques. Neither Provision C.3. nor any of its requirements are intended to restrict or control local land use decision-making authority.

C.3-3 Certain control measures implemented or required by Permittees for urban runoff management might create a habitat for vectors (e.g., mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperative efforts among Permittees, local vector control agencies, Water Board staff, and the State Department of Public Health are necessary to minimize potential nuisances and public health impacts resulting from vector breeding.

C.3-4 The Water Board recognized in its Policy on the Use of Constructed Wetlands for Urban Runoff Pollution Control (Resolution No. 94-102) that urban runoff treatment wetlands that are constructed and operated pursuant to that Resolution and are constructed outside a creek or other receiving water are stormwater treatment systems and, as such, are not waters of the United States subject to regulation pursuant to Sections 401 or 404 of the federal Clean Water Act. Water Board staff is working with the California Department of Fish and Game (CDFG) and U.S. Fish and Wildlife Service (USFWS) to identify how maintenance for stormwater treatment controls required under permits such as this Permit can be appropriately streamlined, given CDFG and USFWS requirements, and particularly those that address special status species. This Permit requires Permittees to ensure that constructed wetlands installed by

Regulated Projects are consistent with Resolution No. 94-102 and the operation and maintenance requirements contained therein.

C.3-5 The Permit requires Permittees to ensure that onsite, joint, and offsite stormwater treatment systems and HM controls installed by Regulated Projects are properly operated and maintained for the life of the projects. In cases where the responsible parties for the treatment systems or HM controls have worked diligently and in good faith with the appropriate state and federal agencies to obtain approvals necessary to complete maintenance activities for the treatment systems or HM controls, but these approvals are not granted, the Permittees shall be considered by the Water Board to be in compliance with Provision C.3.h.iii. of the Permit.

Specific Provision C.3 Requirements

Provision C.3.a. (New Development and Redevelopment Performance Standard Implementation) sets forth essentially the same legal authority, development review and permitting, environmental review, training, and outreach requirements that are contained in the existing permits. This Provision also requires the Permittees to encourage all projects not regulated by Provision C.3., but that are subject to the Permittees' planning, building, development , or other comparable review, to include adequate source control and site design measures, which include discharge of appropriate wastestreams to the sanitary sewer, subject to the local sanitary agency's authority and standards. Lastly, this Provision requires Permittees to revise, as necessary, their respective General Plans to integrate water quality and watershed protection with water supply, flood control, habitat protection, groundwater recharge, and other sustainable development principles and policies. Adequate implementation time has been allocated to Provisions C.3.a.i.(6)-(8), which may be considered new requirements.

Provision C.3.b. (Regulated Projects) establishes the different categories of new development and redevelopment projects that Permittees must regulate under Provision C.3. These categories are defined on the basis of the land use and the amount of impervious surface created and/or replaced by the project because all impervious surfaces contribute pollutants to stormwater runoff and certain land uses contribute more pollutants. Impervious surfaces can neither absorb water nor remove pollutants as the natural, vegetated soil they replaced can. Also, urban development creates new pollution by bringing higher levels of car emissions that are aerially deposited, car maintenance wastes, pesticides, household hazardous wastes, pet wastes, and trash, which can all be washed into the storm sewer.

Provision C.3.b.ii.(1) lists Special Land Use Categories that are already regulated under the current stormwater permits. Therefore, extra time is not necessary for the Permittees to comply with this Provision, so the Permit Effective Date is set as the required implementation date. For these categories, the impervious surface threshold (for classification as a Regulated Project subject to Provision C.3.) will be decreased from the current 10,000 ft^2 to 5,000 ft^2 beginning two years from the Permit Effective Date. These special land use categories represent land use types

that may contribute more polluted stormwater runoff. Regulation of these special land use categories at the lower impervious threshold of 5,000 square feet is considered the maximum extent practicable and is consistent with State Board guidance, court decisions, and other Water Boards' requirements. In the precedential decision contained in its WQ Order No. 2000-11, the State Board upheld the SUSMP (Standard Urban Stormwater Mitigation Plan) requirements issued by the Los Angeles Water Board's Executive Officer on March 8, 2000, and found that they constitute MEP for addressing pollutant discharges resulting from Priority Development Projects. The State Board re-affirmed that SUSMP requirements constitute MEP in their Order WQ 2001-15. Provision C.3.b.ii.(1)'s requirement that development projects in the identified Special Land Use Categories adding and/or replacing > 5000 ft^2 of impervious surface shall install hydraulically sized stormwater treatment systems is consistent with the SUSMP provisions upheld by the State Board. Provision C.3.b.ii.(1) is also consistent with Order No. R9-2007-0001 issued by the San Diego Water Board, Order Nos. R4-2009-0057 and R4-2001-182 issued by the Los Angeles Water Board, Order No. 2009-0030 issued by the Santa Ana Water Board, and State Board's Order WQ 2003-0005 issued to Phase II MS4s. Under Order WQ 2003-0005, Phase II MS4s with populations of 50,000 and greater must apply the lower 5000 ft^2 threshold for requiring stormwater treatment systems by April 2008. The MRP allows two years from the MRP effective date for the Permittees to implement the lower 5000 ft^2 threshold for the special land use categories, three and half years later than the Phase II MS4s. However, the additional time is necessary for the Permittees to revise ordinances and permitting procedures and conduct training and outreach.

This Provision contains a "grandfathering" clause, which allows any private development project in a special land use category for which a planning application has been deemed complete by a Permittee on or before the Permit effective date to be exempted from the lower 5,000 square feet impervious surface threshold (for classification as a Regulated Project) as long as the project applicant is diligently pursuing the project. Diligent pursuance may be demonstrated by the project applicant's submittal of supplemental information to the original application, plans, or other documents required for any necessary approvals of the project by the Permittee. If during the time period between the Permit effective date and the required implementation date of December 1, 2011, for the 5000 square feet threshold, the project applicant has not taken any action to obtain the necessary approvals from the Permittee, the project will then be subject to the lower 5000 square feet impervious surface threshold specified in Provision C.3.b.ii.(1).

For any private development project in a special land use category with an application deemed complete after the Permit effective date, the lower 5000 square feet impervious surface threshold (for classification as a Regulated Project) shall not apply if the project applicant has received final discretionary approval for the project before the required implementation date of December 1, 2011 for the 5000 square feet threshold.

Previous stormwater permits also used the "application deemed complete" date as the date for determining Provision C.3. applicability, but it was tied to the implementation date for new requirements and not the Permit effective date. The Permit Streamlining Act requires that a public agency must determine whether a permit application is complete within 30 days after receipt; if the public agency does not make this determination, the application is automatically deemed complete after 30 days. Data we have collected from audits and file reviews as well as reported to us by Permittees confirm that in many cases, the development permit applications have indeed not been reviewed for compliance with Provision C.3. requirements and yet have automatically been deemed complete 30 days after the application submittal date. As soon as the Permit is adopted, there is certainty about any new requirements that must be implemented during the Permit term. Therefore, the "application deemed complete" date should only be used to exempt projects that have reached this milestone by the Permit effective date and not years later at a new requirement's implementation date. However, this change requires consideration of those applications that are deemed complete after the Permit effective date. Because there is certainty with regard to new requirements as soon as the Permit becomes effective, we have tied the "final discretionary approval" date to a new requirement's implementation date for determining whether to exempt the projects with applications deemed complete after the Permit effective date. After a project receives "final discretionary approval" it would be too late in the permitting process to implement new requirements, particularly since this type of approval requires actions by city councils or boards of supervisors. Therefore, the "grandfathering" language is a hybrid that makes use of both the "application deemed complete" date and the "final discretionary approval" date, two known and recognized milestones in development planning.

As for private projects, public projects should be far enough along in the design and approval process to warrant being grandfathered and essentially exempted from complying with the lower 5000 ft^2 threshold when it becomes effective. Previous stormwater permits grandfathered projects that only had funds committed by the new threshold's effective date, which was too early because projects can be held for years before design can begin, well after funding commitments have been made. Conversely, application of the grandfathering exemption to projects that have construction scheduled to begin by the threshold effective date (or 2 years after the MRP effective date) may be too late in the permitting process to implement new threshold requirements, particularly since this type of approval requires actions by city councils or boards of supervisors. Therefore, the Permit provides the grandfathering exemption for projects that have construction set to begin within 1 year of the threshold effective date (or 3 years after the MRP effective date).

Provisions C.3.b.ii.(2)-(3) describe land use categories that are already regulated under the current stormwater permits; therefore, extra time is not necessary for the Permittees to comply with these Provisions and the implementation date is the Permit effective date. Because the Vallejo Permittees do not have post-

construction requirements in their current stormwater permit, the Permit allows an extra year for them to comply with these Provisions.

Provision C.3.b.ii.(4) applies to road projects adding and/or replacing 10,000 ft^2 of impervious surface, which include the construction of new roads and sidewalks and bicycle lanes built as part of the new roads; widening of existing roads with additional traffic lanes; and construction of impervious trails that are greater than 10 feet wide or are creekside (within 50 feet of the top of bank). Although widening existing roads with bike lanes and sidewalks increases impervious surface and therefore increases stormwater pollutants because of aerial deposition, they have been excluded from this Provision because we recognize the greater benefit that bike lanes and sidewalks provide by encouraging less use of automobiles. Likewise, this Provision also contains specific exclusions for: sidewalks built as part of a new road and built to direct stormwater runoff to adjacent vegetated areas; bike lanes built as part of a new road but not hydraulically connected to the new road and built to direct stormwater runoff to adjacent vegetated areas; impervious trails built to direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees; and sidewalks, bike lanes, or trails constructed with permeable surfaces.

In the case of road widening projects where additional lanes of traffic are added, the 50% rule also applies. That is, the addition of traffic lanes resulting in an alteration of more than 50 percent of the impervious surface of an existing street or road that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire street or road that had additional traffic lanes added).

Where the addition of traffic lanes results in an alteration of less than 50 percent of the impervious surface of an existing street or road that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from only the new traffic lanes). However, if the stormwater runoff from the existing traffic lanes and the added traffic lanes cannot be separated, any onsite treatment system must be designed and sized to treat stormwater runoff from the entire street or road. If an offsite treatment system is installed or in-lieu fees paid in accordance with Provision C.3.e., the offsite treatment system or in-lieu fees must address only the stormwater runoff from the added traffic lanes.

Because road widening and trail projects belong to a newly added category of Regulated Projects, adequate implementation time has been included as well as "grandfathering" language. (See discussion under Provision C.3.b.ii.(1).)

Provision C.3.b.iii. requires that the Permittees cumulatively complete 10 pilot "green street" projects within the Permit term. This Provision was originally intended to require stormwater treatment for road rehabilitation projects on

arterial roads that added and/or replaced > 10,000 ft^2 of impervious surface. We acknowledge the logistical difficulties in retrofitting roads with stormwater treatment systems as well as the funding challenges facing municipalities in the Bay Area. However, we are aware that some cities have or will have funding for "green street" retrofit projects that will provide water quality benefits as well as meet broader community goals such as fostering unique and attractive streetscapes that protect and enhance neighborhood livability, serving to enhance pedestrian and bike access, and encouraging the planting of landscapes and vegetation that contribute to reductions in global warming. Therefore, instead of requiring post-construction treatment for all road rehabilitation of arterial streets, this Provision requires the completion of 10 pilot "green street" projects by the Permittees within the Permit term. These projects must incorporate LID techniques for site design and treatment in accordance with Provision C.3.c. and provide stormwater treatment pursuant to Provision C.3.d. and must be representative of the three different types of streets: arterial, collector, and local. To ensure equity and an even distribution of projects, at least two pilot projects must be located in each of the following counties: Alameda, Contra Costa, San Mateo, and Santa Clara. Parking lot projects are acceptable as pilot projects as long as both parking lot and street runoff is addressed. Because these are pilot projects, we have not specified a minimum or maximum size requirement and the details of which cities will have these projects are to be determined by the Permittees.

Provision C.3.c (Low Impact Development (LID)) recognizes LID as a cost-effective, beneficial, holistic, integrated stormwater management strategy[69]. The goal of LID is to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treat stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as preserving undeveloped open space, rain barrels and cisterns, green roofs, permeable pavement, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes.

This Provision sets forth a three-pronged approach to LID with source control, site design, and stormwater treatment requirements. The concepts and techniques for incorporating LID into development projects, particularly for site design, have been extensively discussed in BASMAA's Start at the Source manual (1999) and its companion document, Using Site Design Techniques to Meet Development Standards for Stormwater Quality (May 2003), as well as in various other LID reference documents.

Provision C.3.c.i.(1) lists source control measures that must be included in all Regulated Projects as well as some that are applicable only to certain types of

[69] USEPA, *Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices* **(**Publication Number EPA 841-F-07-006, December 2007) http://www.epa.gov/o**wow/nps/lid/costs07)**

businesses and facilities. These measures are recognized nationwide as basic, effective techniques to minimize the introduction of pollutants into stormwater runoff. The current stormwater permits also list these methods; however, they are encouraged rather than required. By requiring these source control measures, this Provision sets a consistent, achievable standard for all Regulated Projects and allows the Board to more systematically and fairly measure permit compliance. This Provision retains enough flexibility such that Regulated Projects are not forced to include measures inappropriate, or impracticable, to their projects. This Provision does not preclude Permittees from requiring additional measures that may be applicable and appropriate.

Provision C.3.c.i.(2)(a) lists site design elements that must be implemented at all Regulated Projects. These design elements are basic, effective techniques to minimize pollutant concentrations in stormwater runoff as well as the volume and frequency of discharge of the runoff. On the basis of the Board staff's review of the Permittees' Annual Reports and CWA section 401 certification projects, these measures are already being done at many projects. One design element requires all Regulated Projects to include at least one site design measure from a list of six which includes recycling of roof runoff, directing runoff into vegetated areas, and installation of permeable surfaces instead of traditional paving. All these measures serve to reduce the amount of runoff and its associated pollutants being discharged from the Regulated Project.

Provision C.3.c.i.(2)(b) requires each Regulated Project to treat 100% of the Provision C.3.d. runoff with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility. LID treatment measures are harvesting and re-use, infiltration, evapotranspiration, or biotreatment. A properly engineered and maintained biotreatment system may be considered only if it is infeasible to implement harvesting and re-use, infiltration, or evapotranspiration at a project site. Infeasibility may result from conditions including the following:

- Locations where seasonal high groundwater would be within 10 feet of the base of the LID treatment measure.
- Locations within 100 feet of a groundwater well used for drinking water.
- Development sites where pollutant mobilization in the soil or groundwater is a documented concern.
- Locations with potential geotechnical hazards.
- Smart growth and infill or redevelopment sites where the density and/or nature of the project would create significant difficulty for compliance with the onsite volume retention requirement.
- Locations with tight clay soils that significantly limit the infiltration of stormwater.

This Provision recognizes the benefits of harvesting and reuse, infiltration and evapotranspiration and establishes these methods at the top of the LID treatment hierarchy. This Provision also acknowledges the challenges, both institutional and technical, to providing these LID methods at all Regulated Projects. There

are certainly situations where biotreatment is a valid LID treatment measure and this Provision allows Permittees the flexibility to make this determination so that Regulated Projects are not forced to include measures inappropriate or impracticable to the project sites. However, Permittees are required to submit a report within 18 months of the Permit effective date and prior to the required implementation date on the criteria and procedures that Permittees will employ to determine when harvesting and re-use, infiltration, or evapotranspiration is feasible and infeasible at a Regulated Project site. The Permittees are also required to submit a second report two years after implementing the new LID requirements that documents their experience with determining the feasibility and infeasibility of harvesting and reuse, infiltration, and evapotranspiration at Regulated Project sites. This report shall also discuss barriers, including institutional and technical site specific constraints, to implementation of infiltration, harvesting and reuse, or evapotranspiration and proposed strategies for removing these identified barriers.

This Provision specifies minimum specifications for biotreatment systems to be considered as LID treatment and requires Permittees to develop soil media specifications. Because this Provision recognizes green roofs as biotreatment systems for roof runoff, it also requires Permittees to develop minimum specifications for green roofs.

Provision C.3.c.ii. establishes the implementation date for the new LID requirements of Provision C.3.c.i. to be two years after the Permit effective date. Grandfathering language consistent with Provision C.3.b.ii.(1) has been included in this Provision to exempt private development projects (that are far along in their permitting and approval process) and public projects (that are far along in their funding and design) from the requirements of Provision C.3.c.i.

Provision C.3.d (Numeric Sizing Criteria for Stormwater Treatment Systems) lists the hydraulic sizing design criteria that the stormwater treatment systems installed for Regulated Projects must meet. The volume and flow hydraulic design criteria are the same as those required in the current stormwater permits. These criteria ensure that stormwater treatment systems will be designed to treat the optimum amount of relatively smaller-sized runoff-generating storms each year. That is, the treatment systems will be sized to treat the majority of rainfall events generating polluted runoff but will not have to be sized to treat the few very large annual storms as well. For many projects, such large treatment systems become infeasible to incorporate into the projects. Provision C.3.d. also adds a new combined flow and volume hydraulic design criteria to accommodate those situations where a combination approach is deemed most efficient.

Provision C.3.d.iv. defines infiltration devices and establishes limits on the use of stormwater treatment systems that function primarily as infiltration devices The intent of the Provision is to ensure that the use of infiltration devices, where feasible and safe from the standpoint of structural integrity, must also not cause or contribute to the degradation of groundwater quality at the project sites. This Provision requires infiltration devices to be located a minimum of 10 feet

(measured from the base) above the seasonal high groundwater mark and a minimum of 100 feet horizontally away from any known water supply wells, septic systems, and underground storage tanks with hazardous materials, and other measures to ensure that any potential threat to the beneficial uses of ground water is appropriately evaluated and avoided.

Provision C.3.e (Alternative or In-Lieu Compliance with Provision C.3.c.) recognizes that not all Regulated Projects may be able to install LID treatment systems onsite because of site conditions, such as existing underground utilities, right-of-way constraints, and limited space.

Provision C.3.e.i. In keeping with LID concepts and strategies, we expect new development projects to provide LID treatment onsite and to allocate the appropriate space for these systems because they do not have the site limitations of redevelopment and infill site development in the urban core. However, this Provision does not restrict alternative compliance to redevelopment and infill projects because the Permittees have requested flexibility to make the determination of when alternative compliance is appropriate. Based on the lack of offsite alternative compliance projects installed during the current stormwater permit terms, it seems that having to find offsite projects is already a great disincentive. Therefore, this Provision allows any Regulated Project to provide LID treatment for up to 100% of the required Provision C.3.d. stormwater runoff at an offsite location or pay equivalent in-lieu fees to provide LID treatment at a Regional Project, as long as the offsite and Regional Projects are in the same watershed as the Regulated Project.

For the LID Treatment at an Offsite Location alternative compliance option, offsite projects must be constructed by the end of construction of the Regulated Project. We acknowledge that a longer timeframe may be required to complete construction of offsite projects because of administrative, legal, and/or construction delays. Therefore, up to 3 years additional time is allowed for construction of the offsite project; however, to offset the untreated stormwater runoff from the Regulated Project that occurs while construction of the offsite project is taking place, the offsite project must be sized to treat an additional 10% of the calculated equivalent quantity of both stormwater runoff and pollutant loading for each year that it is delayed. Permittees have commented that for projects that are delayed, requiring treatment of an additional (10-30)% of stormwater runoff may result in costly re-design of treatment systems. In those cases, payment of in-lieu fees to provide the additional treatment at a Regional Project is a viable alternative.

For the Payment of In-Lieu Fees to a Regional Project alternative compliance option, the Regional Project must be completed within 3 years after the end of construction of the Regulated Project. We acknowledge that a longer timeframe may be required to complete construction of Regional Projects because they may involve a variety of public agencies and stakeholder groups and a longer planning and construction phase. Therefore, the timeline for completion of a Regional Project may be extended, up to 5 years after the completion of the Regulated

Project, with prior Water Board Executive Officer approval. Executive Officer approval will be granted contingent upon a demonstration of good faith efforts to implement the Regional Project, such as having funds encumbered and applying for the appropriate regulatory permits.

Provision C.3.e.ii. (Special Projects) When considered at the watershed scale, certain types of smart growth, high density, and transit-oriented development can either reduce existing impervious surfaces, or create less "accessory" impervious areas and auto-related pollutant impacts. Incentive LID treatment reduction credits approved by the Water Board may be applied to these types of Special Projects.

This Provision requires that by December 1, 2010, Permittees shall submit a proposal to the Water Board containing the following information:

- Identification of the types of projects proposed for consideration of LID treatment reduction credits and an estimate of the number and cumulative area of potential projects during the remaining term of this permit for each type of project..
- Identification of institutional barriers and/or technical site specific constraints to providing 100% LID treatment onsite that justify the allowance for non-LID treatment measures onsite.
- Specific criteria for each type of Special Project proposed, including size, location, minimum densities, minimum floor area ratios, or other appropriate limitations.
- Identification of specific water quality and environmental benefits provided by these types of projects that justify the allowance for non-LID treatment measures onsite.
- Proposed LID treatment reduction credit for each type of Special Project and justification for the proposed credits. The justification shall include identification and an estimate of the specific water quality benefit provided by each type of Special Project proposed for LID treatment reduction credit.
- Proposed total treatment reduction credit for Special Projects that may be characterized by more than one category and justification for the proposed total credit.

Provision C.3.f (Alternative Certification of Adherence to Numeric Sizing Criteria for Stormwater Treatment Systems) allows Permittees to have a third-party review and certify a Regulated Project's compliance with the hydraulic design criteria in Provision C.3.d. Some municipalities do not have the staffing resources to perform these technical reviews. The third-party review option addresses this staffing issue. This Provision requires Permittees to make a reasonable effort to ensure that the third-party reviewer has no conflict of interest with regard to the Regulated Project being reviewed. That is, any consultant, contractor or their employees hired to design and/or construct a stormwater treatment system for a Regulated Project can not also be the certifying third party.

Provision C.3.g. (Hydromodification Management, HM) requires that certain new development projects manage increases in stormwater runoff flow and volume so that post-project runoff shall not exceed estimated pre-project runoff rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force.

Background for Provision C.3.g. Based on Hydrograph Modification Management Plans prepared by the Permittees, the Water Board adopted hydromodification management (HM) requirements for Alameda Permittees (March 2007), Contra Costa Permittees (July 2006), Fairfield-Suisun Permittees (March 2007), Santa Clara Permittees (July 2005), and San Mateo Permittees (March 2007). Within Provision C.3.g, the major common elements of these HM requirements are restated. Attachments B–F contain the HM requirements as adopted by the Water Board, with some changes to correct minor errors and to provide consistency across the Region. Attachment F contains updated HM requirements for the Santa Clara Permittees. Permittees will continue to implement their adopted HM requirements; where Provision C.3.g. contradicts the Attachments, Provision C.3.g. shall be implemented. Additional requirements and/or options contained in the Attachments, above and beyond what is specified in Provision C.3.g., remain unaltered by Provision C.3.g. In all cases, the HM Standard must be achieved.

The Alameda, Santa Clara and San Mateo Permittees have adapted the Western Washington Hydrology Model[70] for modeling runoff from development project sites, sizing flow duration control structures, and determining overall compliance of such structures and other HM control structures (HM controls) in controlling runoff from the project sites to manage hydromodification impacts as described in the Permit. The adapted model is called the Bay Area Hydrology Model (BAHM).[71] All Permittees may use the BAHM if its inputs reflect actual conditions at the project site and surrounding area, including receiving water conditions. As Permittees gain experience in designing and operating HM controls, the Programs may make adjustments in the BAHM to improve its function in controlling excess runoff and managing hydromodification impacts. Notification of all such changes shall be given to the Water Board and the public through such mechanism as an electronic email list.

The Contra Costa Permittees have developed sizing charts for the design of flow duration control devices. Attachment C requires the Contra Costa Permittees to conduct a monitoring program to verify the performance of these devices. Following the satisfactory conclusion of this monitoring program, or conclusion of other study(s) that demonstrate devices built according to Attachment C specifications satisfactorily protect streams from excess erosive flows, the Water Board intends to allow the use of the Contra Costa sizing charts, when tailored to local conditions, by other stormwater programs and Permittees. Similarly, any other control strategies or criteria approved by the Board would be made available across the Region. This would be accomplished

[70] http://www.ecy.wa.gov/programs/wq/stormwater/wwhm_training/wwhm/wwhm_v2/instructions_v2.html
[71] See www.bayareahydrologymodel.org , Resources.

through Permit amendment or in another appropriate manner following appropriate public notification and process.

The Fairfield-Suisun Permittees have developed design procedures, criteria, and sizing factors for infiltration basins and bioretention units. These procedures, criteria, and sizing factors have been through the public review process already, and are not subject to public review at this time. Water Board staff's technical review found that the procedures, criteria, and sizing factors are acceptable in all ways except one: they are based on an allowable low flow rate that exceeds the criteria established in this Permit. Fairfield-Suisun Permittees may choose to change the design criteria and sizing factors to the allowable criterion of 20 percent of the 2-year peak flow, and seek Executive Officer approval of the modified sizing factors. This criterion, which is greater than the criterion allowed for other Bay Area Stormwater Countywide Programs, is based on data collected from Laurel and Ledgewood Creeks and technical analyses of these site-specific data. Following approval by the Executive Officer and notification of the public through such mechanism as an email list-serve, project proponents in the Fairfield-Suisun area may meet the HM Standard by using the Fairfield-Suisun Permittees' design procedures, criteria, and sizing factors for infiltration basins and/or bioretention units.

Attachments B and F allow the Alameda and Santa Clara Permittees to prepare a user guide to be used for evaluating individual receiving waterbodies using detailed methods to assess channel stability and watercourse critical flow. This user guide would reiterate and collate established stream stability assessment methods that have been presented in these Programs' HMPs, which have undergone Water Board staff review and been made available for public review. After the Programs have collated their methods into user guide format, received approval of the user guide from the Executive Officer, and informed the public through such process as an email list-serve, the user guide may be used to guide preparation of technical reports for: implementing the HM standard using in-stream or regional measures; determining whether certain projects are discharging to a watercourse that is less susceptible (from point of discharge to the Bay) to hydromodification (e.g., would have a lower potential for erosion than set forth in this Permit); and/or determining if a watercourse has a higher critical flow and project(s) discharging to it are eligible for an alternative Qcp[72] for the purpose of designing on-site or regional measures to control flows draining to these channels (i.e., the actual threshold of erosion-causing critical flow is higher than 10 percent of the 2-year pre-project flow).

The Water Board recognizes that the collective knowledge of management of erosive flows and durations from new and redevelopment is evolving, and that the topics listed below are appropriate topics for further study. Such a study may be initiated by Water Board staff, or the Executive Officer may request that all Bay Region municipal stormwater Permittees jointly conduct investigations as appropriate. Any future

[72] Qcp is the allowable low flow discharge from a flow control structure on a project site. It is a means of apportioning the critical flow in a stream to individual projects that discharge to that stream, such that cumulative discharges do not exceed the critical flow in the stream.

proposed changes to the Permittees' HM provisions may reflect improved understanding of these issues:

- Potential incremental costs, and benefits to waterways, from controlling a range of flows up to the 35- or 50-year peak flow, versus controlling up to the 10-year peak flow, as required by this Permit;
- The allowable low-flow (also called Qcp and currently specified as 10–20 percent of the pre-project 2-year runoff from the site) from HM controls;
- The effectiveness of self-retaining areas for management of post-project flows and durations; and/or
- The appropriate basis for determining cost-based impracticability of treating stormwater runoff and controlling excess runoff flows and durations.

Within Attachments B-F, this Permit allows for alternative HM compliance when on-site and regional HM controls and in-stream measures are not practicable. Alternative HM compliance includes contributing to or providing mitigation at other new or existing development projects that are not otherwise required by this Permit or other regulatory requirements to have HM controls. The Permit provides flexibility in the type, location, and timing of the mitigation measure. The Board recognizes that handling mitigation funds may be difficult for some municipalities because of administrative and legal constraints. The Board intends to allow flexibility for project proponents and/or Permittees to develop new or retrofit stormwater treatment or HM control projects within a broad area and reasonable time frame. Toward the end of the Permit term, the Board will review alternative projects and determine whether the impracticability criteria and options should be broadened or made narrower.

Provision C.3.g.i. defines the subset of Regulated Projects that must install hydromodification controls (HM controls). This subset, called HM Projects, are Regulated Projects that create and/or replace one acre or more of impervious surface and are not specifically excluded within Attachments B–F of the Permit. Within these Attachments, the Permittees have identified areas where the potential for single-project and/or cumulative development impacts to creeks is minimal, and thus HM controls are not required. Such areas include creeks that are concrete-lined or significantly hardened (e.g., with concrete) from point of discharge and continuously downstream to their outfall into San Francisco Bay; underground storm drains discharging to the Bay; and construction of infill projects in highly developed watersheds.[73]

Provision C.3.g.ii. establishes the standard hydromodification controls must meet. The HM Standard is based largely on the standards proposed by Permittees in their Hydrograph Modification Management Plans. The method for calculating post-project runoff in regards to HM controls is standard practice in Washington State and is equally applicable in California.

[73] Within the context of Provision C.3.g., "highly developed watersheds; refer to catchments or sub-catchments that are 65 percent impervious or more.

Provision C.3.g.iii. identifies and defines three methods of hydromodification management.

Provision C.3.g.iv. sets forth the information on hydromodification management to be submitted in the Permittees' Annual Reports.

Provision C.3.g.v. requires the Vallejo Permittees to develop a Hydromodification Management Plan (HMP), because the Vallejo Permittees have not been required to address HM impacts to date. Vallejo's current permit was issued by USEPA and does not require the Vallejo Permittees' to develop an HMP. The Vallejo Permittees may choose to adopt and implement one or a combination of the approaches in Attachments B–F.

Provision C.3.h (Operation and Maintenance of Stormwater Treatment Systems) establishes permitting requirements to ensure that proper maintenance for the life of the project is provided for all onsite, joint, and offsite stormwater treatment systems installed. The Provision requires Permittees to inspect at least 20% of these systems annually, at least 20% of all vault-based systems annually, and every treatment system at least once every 5 years. Requiring inspection of at least 20% of the total number of treatment and HM controls serves to prevent failed or improperly maintained systems from going undetected until the 5th year. We have the additional requirement to inspect at least 20% of all installed vault-based systems because they require more frequent maintenance and problems arise when the appropriate maintenance schedules are not followed. Also, problems with vault systems may not be as readily identified by the projects' regular maintenance crews. Neither of these inspection frequency requirements interferes with the Permittees' current ability to prioritize their inspections based on factors such as types of maintenance agreements, owner or contractor maintained systems, maintenance history, etc. This Provision also requires the development of a database or equivalent tabular format to track the operation and maintenance inspections and any necessary enforcement actions against Regulated Projects and submittal of Reporting Table C.3.h., which requires standard information that should be collected on each operation and maintenance inspection. We require this type of information to evaluate a Permittee's inspection and enforcement program and to determine compliance with the Permit. Summary data alone without facility-specific inspection findings does not allow us to determine whether Permittees are doing timely follow-up inspections at problematic facilities and taking appropriate enforcement actions.

Stormwater treatment system maintenance has been identified as a critical aspect of addressing urban runoff from Regulated Projects by many prominent urban runoff authorities, including CASQA, which states that "long-term performance of BMPs [stormwater treatment systems] hinges on ongoing and proper maintenance."[74] USEPA also stresses the importance of BMP [stormwater treatment system] maintenance,

[74] California Stormwater Quality Association, 2003. Stormwater Best Management Practice Handbook – New Development and Redevelopment, p. 6-1.

stating that "Lack of maintenance often limits the effectiveness of stormwater structure controls such as detention/retention basins and infiltration devices."[75]

Provision C.3.i. (Required Site Design Measures for Small Project and Detached Single-Family Homes Projects) introduces new requirements on single-family home projects that create and/or replace 2500 square feet or more of impervious surface and small development projects that create and/or replace > 2500 ft^2 to <10,000 ft^2 impervious surface (collectively over the entire project). A detached single-family home project is defined as the building of one single new house or the addition and/or replacement of impervious surface to one single existing house, which is not part of a larger plan of development.

This Provision requires these projects to select and implement one or more stormwater site design measures from a list of six. These site design measures are basic methods to reduce the amount and flowrate of stormwater runoff from projects and provide some pollutant removal treatment of the runoff that does leave the projects. Under this Provision, only projects that already require approvals and/or permits under the Permittees' current planning, building, or other comparable authority are regulated. Hence this Provision does not require Permittees to regulate small development and single-family home projects that would not otherwise be regulated under the Permittees' current ordinances or authorities. Water Board staff recognizes that the stormwater runoff pollutant and volume contribution from each one of these projects may be small; however, the cumulative impacts could be significant. This Provision serves to address some of these cumulative impacts in a simple way that will not be too administratively burdensome on the Permittees. To assist these small development and single-family home projects, this Provision also requires the Permittees to develop standard specifications for lot-scale site design and treatment measures.

[75] USEPA. 1992. *Guidance Manual for the Preparation of Part II of the NPDES Permit Application for Discharges from Municipal Separate Storm Sewer Systems*. EPA 833-B-92-002.

C.4. Industrial and Commercial Site Controls

Legal Authority

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(C) requires, "A description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system."

Specific Provision C.4. Requirements

Provision C.4.a (Legal Authority for Effective Site Management)

Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) provides that each Permittee must demonstrate that it can control "through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity." This section also describes requirements for effective follow-up and resolution of actual or threatened discharges of either polluted non-stormwater or polluted stormwater runoff from industrial/commercial sites.

Provision C.4.b (Inspection Plan)

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(C)(1) provides that Permittees must "identify priorities and procedures for inspections and establishing and implementing control measures for such discharges." The Permit requires Permittees to implement an industrial and commercial site controls program to reduce pollutants in runoff from all industrial and commercial sites/sources.

Provision C.4.b.ii.(1) (Commercial and Industrial Source Identification)

Federal NPDES regulation 40 CFR 122.26(d)(2)(ii) provides that Permittees "Provide an inventory, organized by watershed of the name and address, and a description (such as SIC codes) which best reflects the principal products or services provided by each facility which may discharge, to the municipal separate storm sewer, storm water associated with industrial activity."

USEPA requires "measures to reduce pollutants in storm water discharges to municipal separate storm sewers from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of

1986 (SARA)."[76] USEPA "also requires the municipal storm sewer Permittees to describe a program to address industrial dischargers that are covered under the municipal storm sewer permit."[77] To more closely follow USEPA's guidance, this Permit also includes operating and closed landfills, and hazardous waste treatment, disposal, storage and recovery facilities.

The Permit requires Permittees to identify various industrial sites and sources subject to the General Industrial Permit or other individual NPDES permit. USEPA supports the municipalities regulating industrial sites and sources that are already covered by an NPDES permit:

> Municipal operators of large and medium municipal separate storm sewer systems are responsible for obtaining system-wide or area permits for their system's discharges. These permits are expected to require that controls be placed on storm water discharges associated with industrial activity which discharge through the municipal system. It is anticipated that general or individual permits covering industrial storm water discharges to these municipal separate storm sewer systems will require industries to comply with the terms of the permit issued to the municipality, as well as other terms specific to the Permittee.[78]

And:

> Although today's rule will require industrial discharges through municipal storm sewers to be covered by separate permit, USEPA still believes that municipal operators of large and medium municipal systems have an important role in source identification and the development of pollutant controls for industries that discharge storm water through municipal separate storm sewer systems is appropriate. Under the CWA, large and medium municipalities are responsible for reducing pollutants in discharges from municipal separate storm sewers to the maximum extent practicable. Because storm water from industrial facilities may be a major contributor of pollutants to municipal separate storm sewer systems, municipalities are obligated to develop controls for storm water discharges associated with industrial activity through their system in their storm water management program.[79]

Provision C.4.b.ii.(5) (Inspection Frequency)
USEPA guidance[80] says, "management programs should address minimum frequency for routine inspections." The USEPA Fact Sheet—Visual Inspection[81] says, "To be effective, inspections must be carried out routinely."

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[76] *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990. Rules and Regulations. P. 48056.
[77] Ibid.
[78] *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990, Rules and Regulations. P. 48006.
[79] Ibid. P. 48000
[80] USEPA. 1992. Guidance 833-8-92-002, section 6.3.3.4 "Inspection and Monitoring".
[81] USEPA. 1999. 832-F-99-046, "Storm Water Management Fact Sheet – Visual Inspection".

Provision C.4.c (Enforcement Response Plan) requires the Permittees to establish an Enforcement Response Plan (ERP) that ensures timely response to actual or potential stormwater pollution problems discovered in the course of industrial/commercial stormwater inspections. The ERP also provides for progressive enforcement of violations of ordinances and/or other legal authorities. The ERP will provide guidance on the appropriate use of the various enforcement tools, such as verbal and written notices of violation, when to issue a citations, and require cleanup requirements, cost recovery, and pursue administrative or and criminal penalties. All violations must be corrected in a timely manner with the goal of correcting them before the next rain event but no longer than 10 business days after the violations are discovered.

Provision C.4.d (Staff Training) section of the Permit requires the Permittees to conduct annual staff trainings for inspectors. Trainings are necessary to keep inspectors current on enforcement policies and current MEP BMPs for industrial and commercial stormwater runoff discharges.

C.5. Illicit Discharge Detection and Elimination

Legal Authority

The following legal authority applies to section C.5:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulations 40 CFR 122.26(d)(1)(iii)(B)(1) provides that the Permittee shall include in their application, "the location of known municipal storm sewer system outfalls discharging to waters of the United States."

Federal NPDES regulations 40 CFR 122.26(d)(1)(iii)(B)(5) provides that the Permittee shall include in their application, "The location of major structural controls for storm water discharge (retention basins, detention basins, major infiltration devices, etc."

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B) provides that the Permittee shall have, "adequate legal authority to prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer."

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B) provides that the Permittee shall, "Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer."

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B) requires, "shall be based on a description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(1) requires, "a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal storm sewer system."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(2) requires, "a description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3) requires, "procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water."

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) requires, "a description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer."

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(5) requires, "a description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from municipal separate storm sewers."

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(7) requires, "a description of controls to limit infiltration of seepage from municipal sanitary sewers to municipal separate storm sewer systems where necessary."

Fact Sheet Findings in Support of Provision C.5

C.5-1 Illicit and inadvertent connections to MS4 systems result in the discharge of waste and chemical pollutants to receiving waters. Every Permittee must have the ability to discover, track, and clean up stormwater pollution discharges by illicit connections and other illegal discharges to the MS4 system.

C.5-2 Illicit discharges to the storm drain system can be detected in several ways. Permittee staff can detect discharges during their course of other tasks, and business owners and other aware citizens can observe and report suspect discharges. The Permittee must have a direct means for these reports of suspected polluted discharges to receive adequate documentation, tracking, and response through problem resolution.

Specific Provision C.5 Requirements

Provision C.5.a (Legal Authority) requires each Permittee have adequate legal authority to effectuate cessation, abatement, and/or clean up of non-exempt non-stormwater discharges per Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B). Illicit and inadvertent connections to MS4 systems result in the discharge of waste and chemical pollutants to receiving waters. Every Permittee must have the ability to discover, track, and clean up stormwater pollution discharges by illicit connections and other illegal discharges to the MS4 system.

Provision C.5.b (ERP) requires Permittees to establish an ERP that ensures timely response to illicit discharges and connections to the MS4 and provides progressive enforcement of violations of ordinances and/or other legal authorities. This section also requires Permittees to establish criteria for triggering follow-up investigations. Additional language has been added to this section to clarify the minimum level of effort and time frames for follow-up investigations when violations are discovered. Timely investigation and follow up when action levels are exceeded is necessary to identify sources of illicit discharges, especially since many of the discharges are transitory. The requirements for all violations to be corrected before the next rain event but no longer than 10 business days when there is evidence of illegal non-stormwater discharge, dumping, or illicit connections having reached municipal storm drains is necessary to ensure timely response by Permittees.

Provision C.5.c (Spill and Dumping Response, Complaint Response, and Frequency of Inspections) Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) requires, "a description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer." This Provision of the Permit requires the Permittees to establish and maintain a central point of contact including phone numbers for spill and complaint reporting. Reports from the public are an essential tool in discovering and investigating illicit discharge activities. Maintaining contact points will help ensure that there is effective reporting to assist with the discovery of prohibited discharges. Each Permittee must have a direct means for these reports of suspected polluted discharges to receive adequate documentation, tracking, and response through problem resolution.

Provision C.5.d (Control of Mobile Sources) requires each Permittee to develop and implement a program to reduce the discharge of pollutants from mobile businesses. The purpose of this section is to establish oversight and control of pollutants associated with mobile business sources to the MEP.

Provision C.5.e (Collection System Screening and MS4 Map Availability) Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3) requires, "procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water." This Provision of the Permit requires the Permittees to conduct follow up investigations and inspect portions of the MS4 for illicit discharges and connections. Permittees shall implement a program to actively seek and eliminate illicit connections and discharges during their routine collection system screening and during screening surveys at strategic check points. Additional wording has been added to this section to clarify and ensure that all appropriate municipal personnel are used in the program to observe and report these illicit discharges and connections when they are working the system.

This section also requires the Permittees to develop or obtain a map of their entire MS4 system and drainages within their jurisdictions and provide the map to the public for review. As part of the permit application process federal NPDES regulations 40 CFR 122.26(d)(1)(iii)(B)(1) and 40 CFR 122.26(d)(1)(iii)(B)(5) specify that dischargers must identify the location of any major outfall that discharges to waters of the United States, as well as the location of major structural controls for stormwater discharges. A major outfall is any outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than a circular pipe which is associated with a drainage area of more than 50 acres) or; for areas zoned for industrial activities, any pipe with a diameter of 12 inches or more or its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more). The permitting agency may not process a permit until the applicant has fully complied with the application requirements.[82] If, at the time of application, the information is unavailable, the Permit must require implementation of a program to meet the application requirements.[83] The requirement in this Provision of the Permit for

[82] 40 CFR 124.3 (applicable to state programs, see section 123.25).
[83] 40 CFR. 122.26(d)(1)(iv)(E).

Permittees to prepare maps of the MS4 system will help ensure that Permittees comply with federal NPDES permit application requirements that are more than 10 years old.

Provision C.5.f (Tracking and Case Follow-up) section of the Permit requires Permittees to track and monitor follow-up for all incidents and discharges reported to the complaint/spill response system that could pose a threat to water quality. This requirement is included so Permittees can demonstrate compliance with the ERP requirements of Section C.5.b and to ensure that illicit discharge reports receive adequate follow up through to resolution.

C.6. Construction Site Control

Legal Authority

The following legal authority applies to section C.6:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D) requires, "A description of a program to implement and maintain structural and non-structural best management practices to reduce pollutants in storm water runoff from construction sites to the municipal storm sewer system."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(1) requires, "A description of procedures for site planning which incorporate consideration of potential water quality impacts."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(2) requires, "A description of requirements for nonstructural and structural best management practices."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(3) requires, "A description of procedures for identifying priorities for inspecting sites and enforcing control measures which consider the nature of the construction activity, topography, and the characteristics of soils and receiving water quality."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(4) requires, "A description of appropriate educational and training measures for construction site operators."

Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) provides that each Permittee must demonstrate that it can control, "through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity."

Federal NPDES regulation 40 CFR 122.26(b)(14) provides that, "The following categories of facilities are considered to be engaging in 'industrial activity' for the purposes of this subsection: […] (x) Construction activity including cleaning, grading and excavation activities […]."

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to, "control all pollutants or pollutant parameters (either conventional, non-conventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute

to an excursion above any State water quality standard, including State narrative criteria for water quality."

Fact Sheet Findings in Support of Provision C.6.

C.6-1 Vegetation clearing, mass grading, lot leveling, and excavation expose soil to erosion processes and increase the potential for sediment mobilization, runoff and deposition in receiving waters. Construction sites without adequate BMP implementation result in sediment runoff rates that greatly exceed natural erosion rates of undisturbed lands, causing siltation and impairment of receiving waters.

C.6-2 Excess sediment can cloud the water, reducing the amount of sunlight reaching aquatic plants, clog fish gills, smother aquatic habitat and spawning areas, and impede navigation in our waterways. Sediment also transports other pollutants such as nutrients, metals, and oils and grease. Permittees are on-site at local construction sites for grading and building permit inspections, and also have in many cases dedicated construction stormwater inspectors with training in verifying that effective BMPs are in place and maintained. Permittees also have effective tools available to achieve compliance with adequate erosion control, such as *stop work* orders and citations.

C.6-3 Mobilized sediment from construction sites can flow into receiving waters. According to the 2004 National Water Quality Inventory[84], States and Tribes report that sediment is one of the top 10 causes of impairment of assessed rivers and streams, next to pathogens, habitat alteration, organic enrichment or oxygen depletion, nutrients, metals, etc.. Sediment impairs 35,177 river and stream miles (14% of the impaired river and stream miles). Sources of sedimentation include agriculture, urban runoff, construction, and forestry. Sediment runoff rates from construction sites, however, are typically 10 to 20 times greater than those of agricultural lands, and 1,000 to 2,000 times greater than those of forest lands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades.[85]

Specific Provision C.6 Requirements

Provision C.6.a. Legal Authority for Effective Site Management. Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) requires that each Permittee demonstrate that it can control "through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity." This section of the Permit requires each Permittee to have the

[84] http://www.epa.gov/owow/305b/2004report/2004_305Breport.pdf

[85] USEPA. December 2005. *Stormwater Phase II Final Rule Fact Sheet Series – Construction Site Runoff Control Minimum Control Measure*. EPA 833-F-00-008. Fact Sheet 2.6.

authority to require year-round, seasonally and phase appropriate effective erosion control, run-on and runoff control, sediment control, active treatment systems, good site management, and non stormwater management through all phases of site grading, building, and finishing of lots. All Permittees should already have this authority. Permittees shall certify adequacy of their respective legal authority in the 2010 Annual Report.

Inspectors should have the authority to take immediate enforcement actions when appropriate. Immediate enforcement will get the construction site's owner/operator to quickly implement corrections to violations, thereby minimizing and preventing threats to water quality. When inspectors are unable to take immediate enforcement actions, the threat to water quality continues until an enforcement incentive is issued to correct the violation. In its Phase II Compliance Assistance Guidance, USEPA says that, "Inspections give the MS4 operator an opportunity to provide additional guidance and education, issue warnings, or assess penalties."[86] To issue warnings and assess penalties during inspections, inspectors must have the legal authority to conduct enforcement.

Provision C.6.b. Enforcement Response Plan (ERP). This section requires each Permittee to develop and implement an escalating enforcement process that serves as reference for inspection staff to take consistent actions to achieve timely and effective corrective compliance from all public and private construction site owners/operators. Under this section, each Permittee develops its own unique ERP tailored for the specific jurisdiction; but all ERPs must make it a goal to correct all violations before the next rain event but no longer than 10 business days after the violations are discovered. In a few cases, such as slope inaccessibility, it may require longer than 10 days before crews can safely access the eroded area. The Permittees' tracking data need to provide a rationale for the longer compliance timeframe.

Water Board staff has noted deficiencies in the Permittees' enforcement procedures and implementation during inspections. The most common issues found were that enforcement was not firm and appropriate to correct the violation, and that repeat violations did not result in escalated enforcement procedures. USEPA supports enforcement of ordinances and permits at construction sites stating, "Effective inspection and enforcement requires […] penalties to deter infractions and intervention by the municipal authority to correct violations."[87] In addition, USEPA expects permits issued to municipalities to address "weak inspection and enforcement."[88] For these reasons, the enforcement requirements in this section have been established, while providing sufficient flexibility for each Permittee's unique stormwater program.

Provision C.6.c. Best Management Practices Categories. This section requires all Permittees to require all construction sites to have year-round seasonally appropriate effective Best Management Practices (BMPs) in the following six categories: (1)

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[86] USEPA. 2000. 833-R-00-002, Storm Water Phase II Compliance Assistance Guide, P.4-31
[87] USEPA. 1992. Guidance 833-8-92-002. Section 6.3.2.3.
[88] *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990. Rules and Regulations. p. 48058.

erosion control, (2) run-on and runoff control, (3) sediment control, (4) active treatment systems, (5) good site management, and (6) non stormwater management. These BMP categories are listed in the State General NPDES Permit for Stormwater Discharges Associated with Construction Activities (General Construction Permit). The Water Board staff decided it was too prescriptive and inappropriate to require a specific set of BMPs that are to be applicable to all sites. Every site is different with regards to terrain, soil type, soil disturbance, and proximity to a waterbody. The General Construction Permit recognizes these different factors and requires site specific BMPs through the Storm Water Pollution Prevention Plan that addresses the six specified BMP categories. This Permit allows Permittees the flexibility to determine if the BMPs for each construction site are effective and appropriate. This Permit also allows the Permittees and the project proponents the necessary flexibility to make immediate decisions on appropriate, cutting-edge technology to prevent the discharge of construction pollutants into stormdrains, waterways, and right-of-ways. Appropriate BMPs for the different site conditions can be found in different handbooks and manuals. Therefore, this Permit is consistent with the General Construction Permit in its requirements for BMPs in the six specified categories.

Vegetation clearing, mass grading, lot leveling, and excavation expose soil to erosion processes and increase the potential for sediment mobilization, runoff and deposition in receiving waters. Construction sites without adequate BMP implementation result in sediment runoff rates that greatly exceed natural erosion rates of undisturbed lands, causing siltation and impairment of receiving waters. This can even occur in conjunction with unexpected rain events during the so-called *dry-season*. Although rare, significant rains can occur in the San Francisco Bay Region during the dry season. Therefore, Permittees should ensure that construction sites have materials on hand for rapid rain response during the dry season.

Normally, stormwater restrictions on grading should be implemented during the wet season from October 1st through April 30th. Section C.6.c.ii.(1).d of the Permit requires, "project proponents to minimize grading during the wet season and scheduling of grading with seasonal dry weather periods to the extent feasible." If grading does occur during the wet season, Permittees shall require project proponents to (1) implement additional BMPs as necessary, (2) keep supplies available for rapid response to storm events, and (3) minimize wet-season, exposed, and graded areas to the absolute minimum necessary.

Slope stabilization is necessary on all active and inactive slopes during rain events regardless of the season, except in areas implementing advanced treatment. Slope stabilization is also required on inactive slopes throughout the rainy season. These requirements are needed because unstabilized slopes at construction sites are significant sources of erosion and sediment discharges during rainstorms. "Steep slopes are the most highly erodible surface of a construction site, and require special attention."[89] USEPA emphasizes the importance of slope stabilization when it states, "slope length

[89] Schueler, T., and H. Holland. 2000. *Muddy Water In—Muddy Water Out*? The Practice of Watershed Protection. p. 6.

and steepness are key influences on both the volume and velocity of surface runoff. Long slopes deliver more runoff to the base of slopes and steep slopes increase runoff velocity; both conditions enhance the potential for erosion to occur."[90] In lieu of vegetation preservation or replanting, soil stabilization is the most effective measure in preventing erosion on slopes. Research has shown that effective soil stabilization can reduce sediment discharge concentrations up to six times, as compared to soils without stabilization.[91] Slope stabilization at construction sites for erosion control is already the consensus among the regulatory community and is found throughout construction BMP manuals and permits. For these reasons, Permittees must ensure that slope stabilization is implemented on sites, as appropriate.

It is also necessary that Permittees ensure that construction sites are revegetated as early as feasible. Implementation of revegetation reduces the threat of polluted stormwater discharges from construction sites. Construction sites should permanently stabilize disturbed soils with vegetation at the conclusion of each phase of construction.[92] A survey of grading and clearing programs found one-third of the programs without a time limit for permanent revegetation, "thereby increasing the chances for soil erosion to occur."[93] USEPA states "the establishment and maintenance of vegetation are the most important factors to minimizing erosion during development."[94]

To ensure the MEP standard and water quality standards are met, advanced treatment systems may be necessary at some construction sites. In requiring the implementation of advanced treatment for sediment at construction sites, Permittees should consider the site's threat to water quality. In evaluating the threat to water quality, the following factors shall be considered: (1) soil erosion potential; (2) the site's slopes; (3) project size and type; (4) sensitivity of receiving waterbodies; (5) proximity to receiving waterbodies; (6) non-stormwater discharges; and (7) any other relevant factors. Advanced treatment is a treatment system that employs chemical coagulation, chemical flocculation, or electro coagulation in order to reduce turbidity caused by fine suspended sediment.[95] Advanced treatment consists of a three part treatment train of coagulation, sedimentation, and polishing filtration. Advanced treatment has been effectively implemented extensively in the other states and in the Central Valley Region of California.[96] In addition, Water Board's inspectors have observed advanced treatment being effectively implemented at both large sites greater than 100 acres, and at small, 5-acre sites. Advanced treatment is often necessary for Permittees to ensure that discharges from construction sites are not causing or contributing to a violation of water quality standards.

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90 USEPA. 1990. *Sediment and Erosion Control: An Inventory of Current Practices*. p. II-1.

91 Schueler, T., and H. Holland. 2000. "Muddy Water In—Muddy Water Out?" *The Practice of Watershed Protection.* p. 5.

92 Ibid.

93 Ibid. p. 11.

94 USEPA. 1990. *Sediment and Erosion Control: An Inventory of Current Practices*. p. II-1.

95 SWCRB. September 2, 2009. *NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities – Order No. 2009-0009-DWQ.*

96 SWRCB. 2004. Conference on Advanced Treatment at Construction Sites.

Provision C.6.d. Plan Approval Process. This section of the Permit requires the Permittees to review project proponents' stormwater management plans for compliance with local regulations, policies, and procedures. USEPA states that it is often easier and more effective to incorporate stormwater quality controls during the site plan review process or earlier.[97] In the Phase I stormwater regulations, USEPA states that a primary control technique is good site planning.[98] USEPA goes on to say that the most efficient controls result when a comprehensive stormwater management system is in place.[99] To determine if a construction site is in compliance with construction and grading ordinances and permits, USEPA states that the "MS4 operator should review the site plans submitted by the construction site operator before ground is broken."[100] Site plan review aids in compliance and enforcement efforts since it alerts the "MS4 operator early in the process to the planned use or non-use of proper BMPs and provides a way to track new construction activities."[101]

Provision C.6.e. (Inspections) The Water Board allows flexibility on the exact legal authority language, ERP, and BMPs required on a site. This section of the Permit pulls together the accountability of the whole Provision through regular inspections, consistent enforcement, and meaningful tracking. These three elements will help ensure that effective construction pollutant controls are in place in order to minimize construction polluted runoff to the stormdrain and waterbodies.

Currently, Annual Reports show that some Permittees provide no information on its construction inspection and enforcement programs; some Permittees only provide information on pre rainy season inspections; another group of Permittees conduct inspections through December and provide just the date each site was inspected; yet another group of Permittees provides a very brief summary of their respective overall inspection program; and there is a small group of Permittees who report meaningful inspection and enforcement information. Inspections of construction sites by Water Board staff have noted deficiencies in stormwater inspections and enforcement. Therefore, this section clearly identifies the level of effort necessary by all Permittees to minimize construction pollutant runoff into stormdrains and ultimately, waterbodies.

This section requires monthly inspections during the wet season of all construction sites disturbing one or more acre of land and at all high priority sites as determined by the Permittee or the Water Board as significant threats to water quality. Inspections shall focus on the adequacy and effectiveness of the site specific BMPs implemented for the six BMP categories. Permittees shall implement its ERP and require timely corrections of all actual and potential problems observed. All violations must be corrected in a timely manner with the goal of correcting them before the next rain event but no longer

[97] USEPA. 2000. *Storm Water Phase II Compliance Assistance Guide*. EPA 833-R-00-002. Section 6.3.2.1.
[98] *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990. Rules and Regulations. p. 48034.
[99] Ibid.
[100] USEPA. 2000. *Storm Water Phase II Compliance Assistance Guide*. EPA 833-R-00-002. Section 4.6.2.4, pp. 4–30.
[101] Ibid. pp. 4–31.

than 10 business days after the violations are discovered. All inspections shall be recorded on a written or electronic inspection form, and also tracked in an electronic database or tabular format. The tracked information provides meaningful data for evaluating compliance. An example tabular format is included as Table 6 – Construction Inspection Data. Submittal of this Table is not required in each Annual Report but encouraged. Each Permittee will need to use the information in the electronic database or tabular format to compile its Annual Reports. The Executive Officer may require that the tracked information be submitted electronically or in a tabular format. When required, Permittees shall submit that data within 10-working days of the requirement. The recommended submittal format is in Table 6 – Construction Inspection Data.

Provision C.6.f. Staff Training. This section of the Permit requires Permittees to conduct annual staff trainings for municipal staff. These trainings have been found to be extremely effective means to educate inspectors and to inform them of any changes to local ordinances and state laws. Trainings provide valuable opportunity for Permittees to network and share strategies used for effective enforcement and management of erosion control practices.

Table 6 – Construction Inspection Data

Facility/Site Inspected	Inspection Date	Weather During Inspection	Inches of Rain Since Last Inspection	Enforcement Response Level	Problem(s) Observed							Specific Problem(s)	Resolution			Comments/ Rationale for Longer Compliance Time
					Erosion Control	Run-on and Runoff Control	Sediment Control	Active Treatment System	Good Site Management	Non Stormwater Management	Illicit Discharge		Problems Fixed	Need More Time	Escalate Enforcement	
Panoramic Views	9/30/08	Dry	0	Written Notice			x					Driveway not stabilized				
Panoramic Views	10/15/08	Dry	0.5										x			50' of driveway rocked.
Panoramic Views	11/15/08	Rain	3	Stop Work	x		x				x	Uncovered graded lots eroding; Sediment entering a stormdrain that didn't have adequate protection.				
Panoramic Views	11/15/08	Drizzling	0.25										x			Lots blanketed. Storm drains pumped. Street cleaned.
Panoramic Views	12/1/08	Dry	4	Verbal Warning					x			Porta potty next to stormdrain.	x			Porta potty moved away from stormdrain.
Panoramic Views	1/15/08	Rain	3.25	Written Warning	x					x		Fiber rolls need maintenance; Tire wash water flowing into street				
Panoramic Views	1/25/09	Dry	0										x			Fiber rolls replaced.

Facility/Site Inspected	Inspection Date	Weather During Inspection	Inches of Rain Since Last Inspection	Enforcement Response Level	Problem(s) Observed							Specific Problem(s)	Resolution			Comments/ Rationale for Longer Compliance Time
					Erosion Control	Run-on and Runoff Control	Sediment Control	Active Treatment System	Good Site Management	Non Stormwater Management	Illicit Discharge		Problems Fixed	Need More Time	Escalate Enforcement	
Panoramic Views	2/28/09	Rain	2.4	Stop Work	x		x				x	Slope erosion control failed. Fiber rolls at the bottom of the hill flattened. Sediment laden discharge skipping protected stormdrains and entering unprotected stormdrains.				
Panoramic Views	2/28/09	Rain	0.1											x		Fiber rolls replaced. Silt fences added. More stormdrains protected. Streets cleaned. Slope too soggy to access.
Panoramic Views	3/15/09	Dry	1	Citation with Fine					x		x	Paint brush washing not designated	x			Street and storm drains cleaned. Slopes blanketed.
Panoramic Views	4/1/09	Dry	0.5	Citation with Fine							x	Concrete washout overflowed; Evidence of illicit discharge				
Panoramic Views	4/15/09	Dry	0										x			Concrete washout replaced; Storm drain and line cleaned.

C.7. Public Information and Outreach

Legal Authority

The following legal authority applies to section C.7:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(6) requires, "A description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewers associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(5) requires , "a description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from municipal separate storm sewers."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(6) requires, "A description of educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials."

Fact Sheet Finding in Support of Provision C.7.

C.7-1 An informed and knowledgeable community is critical to the success of a stormwater program since it helps ensure greater support for the program as the public gains a greater understanding of stormwater pollution issues.

C.7-2 An informed community also ensures greater compliance with the program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of area waters.

C.7-3 The public education programs should use a mix of appropriate local strategies to address the viewpoints and concerns of a variety of audiences and communities, including minority and disadvantaged communities, as well as children.[102]

[102] USEPA. 2000. Storm Water Phase II Compliance Assistance Guide. EPA 833-R-00-002.

C.7-4 Target audiences should include (1) government agencies and official to achieve better communication, consistency, collaboration, and coordination at the federal, state, and local levels and (2) K-12/Youth Groups.103

C.7-5 Citizen involvement events should make every effort to reach out and engage all economic and ethnic groups.[104]

Specific Provision C.7 Requirements

Provision C.7.a. Storm Drain Inlet Marking. Storm drain inlet marking is a long-established program of outreach to the public on the nature of the storm drain system, providing the information that the storm drain system connects directly to creeks and the Bay and does not receive treatment. Past public awareness surveys have demonstrated that this BMP has achieved significant impact in raising awareness in the general public and meets the MEP standard as a required action. Therefore, it is important to set a goal of ensuring that all municipally-maintained inlets are legible labeled with a no dumping message. If storm drain marking can be conducted as a volunteer activity, it has additional public involvement value.

Provision C.7.b. Advertising Campaigns. Use of various electronic and/or print media on trash/litter in waterways and pesticides. Advertising campaigns are long-established outreach management practices. Specifically, the Bay Area Management Agencies Association (BASMAA) already implements an advertising campaign on behalf of the Permittees. While the Permittees have been successful at reaching certain goals for its Public Information/Participation programs, it must continue to increase public awareness of specific stormwater issues. This Permit also requires a pre-campaign survey and a post-campaign survey. These two surveys will help identify and quantify the audiences' knowledge, trends, and attitudes and/or practices; and to measure the overall population awareness of the messages and behavioral changes.

Provision C.7.c. Media Relations. Public service media time is available and allows the Permittees to leverage expensive media purchases to achieve broader outreach goals.

Provision C.7.d. Stormwater Point of Contact. As the public has become more aware, citizens are more frequently calling their local jurisdictions to report spills and other polluting behavior impacting stormwater runoff and causing non-stormwater prohibited discharges. Permittees are required to have a centralized, easily accessible point of contact both for citizen reports and to coordinate reports of problems identified by Permittee staff, permitting follow-up and pollution cleanup or prevention. Often the follow-up, cleanup, and/or prevention provide the opportunity to educate the immediate neighborhood through established public outreach mechanisms such as distributing door hangers in the neighborhood describing the remedy for the problem discovered. Permittees already have existing published stormwater point of contacts.

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103 State Water Board. 1994. Urban Runoff Technical Advisory Committee Report and Recommendations. Nonpoint Source Management Program.

104 USEPA. 2000. Storm Water Phase II Compliance Assistance Guide. EPA 833-R-00-002.

Provision C.7.e. Public Outreach Events. Staffing tables or booths at fairs, street fairs or other community events are a long-established outreach mechanism employed by Permittees to reach large numbers of citizens with stormwater pollution prevention information in an efficient and convenient manner. These have been ongoing in the Region for several municipal stormwater permit cycles and are MEP outreach actions. Permittees shall continue with such outreach events utilizing appropriate outreach materials, such as printed materials, newsletter/journal articles, and videos. Permittees shall also utilize existing community outreach events such as the Bringing Back the Natives Garden Tour.

Provision C.7.f. Watershed Stewardship Collaborative Efforts. Watershed and Creek groups are comprised of active citizens, but they often need support from the local jurisdiction and certainly need to coordinate actions with Permittees such as flood districts and cities.

Provision C.7.g. Citizen Involvement Events. Citizen involvement and volunteer efforts both accomplish needed creek cleanups and restorations, and serve to raise awareness and provide outreach opportunities. These have been ongoing in the Region for several municipal stormwater permit cycles and are MEP outreach actions.

In previous municipal stormwater permits, Public Information/Participation encompassed both Citizen Involvement Events and Public Outreach Events. Citizen Involvement Events are important because they provide the community opportunities to actively practice being good stewards of our environment. Therefore, this Permit separates out the Public Outreach Events from the Citizen Involvement Events to ensure that citizens in all Bay Area communities are given the opportunity to be involved. In addition, the Permit allows Permittees to claim both Public Outreach and Citizen Involvement credits if the event contains significant elements of both. The combined specified number of events for Public Outreach and Citizen Involvement are very close to current performance standards and/or level of effort for respective Public Information/Participation Programs.

Provision C.7.h. School-Age Children Outreach. Outreach to school children has proven to be a particularly successful program with an enthusiastic audience who are efficient to reach. School children also take the message home to their parents, neighbors, and friends. In addition, they are the next generation of decision makers and consumers.

Provision C.7.i. Outreach to Municipal Officials. It is important for Permittee staff to periodically inform Municipal Officials of the permit requirements and also future planning and resource needs driven by the permit and stormwater regulations.

C.8. Water Quality Monitoring

Legal Authority

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii); CWC section 13377; Federal
NPDES regulations 40 CFR 122.26(d)(2)(iv)

Specific Legal Authority: Permittees must conduct a comprehensive monitoring program as required under Federal NPDES regulations 40 CFR 122.48, 40 CFR 122.44(i), 40 CFR 122.26.(d)(1)(iv)(D), and 40 CFR 122.26(d)(2)(ii)-(iv).

Fact Sheet Findings in Support of Provision C.8

C.8-1 In response to questions regarding the type of water quality-based effluent limitations that are most appropriate for NPDES stormwater permits, and because of the nature of stormwater discharges, USEPA established the following approach to stormwater monitoring:

Each storm water permit should include a coordinated and cost-effective monitoring program to gather necessary information to determine the extent to which the permit provides for attainment of applicable water quality standards and to determine the appropriate conditions or limitations for subsequent permits. Such a monitoring program may include ambient monitoring, receiving water assessment, discharge monitoring (as needed), or a combination of monitoring procedures designed to gather necessary information.[105]

According to USEPA, the benefits of stormwater runoff monitoring include, but are not limited to, the following:

- Providing a means for evaluating the environmental risk of stormwater discharges by identifying types and amounts of pollutants present;
- Determining the relative potential for stormwater discharges to contribute to water quality impacts or water quality standard violations;
- Identifying potential sources of pollutants; and
- Eliminating or controlling identified sources more specifically through permit conditions.[106]

C.8-2 Provision C.8 requires Permittees to conduct water quality monitoring, including monitoring of receiving waters, in accordance with 40 CFR 122.44(i) and 122.48. One purpose of water quality monitoring is to demonstrate the effectiveness of the Permittees' stormwater management

[105] USEPA. 1996. Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits. Sept. 1, 1996. http://www.epa.gov/npdes/pubs/swpol.pdf
[106] USEPA. 1992. NPDES Storm Water Sampling Guidance Document. EPA/833-B-92-001.

actions pursuant to this Permit and, accordingly, demonstrate compliance with the conditions of the Permit. Other water quality monitoring objectives under this Permit include:

- Assess the chemical, physical, and biological impacts of urban runoff on receiving waters;
- Characterize stormwater discharges;
- Assess compliance with Total Maximum Daily Loads (TMDLs) and Wasteload Allocations (WLAs) in impaired waterbodies;
- Assess progress toward reducing receiving water concentrations of impairing pollutants;
- Assess compliance with numeric and narrative water quality objectives and standards;
- Identify sources of pollutants;
- Assess stream channel function and condition, as related to urban stormwater discharges;
- Assess the overall health and evaluate long-term trends in receiving water quality; and
- Measure and improve the effectiveness of the Permittees' urban runoff control programs and the Permittees' implemented BMPs.

C.8-3 Monitoring programs are an essential element in the improvement of urban runoff management efforts. Data collected from monitoring programs can be assessed to determine the effectiveness of management programs and practices, which is vital for the success of the iterative approach, also called the "continuous improvement" approach, used to meet the MEP standard. When water quality data indicate that water quality standards or objectives are not being met, particular pollutants, sources, and drainage areas can be identified and targeted for urban runoff management efforts. The iterative process in Provision C.1, Water Quality Standards Exceedances, could potentially be triggered by monitoring results. Ultimately, the results of the monitoring program must be used to focus actions to reduce pollutant loadings to comply with applicable WLAs, and protect and enhance the beneficial uses of the receiving waters in the Permittees' jurisdictions and the San Francisco Bay.

C.8-4 Water quality monitoring requirements in previous permits were less detailed than the requirements in this Permit. Under previous permits, each program could design its own monitoring program, with few permit guidelines. A decision by the California Superior Court[107] regarding two of the programs' permits stated:

Federal law requires that all NPDES permits specify "[r]equired monitoring including type, intervals, and frequency sufficient to yield

[107] San Francisco Baykeeper vs. Regional Water Quality Control Board, San Francisco Bay Region, Consolidated Case No. 500527, filed Nov. 14, 2003.

data which are representative of the monitored activity." 40 C.F.R. § 122.48(b). Here, there is no monitoring program set forth in the Permit. Instead, an annual Monitoring Program Plan is to be prepared by the dischargers to set forth the monitoring program that will be used to demonstrate the effectiveness of the Stormwater Management Plan. This does not meet the regulatory requirements that a monitoring program be set forth including the types, intervals, and frequencies of the monitoring.

The water quality monitoring requirements in Provision C.8 comply with 40 CFR 122.44(i) and 122.48(b), and the Superior Court decision.

C.8-5 The Water Quality Monitoring Provision is intended to provide answers to five fundamental management questions, outlined below. Monitoring is intended to progress as iterative steps toward ensuring that the Permittees' can fully answer, through progressive monitoring actions, each of the five management questions:

- Are conditions in receiving waters protective, or likely to be protective, of beneficial uses?
- What is the extent and magnitude of the current or potential receiving water problems?
- What is the relative urban runoff contribution to the receiving water problem(s)?
- What are the sources of urban runoff that contribute to receiving water problem(s)?
- Are conditions in receiving waters getting better or worse?

C.8-6 On April 15, 1992, the Water Board adopted Resolution No. 92-043 directing the Executive Officer to implement the Regional Monitoring Program for San Francisco Bay. Subsequent to a public hearing and various meetings, Board staff requested major permit holders in the Region, under authority of CWC section 13267, to report on the water quality of the Estuary. These permit holders, including the Permittees, responded to this request by participating in a collaborative effort through the San Francisco Estuary Institute. This effort has come to be known as the San Francisco Estuary Regional Monitoring Program for Trace Substances (RMP). The RMP involves collection and analysis of data on pollutants and toxicity in water, sediment and biota of the Estuary. The Permittees are required to continue to report on the water quality of the Estuary, as presently required. Compliance with the requirement through participation in the RMP is considered to be adequate compliance.

C.8-7 The Surface Water Ambient Monitoring Program (SWAMP) is a statewide monitoring effort, administered by the State Water Board, designed to assess the conditions of surface waters throughout California. One purpose of SWAMP is to integrate existing water quality monitoring activities of the State Water Board and the Regional Water Quality Control Boards, and to coordinate with other monitoring programs. Provision C.8 contains a

framework, referred to as a regional monitoring collaborative, within which Permittees can elect to work cooperatively with SWAMP to maximize the value and utility of both the Permittees' and SWAMP's monitoring resources.

C.8-8 In 1998 BASMAA published *Support Document for Development of the Regional Stormwater Monitoring Strategy*,[108] a document describing a possible strategy for coordinating the monitoring activities of BASMAA member agencies. The document states:

> BASMAA's member agencies are connected not only by geography but also by an overlapping set of environmental issues and processes and a common regulatory structure. It is only natural that the evolution of their individual stormwater management programs has led toward increasing amounts of information sharing, cooperation, and coordination.
>
> This same concept is found in the optional provision for Permittees to form a regional monitoring collaborative. Such a group is meant to provide efficiencies and economies of scale by performing certain tasks (e.g., planning, contracting, data quality assurance, data management and analysis, and reporting) at the regional level. Further benefits are expected from closer cooperation between this group, the Regional Monitoring Program, and SWAMP.

C.8-9 This Permit includes monitoring requirements to verify compliance with adopted TMDL WLAs and to provide data needed for TMDL development and/or implementation. This Permit incorporates the TMDLs' WLAs adopted by the Water Board as required under CWA section 303(d).

C.8-10 SB1070 (California Legislative year 2005/2006) found that there is no single place where the public can go to get a look at the health of local waterbodies. SB1070 also states that all information available to agencies shall be made readily available to the public via the Internet. This Permit requires water quality data to be submitted in a specified format and uploaded to a centralized Internet site so that the public has ready access to the data.

Specific Provision C.8 Requirements

Each of the components of the monitoring provision is necessary to meet the objectives and answer the questions listed in the findings above. Justifications for each monitoring component are discussed below.

Provision C.8.a. Compliance Options. Provision C.8.a. provides Permittees options for obtaining monitoring data through various organizational structures, including use of data obtained by other parties. This is intended to

[108] EcoAnalysis, Inc. & Michael Drennan Assoc., Inc., *Support Document for Development of the Regional Stormwater Monitoring Strategy*, prepared for Bay Area Stormwater Management Agencies Association, March 2, 1998.

- Promote cost savings through economies of scale and elimination of redundant monitoring by various entities;
- Promote consistency in monitoring methods and data quality;
- Simplify reporting; and
- Make data and reports readily publicly available.

In the past, each Stormwater Countywide Program has conducted water quality monitoring on behalf of its member Permittees, and some data were collected by wider collaboratives, such as the Regional Monitoring Program. In this Permit, all the Stormwater Countywide Programs are encouraged to work collaboratively to conduct all or most of the required monitoring and reporting on a region-wide basis. For each monitoring component that is conducted collaboratively, one report would be prepared on behalf of all contributing Permittees; separate reports would not be required from each Program. Cost savings could result also from reduced contract and oversight hours, fewer quality assurance/quality control samples, shared sampling labor costs, and laboratory efficiencies.

Provision C.8.b. San Francisco Estuary Receiving Water Monitoring. The San Francisco Estuary is the ultimate receiving water for most of the urban runoff in this region. For this reason and because of the high value of its beneficial uses, Provision C.8.b requires focused monitoring on the Estuary to continue. Since the mid-1990s, Permittees have caused this monitoring to be conducted by contributing financially and with technical expertise, to the San Francisco Estuary Regional Monitoring Program for Trace Substances. Provision C.8.b requires such monitoring to continue.

Provisions C.8.c. & C.8.e.ii. Status Monitoring and Long-Term Monitoring. Status Monitoring and Long-Term Monitoring serve as surrogates to monitoring the discharge from all major outfalls, of which the Permittees have many. By sampling the sediment and water column in urban creeks, the Permittees can determine where water quality problems are occurring in the creeks, then work to identify which outfalls and land uses are causing or contributing to the problem. In short, Status and Long-Term Monitoring are needed to identify water quality problems and assess the health of streams; they are the first step in identifying sources of pollutants and an important component in evaluating the effectiveness of an urban runoff management program.

Provisions C.8.c.i. and C.8.e.iii. Parameters and Methods
Status & Long-Term parameters and methods reflect current accepted practices, based on the knowledge and experience of personnel responsible for water quality monitoring, including state and Regional SWAMP managers, Permittee representatives, and citizen monitors. Many Status and Long-Term Monitoring parameters are consistent with parameters the Permittees have been monitoring to date. The following parameters are new for some of the Permittees:

- Biological Assessment—to provide site-specific information about the health and diversity of freshwater benthic communities within a specific reach of a creek, using standard procedures developed and/or used by the State Water

Resources Control Board Surface Water Ambient Monitoring Program.[109] It consists of collecting samples of benthic communities and conducting a taxonomic identification to measure community abundance and diversity, which is then compared to a reference creek to assess benthic community health. This monitoring can also provide information on cumulative pollutant exposure/impacts because pollutant impacts to the benthic community accumulate and occur over time.

- Chlorine—to detect a release of potable water or other chlorinated water sources, which are toxic to aquatic life.
- Nutrients—recent monitoring data indicate nutrients, which can increase algal growth and decrease dissolved oxygen concentrations, are present in significant concentrations in Bay area creeks.
- Toxicity and Pollutants in Bedded Sediment—to determine the presence of, and identify, chemicals and compounds that bind to sediment in a creek bed and are toxic to aquatic life.
- Pathogen Indicators—to detect pathogens in waterbodies that could be sources of impairment to recreational uses at or downstream of the sampling location.
- Stream Survey (stream walk and mapping)—to assess the overall physical health of the stream and to gain information potentially useful in interpreting monitoring results.

In consideration of economic impacts to Permittees, the minimum number of Status & Long-Term samples ("Minimum # Sample Sites" columns in Tables 8.1 and 8.3) reflects the Programs' populations, not waterbody size. Permittees must select exact sample locations that will yield adequate information on the status of their waterbodies; in some cases, additional sampling above the minimum might be necessary.

Provisions C.8.c.ii. and C.8.e.iii. Frequency

Status Monitoring continues to be an annual requirement for the Permittees, except for two much smaller Permittees, Fairfield-Suisun and Vallejo. In considering costs, the frequency of Status Monitoring is established at twice per Permit term for Fairfield-Suisun, and once per Permit term for Vallejo. It is common for Permit terms to be extended through a lengthy Permit reissuance process. Thus, these frequencies are considered the minimum; costs are minimized while data necessary for successful stormwater management are obtained.

Long-Term Monitoring is required every second year (biennially), rather than annually, in order to balance data needs and Permittee costs. To further reduce costs, the Fairfield-Suisun and Vallejo Permittees have no Long-Term Monitoring requirements.

Provisions C.8.c.iii. and C.8.e.ii. Locations

Status Monitoring is to be conducted on a rotating-watershed basis, in similar fashion to the Statewide SWAMP. Provision C.8.c.iii. identifies the major waterbodies, and Permittees are to select which of these waterbodies will be sampled during the Permit

[109] Ode, P.R. 2007. Standard Operating Procedures for Collecting Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California, California State Water Resources Control Board Surface Water Ambient Monitoring Program (SWAMP), as subsequently revised.

term. The exact sample locations within each waterbody are critical in terms of determining the monitoring program's effectiveness. If correctly sited, the stations are expected to be very useful in answering the monitoring program's management questions and meeting its goals. For this reason, Provision C.8.c.iii. requires sample locations to be based on surrounding land use, likelihood of urban runoff impacts, existing data gaps, and similar considerations. This will help maximize the utility of the sample locations, while also providing the Permittees with adequate flexibility to ultimately choose practical Status Monitoring locations.

Long-Term Monitoring is to be conducted at fixed stations, which are intended to be lower reaches of urban creeks. This monitoring is intended to help assess progress toward reducing receiving water concentrations of impairing pollutants, among other purposes. Provision C.8.e.ii. establishes the waterbodies on which to locate fixed stations, and suggests that fixed stations be co-located with SWAMP fixed stations so that Permittees can use SWAMP data to fulfill some of their monitoring requirements. However, Permittees may select alternate locations based on their knowledge of such factors as site access and stream characteristics and provided that similar data types, data quality, and data quantity are collected.

Provision C.8.d. Monitoring Projects. Monitoring Projects are necessary to meet several water quality monitoring objectives under this Permit, including characterize stormwater discharges; identify sources of pollutants; identify new or emerging pollutants; assess stream channel function and condition; and measure and improve the effectiveness of Stormwater Countywide Programs and implemented BMPs. In consideration of economic impacts to Permittees, the number of Monitoring Projects required reflects the Permittees' populations.

Provision C.8.d.i. Stressor/Source Identification
Minimizing sources of pollutants that could impair water quality is a central purpose of urban runoff management programs. Monitoring which enables the Permittees to identify sources of water quality problems aids the Permittees in focusing their management efforts and improving their programs. In turn, the Permittees' programs can abate identified sources, which will improve the quality of urban runoff discharges and receiving waters. This monitoring is needed to address the management question, "What are the sources to urban runoff that contribute to receiving water problems?"

When Status or Long-Term Monitoring results indicate an exceedance of a water quality objective, toxicity threshold, or other "trigger", Permittees must identify the source of the problem and take steps to reduce any pollutants discharged from or through their municipal storm sewer systems. This requirement conforms to the process, outlined in Provision C.1., of complying with the Discharge Prohibition and Receiving Water Limitations. If multiple "triggers" are identified through monitoring, Permittees must focus on the highest priority problems; a cap on the total number of source identification projects conducted within the Permit term is provided to cap Permittees' potential costs.

Provision C.8.d.ii. BMP Effectiveness Investigation
U.S. EPA's stated approach to NPDES stormwater permitting uses BMPs in first-round permits, and expanded or better-tailored BMPs in subsequent permits, where necessary, to provide for the attainment of water quality standards.[110] The purpose of this monitoring project is to investigate the effectiveness of one currently in-use BMP to determine how it might be improved. Permittees may choose the particular stormwater treatment or hydromodification control BMP to investigate. As with other monitoring requirements, Permittees may work collaboratively to conduct one investigation on a region-wide basis, or each stormwater countywide program may conduct an investigation.

Provision C.8.d.iii. Geomorphic Project
The physical integrity of a stream's bed, bank and riparian area is integral to the stream's capacity to withstand the impacts of discharged pollutants, including chemical pollutants, sediment, excess discharge volumes, increased discharge velocities, and increased temperatures. At present, various efforts are underway to improve geomorphic conditions in creeks, primarily through local watershed partnerships. In addition, local groups are undertaking *green stormwater projects* with the goal of minimizing the physical and chemical impacts of stormwater runoff on the receiving stream. Such efforts ultimately seek to improve the integrity of the waterbodies that receive urban stormwater runoff.

The purpose of the Geomorphic Project is to contribute to these ongoing efforts in each Stormwater Countywide Program area. Permittees may select the geomorphic project from three categories specified in the Permit.

C.8.e. Pollutants of Concern[111] Monitoring. Federal CWA section 303(d) TMDL requirements, as implemented under the CWC, require a monitoring plan designed to measure the effectiveness of the TMDL point and nonpoint source control measures and the progress the waterbody is making toward attaining water quality objectives. Such a plan necessarily includes collection of water quality data. Provision C.8.e. establishes a monitoring program to measure of the effectiveness of TMDL control measures in progressing toward WLAs. Locations, parameters, methods, protocols, and sampling frequencies for this monitoring are specified. A sediment delivery estimate/budget is also required to improve the Permittees' estimates of their loading estimates. In addition, a workplan is required for estimating loads and analyzing sources of emerging pollutants, which are likely to be present in urban runoff, in the next Permit term.

C.8.f. Citizen Monitoring and Participation. CWA section 101(e) and 40 CFR Part 25 broadly require public participation in all programs established pursuant to the CWA, to foster public awareness of environmental issues and decision-making processes. Provision C.8.f. is intended to do the following:

[110] USEPA. 1996. *Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits*. Sept. 1, 1996. http://www.epa.gov/npdes/pubs/swpol.pdf
[111] See section C.9, C.11, C.12, and C.13 of this Fact Sheet for more information on Pollutants of Concern.

- Support current and future creek stewardship efforts by providing a framework for citizens and Permittees to share their collective knowledge of creek conditions; and
- Encourage Permittees to use and report data collected by creek groups and other third-parties when the data are of acceptable quality.

C.8.g. Reporting. CWC section 13267 provides authority for the Water Board to require technical water quality reports. Provision C.8.g. requires Permittees to submit electronic and comprehensive reports on their water quality monitoring activities to (1) determine compliance with monitoring requirements; (2) provide information useful in evaluating compliance with all Permit requirements; (3) enhance public awareness of the water quality in local streams and the Bay; and (4) standardize reporting to better facilitate analyses of the data, including for the CWA section 303(d) listing process.

C.9. – C.14. Pollutants of Concern including Total Maximum Daily Loads

Provisions C.9 through C.14 pertain to pollutants of concern, including those for which TMDLs are being developed or implemented.

Legal Authority

The following legal authority applies to provisions C.9 through C.14:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.44(d)(1) requires municipal stormwater permits to include any requirements necessary to, "[a]chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality."

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to, "control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality."

Basin Plan Requirements: Section 4.8 of the Region's Water Quality Control Plan (Basin Plan) requires that stormwater permits include requirements to prevent or reduce discharges of pollutants that cause or contribute to violations of water quality objectives. In the first phase, the Water Board requires implementation of technically and economically feasible control measures to reduce pollutants in stormwater to the MEP. If this first phase does not result in attainment of water quality objectives, the Water Board will consider permit conditions that might require implementation of additional control measures. For example, the control measures required as a result of TMDLs may go beyond the measures required in the first phase of the program.

General Strategy for Sediment-Bound Pollutants (Mercury, PCBs, legacy pesticides, PBDEs)

The control measures for mercury are intended to implement the urban runoff requirements stemming from TMDLs for this pollutant. The control measures required for PCBs are intended to implement those that are consistent with control measures in the PCBs TMDL implementation plan that has been approved by the Water Board and is pending approval by the State Board, the Office of Administrative Law, and U.S. EPA. The urban runoff management requirements in the PCBs TMDL implementation plan call for permit-term requirements based on an assessment of controls to reduce

PCBs to the MEP, and that is the intended approach of the required provisions for all pollutants of concern. Many of the control actions addressing PCBs and mercury will result in reductions of a host of sediment-bound pollutants, including legacy pesticides, mercury, PBDEs, and PCBs. The strategy for these pollutants is to use PCBs control guide decisions concerning where to focus effort, but implementation of the control efforts would taken into account the benefits for controlling other pollutants of concern. Further, because many of the control strategies addressing these pollutants of concern are relatively untested, the Water Board will implement control measures in the following modes:

1. Full-scale implementation throughout the region.
2. Focused implementation in areas where benefits are most likely to accrue.
3. Pilot-testing in a few specific locations.
4. Other: This may refer to experimental control measures, Research and Development, desktop analysis, laboratory studies, and/or literature review.

The logic of such categorization is that, as actions are tested and confidence is gained regarding level of experience and confidence in the control measure's effectiveness, the control measure may be implemented with a greater scope. For example, an untested control measure for which the effectiveness is uncertain may be implemented as a pilot project in a few locations during this permit term. If benefits result, and the action is deemed effective, it will be implemented in subsequent permit terms in a focused fashion in more locations or perhaps fully implemented throughout the Region, depending upon the nature of the measure. On the other hand there may be some control measures in which there is sufficient confidence, on the basis of prior experience, that the control action should be implemented in all applicable locations and/or situations. By conducting actions in this way and gathering information about effectiveness and cost, we will advance our understanding and be able to perform an updated assessment of the suite of actions that will constitute MEP for the following permit term. In fact, in additional to implementing control measures, gathering the necessary information about control measure effectiveness is a vital part of what needs to be accomplished by Permittees during this permit term. In the next permit term, control measures will be implemented on the basis of what we learn in this term, and we will, thus, achieve iterative refinement and improvement through time.

Background on Specific Provisions: Provisions C.9 through C.14 contain both technology-based requirements to control pollutants to the MEP and water quality based requirements to prevent or reduce discharges of pollutants that may cause or contribute to violations of water quality standards. Provisions C.9 and C.11 of the Permit incorporate requirements for the two TMDLs that have been fully approved and are effective for the Permittees. These TMDLs are for pesticide-related toxicity in urban creeks and mercury in San Francisco Bay. Additionally, Provision C.12 contains measures that address PCBs. The Regional Water Board has adopted a PCB TMDL, but it is still pending approval by State Board, the Office of Administrative Law, and U.S. EPA. This PCBs TMDL includes requirements that would be consistent with this

provision. Finally, Provision C.13 contains measures to implement the copper site-specific objective in San Francisco Bay.

Where a TMDL has been approved, NPDES permits must contain effluent limitations and conditions consistent with the requirements and assumptions in the TMDL.[112] Effluent limitations are generally expressed in numerical form. However, USEPA recommends that for NPDES-regulated municipal and small construction stormwater discharges, effluent limitations should be expressed as BMPs or other similar requirements rather than as numeric effluent limitations.[113] Consistent with USEPA's recommendation, this section implements WQBELs expressed as an iterative BMP approach capable of meeting the WLAs in accordance with the associated compliance schedule. The Permit's WQBELs include the numeric WLA as a performance standard and not as an effluent limitation. The WLA can be used to assess if additional BMPs are needed to achieve the TMDL Numeric Target in the waterbody.

[112] 40 CFR 122.44(d)(1)(vii)(B)

[113] USEPA, 2002. Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs. P. 4.

C.9. Pesticides Toxicity Control

Fact Sheet Findings in Support of Provision C.9.

C.9-1 This Permit fulfills the Basin Plan amendments the Water Board adopted that establish a Water Quality Containment Strategy and TMDL for diazinon and pesticide-related toxicity for Bay Area urban creeks on November 16, 2005, and approved by the State Water Board on November 15, 2006. The Water Quality Containment Strategy requires urban runoff management agencies to minimize their own pesticide use, conduct outreach to others, and lead monitoring efforts. Control measures implemented by urban runoff management agencies and other entities (except construction and industrial sites) shall reduce pesticides in urban runoff to the MEP.

C.9-2 **(Allocations):** The TMDL is allocated to all urban runoff, including urban runoff associated with MS4s, Caltrans facilities, and industrial, construction, and institutional sites. The allocations are expressed in terms of toxic units and diazinon concentrations.

Specific Provision C.9 Requirements

C.9 provisions fully implement the TMDL for Urban Creeks Pesticide Toxicity. All C.9 provisions are stated explicitly in the implementation plan for this TMDL. Permittees are encouraged to coordinate activities with the Urban Pesticide Pollution Prevention Project, the Urban Pesticide Committee, and other agencies and organizations. The Urban Pesticide Pollution Prevention (UP3) Project has been funded by a grant from the State Water Board and its goal is to prevent water pollution from urban pesticide use. The Urban Pesticides Committee serves as an information clearinghouse and as a forum for coordinating pesticide TMDL implementation.

The UP3 Project provides resources and information on integrated pest management (IPM) and tools to municipalities to support their efforts to reduce municipal pesticide use and to conduct outreach to their communities on less-toxic methods of pest control. In addition, it provides technical assistance to municipalities to encourage the U.S. Environmental Protection Agency and the California Department of Pesticide Regulation to prevent water quality problems from pesticides. It also maintains and manages the Urban Pesticides Committee, a statewide network of agencies, nonprofits, industry, and other stakeholders that are working to solve water quality problems from pesticides.

Specific tools provided by the UP3 Project that relate to permit requirements include:

- Guidance and resources to help agencies create contracts and bid documents for structural pest management services that help them meet their integrated pest management goals
- IPM policies and ordinances
- IPM training workshops and materials

- Outreach program design resources
- Resources for evaluating effectiveness

Provisions C.9.a through C.9.d are designed to insure that integrated pest management (IPM) is adopted and implemented as policy by all municipalities. IPM is a pest control strategy that uses an array of complementary methods: natural predators and parasites, pest-resistant varieties, cultural practices, biological controls, various physical techniques, and pesticides as a last resort. If implemented properly, it is an approach that can significantly reduce or eliminate the use of pesticides. The implementation of IPM will be assured through training of municipal employees and the requirement that municipalities only hire IPM-certified contractors.

Provision C.9.e requires that municipalities (through cooperation or participation with BASMAA) track and participate in pesticide regulatory processes like the USEPA pesticide evaluation and registration activities related to surface water quality, and the California Department of Pesticide Regulation (DPR) pesticide evaluation activities. The goal of these efforts is to encourage both the state and federal pesticide regulatory agencies to accommodate water quality concerns within the pesticide regulation or registration process. Through these efforts, it could be possible to prevent pesticide-related water quality problems from happening by affecting which products are brought to market.

Provision C.9.g is critical to the success of municipal efforts to control pesticide-related toxicity. Future permits must be based on an updated assessment of what is working and what is not. With every provision comes the responsibility to assess its effectiveness and report on these findings through the permit. The particulars of assessment will depend on the nature of the control measure.

Provision C.9.h directs the municipalities to conduct outreach to consumers at point of purchase and provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control. One way in which this can be accomplished is for the Permittees to participate in and provide resources for the "Our Water, Our World" program (www.ourwaterourworld.org) or a functionally equivalent pesticide use reduction outreach program. The "Our Water, Our World" program has developed a Web site with many resources, "to assist consumers in managing home and garden pests in a way that helps protect" the environment.

C.10. Trash Load Reduction

Legal Authority

The following legal authority applies to section C.10:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B) requires, "shall be based on a description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(2) requires, "a description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3) requires, "a description of procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water."

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) requires, "a description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer."

San Francisco Bay Basin Plan, Chapter 4 – Implementation, Table 4-1 Prohibitions, Prohibition 7, which is consistent with the State Water Board's Enclosed Bays and Estuaries Policy, Resolution 95-84, prohibits the discharge of rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas. This prohibition was adopted by the Water Board in the 1975 Basin Plan, primarily to protect recreational uses such as boating.

Fact Sheet Findings in Support of Provision C.10

C.10-1 Trash and litter are a pervasive problem near and in creeks and in San Francisco Bay. Controlling trash is one of the priorities for this Permit reissuance not only because of the trash discharge prohibition, but also because trash and litter cause particularly major impacts on our enjoyment of creeks and the Bay. There are also significant impacts on aquatic life and habitat in those waters and eventually to the global ocean ecosystem, where plastic often floats, persists in the environment for hundreds of years, if not

forever, concentrates organic toxins, and is ingested by aquatic life. There are also physical impacts, as aquatic species can become entangled and ensnared and can ingest plastic that looks like prey, losing the ability to feed properly.

For the purposes of this provision, trash is defined to consist of litter and particles of litter. Man made litter is defined in California Government Code section 68055.1 (g): *Litter* means all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the state, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling, or manufacturing.

C.10-2 Data collected by Water Board staff using the SWAMP Rapid Trash Assessment (RTA) Protocol,[114] over the 2003–2005 period,[115] suggest that the current approach to managing trash in waterbodies is not reducing the adverse impact on beneficial uses. The levels of trash in the waters of the San Francisco Bay Region are alarmingly high, considering the Basin Plan prohibits discharge of trash and that littering is illegal with potentially large fines. Even during dry weather conditions, a significant quantity of trash, particularly plastic, is making its way into waters and being transported downstream to San Francisco Bay and the Pacific Ocean. On the basis of 85 surveys conducted at 26 sites throughout the Bay Area, staff have found an average of 2.93 pieces of trash for every foot of stream, and all the trash was removed when it was surveyed, indicating high return rates of trash over the 2003–2005 study period. There did not appear to be one county within the Region with higher trash in waters—the highest wet weather deposition rates were found in western Contra Costa County, and the highest dry weather deposition was found in Sonoma County. Results of the trash in waterbodies assessment work by staff show that rather than adjacent neighborhoods polluting the sites at the bottom of the watershed, these areas, which tend to have lower property values, are subject to trash washing off with urban stormwater runoff cumulatively from the entire watershed.

C.10-3 A number of key conclusions can be made on the basis of the trash measurement in streams:

- Lower watershed sites have higher densities of trash.
- All watersheds studied in the San Francisco Bay Region have high levels of trash.
- There are trash source hotspots, usually associated with parks, schools, or poorly kept commercial facilities, near creek channels, that appear to contribute a significant portion of the trash deposition at lower watershed sites.

[114] SWAMP Rapid Trash Assessment Protocol, Version 8
[115] SWAMP S.F. Bay Region Trash Report, January 23, 2007

- Dry season deposition of trash, associated with wind and dry season runoff, contributes measurable levels of trash to downstream locations.
- The majority of trash is plastic at lower watershed sites where trash accumulates in the wet season. This suggests that urban runoff is a major source of floatable plastic found in the ocean and on beaches as marine debris.
- Parks that have more evident management of trash by city staff and local volunteers, including cleanup within the creek channel, have measurably less trash pieces and higher RTA scores.

C.10-4 The ubiquitous, unacceptable levels of trash in waters of the San Francisco Bay Region warrant a comprehensive and progressive program of education, warning, and enforcement, and certain areas warrant consideration of structural controls and treatment.

C.10-5 Trash in urban waterways of coastal areas can become *marine debris*, known to harm fish and wildlife and cause adverse economic impacts.[116] Trash is a regulated water pollutant that has many characteristics of concern to water quality. It accumulates in streams, rivers, bays, and ocean beaches throughout the San Francisco Bay Region, particularly in urban areas.

C.10-6 Trash adversely affects numerous beneficial uses of waters, particularly recreation and aquatic habitat. Not all litter and debris delivered to streams are of equal concern with regards to water quality. Besides the obvious negative aesthetic effects, most of the harm of trash in surface waters is imparted to wildlife in the form of entanglement or ingestion.[117,118] Some elements of trash exhibit significant threats to human health, such as discarded medical waste, human or pet waste, and broken glass.[119] Also, some household and industrial wastes can contain toxic batteries, pesticide containers, and fluorescent light bulbs that contain mercury. Large trash items such as discarded appliances can present physical barriers to natural stream flow, causing physical impacts such as bank erosion. From a management perspective, the persistent accumulation of trash in a waterbody is of particular concern, and signifies a priority for prevention of trash discharges. Also of concern are trash *hotspots* where illegal dumping, littering, and/or accumulation of trash occur.

C.10-7 The narrative water quality objectives applicable to trash are Floating Material (Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely

[116] Moore, S.L., and M.J. Allen. 2000. Distribution of anthropogenic and natural debris on the mainland shelf of the Southern California Bight. *Mar. Poll. Bull*. 40:83-88.
[117] Laist, D. W. and M. Liffmann. 2000. *Impacts of marine debris: research and management needs.* Issue papers of the International Marine Debris Conference, Aug. 6-11, 2000. Honolulu, HI, pp. 16–29.
[118] McCauley, S.J. and K.A. Bjorndahl. 1998. Conservation implications of dietary dilution from debris ingestion: sublethal effects in post-hatchling loggerhead sea turtles. *Conserv. Biol.* 13(4):925-929.
[119] Sheavly, S.B. 2004. *Marine Debris: an Overview of a Critical Issue for our Oceans.* 2004 International Coastal Cleanup Conference, San Juan, Puerto Rico. The Ocean Conservancy.

affect beneficial uses), Settleable Material (Waters shall not contain substances in concentrations that result in the deposition of material that cause nuisance or adversely affect beneficial uses), and Suspended Material (Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses).

C.10-8 The Water Board, at its February 11, 2009 hearing, adopted a resolution proposing that 26 waterbodies in the region be added to the 303(d) list for the pollutant trash. The adopted Resolution and supporting documents are contained in Attachment 10.1 – 303(d) Trash Resolution and Staff Report Feb 2009.

Specific Provision C.10 Requirements

Provision C.10. Permittees shall demonstrate compliance with Discharge Prohibition A.2 and trash-related Receiving Water Limitations through the timely implementation of control measures and other actions to reduce trash loads from municipal separate storm sewer systems (MS4s) by 40% by 2014, 70% by 2017, and 100% by 2022 as further specified below.

C.10.a.i. Short-Term Trash Load Reduction Plan
The Short-Term Trash Load Reduction Plan is intended to describe actions to incrementally reduce trash loads toward the 2014 requirement of a 40% reduction and eventual abatement of trash loads to receiving waters.

C.10.a.ii. Baseline Trash Load and **Trash Load Reduction Tracking Method**
In order to achieve the incremental trash load reductions in an accountable manner, the Permittees will propose Baseline Trash Loads and a Trash Load Reduction Tracking Method. The Tracking will account for additional trash load reducing actions and BMPs the Permittees implement. Permittees are also able to propose, with documentation, areas for exclusion from the Tracking Method accounting, by demonstrating that these areas already meet the Discharge Prohibition A.2 and have no trash loads.

C.10.a.iii. Minimum Full Trash Capture
Installation of full trash capture systems to prevent trash loads through the MS4 is MEP as demonstrated by the significant implementation of these systems occurring in the Los Angeles region. The minimum full trash capture installation requirements in this permit represent a moderate initial step toward employing this tool for trash load reduction.

C.10.b.i, ii. Trash Hot Spot Selection and Clean Up
Trash Hot Spots must be cleaned up as an interim measure until complete abatement of trash loads occurs. Eventually, with adequate source controls and trash loading abatement, trash hot spots will not occur in the receiving waters. In addition, Permittees will be credited for trash volume removed from hot spots in the trash load reduction tracking.

C.10.b.iii. Hot Spot Assessments
Trash Hot Spot assessments have been simplified and streamlined. Rather than counting individual trash items, which can vary in size from small plastic of glass particles to shopping carts, volume of material removed is measured, along with dominant types of trash removed. Photographs are recorded both before and after cleanup, to add to the record and verify cleanup.

C.10.c. Long Term Trash Load Reduction
Each Permittee will submit a Plan to achieve the incremental progress of 70% trash load reduction by 2017 during the following permit term, and the 100% reduction of trash loading by 2022.

C.10.d. Reporting
This sub-provision sets forth the reporting required in this provision, including the specific submittals and reports, and the annual reporting requirements.

Costs of Trash Control

Costs for either enhanced trash management measure implementation or installation and maintenance of trash capture devices are significant, but when spread over several years, and when viewed on a per-capita basis, are reasonable. Also, Trash capture devices have been installed by cities in California and in the Bay Region.

Trash and litter are costly to remove from our aquatic resource environments. Staff from the California Coastal Commission report that the Coastal Cleanup Day budget statewide: $200,000-250,000 for staff Coastal Commission staff, and much more from participating local agencies. The main component of this event is the 18,000 volunteer-hours which translates to $3,247,200 in labor, and so is equivalent to $3,250,000-3,500,000 per year to clean up 903,566 pounds of trash and recyclables at $3.60 to $3.90 per pound. This is one of the most cost-effective events because of volunteer labor and donations. The County of Los Angeles spends $20 million per year to sweep beaches for trash, according to Coastal Commission staff.

In Oakland, the Lake Merritt Institute is currently budgeted at $160,000 per year, with trash and litter removal from the Lake as a major task. The budget has increased from about $45,000 in 1996 to current levels. In the period of 1996-2005 the Lake Merritt Institute staff, utilizing significant volunteer resources, and accomplishing other education tasks, removed 410,859 pounds of trash from the Lake at cost of $951,725 at $2.3 per pound.

The City of Oakland reports that installation of two vortex and screen separators, titled by their brand name of CDS units, which cost, according to the table below, $821,000 for installations that treat tributary catchments of 192 acres before discharge to Lake Merritt at $4,276 per acre.

City of Oakland—CDS Unit Overview 9-07

Existing CDS unit location	Outfall number	Treatment area (acres)	Cost of implementation	Sizing	Maintenance requirements	Comments
Intersection of 27th and Valdez Streets	56*	71	$203,000 to contactor; plus ~$100,000 City costs	73 cfs peak flow; 36" stormdrain; Unit sizing: 18'6'6' box with 10'11"diam x 9'6" long cylinder	Visually inspect CDS Unit; remove trash and debris with Hydro Flusher bi-monthly	Installed in 2006. Required relocation of electrical conduit. Water main and gas line were also in the way; the box was adjusted to accommodate these conflicts.
Intersection of 22nd and Valley Streets	56*	121	$368,000 to contactor; plus ~$150,000 City costs	115 cfs peak flow; 54" stormdrain; Unit sizing: 18'8.5'6' box with 12'diam x 9'6" long cylinder	Visually inspect CDS Unit; remove trash and debris with Hydro Flusher bi-monthly	Installed in 2006. Installation costs were higher than anticipated. Sewer lines and PGE facilities were exposed that were not known before. Unit had to be modified and poured-in-place.

* The city is treating 192 acres or 72 percent of the 252 acres draining to outfall 56.

Mr. Morad Sedrak, the TMDL Implementation Program Manager, Bureau of Sanitation, Department of Public Works, City of Los Angeles, reports that the City plans to invest $72 million dollars for storm drain catch basin based capture device installation primarily, for a City of 4 million population, for a per-capita cost of $18 dollars. This effort is occurring over a span of over five years, for an annual per-capita cost of under $4.

Mr. Sedrak reports that O&M costs are not anticipated to increase, as the City of L.A. is already budgeted for 3 catch basin cleanings per year. He also states that catch basin inserts installed inside the catch basin in front of the lateral pipe, which have been certified by the Los Angeles Regional Water Board as total capture trash control devices, cost approximately $800 to $3,000 depending on the depth of the catch basin. The price quoted includes installation and the insert is made of Stainless Steel 316.

Furthermore, the price for catch basin opening screen covers, which are designed to retain trash at the street level for removal by sweepers, and also to open if there is a potential flooding blockage, ranges roughly from $800 to $4,500, depending on the opening size of the catch basin.

The City of Los Angeles has currently spent 27 million dollars on a retrofit program to install catch basin devices in approximately 30% of its area, with either inserts or screens

or both. Mr. Sedrak states that Los Angeles plans to spend $45 million over the next 3 years to retrofit the remaining catch basins within the City. The total number of catch basins within the City is approximately 52,000.

Here are some links to information about the Los Angeles trash control approach:

http://www.lastormwater.org/Siteorg/program/TMDLs/trashtmdl.htm

http://www.lastormwater.org/Siteorg/download/pdfs/general_info/Request-Certification-10-06.pdf)

http://www.lastorhttp://www.lastormwater.org/Siteorg/download/pdfs/general_info/Request-Certification-10-06.pdfmwater.org/Siteorg/program/poll_abate/cbscreens.htm)

http://www.lastormwater.org/Siteorg/program/poll_abate/cbinserts.htm

http://www.lastormwater.org/Siteorg/program/poll_abate/cbscreens.htm

Additional cost information on various trash capture devices are included in the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP) BMP Trash Toolbox (July 2007). The Toolbox contains cost information for both trash capture devices and enhanced trash management measure implementation, covers a broad range of options and also discusses operation and maintenance costs. Catch basin screens are included with an earlier estimate by the City of Los Angeles of $44 million over 10 years to install devices in 34,000 inlets.

Litter booms are also discussed with an example from the City of Oakland. The Damon Slough litter boom or sea curtain cost $36,000 for purchase and installation, including slough side access improvements for maintenance and trash removal. Annual maintenance costs have been $77,000 for weekly maintenance, which includes use of a crane for floating trash removal.

The costs of the full trash capture device installation required in the Order is significantly less than the previous tentative orders requirements for trash capture, as set forth in the table below.

Trash Capture Cost Estimates – Final TO versus previous TOs

Trash Capture Device Requirement	Acres of Capture	Cost for Trash Capture Installation	Percent of Retail/Wholesale Commercial (ABAG 2005)	Per capita $, Population = 4,533,634
Final TO: Implemented in Year 4 – 30% of Retail/Wholesale Commercial	5527	**$ 27,635,000**	30%	$6.06
Previous TOs: Implement in Year 4, 5% of Urban/suburban land	0.05 X 529,712 = 26,485 (BASMAA) or ABAG 0.05 X 655,015 = 32,750	$132,425,000 or $163,750,000	5% of Urban/suburban land	$29 or $36

30**%** X 18,426 acres = 5527 acres X $5000/acre = **$27,635,000** for four counties for installation; maintenance will add an additional cost. The Permittees may work cooperatively to achieve this capture installation requirement, and there is the potential for Regional revenue development. The previous requirement was 5% of (.05 X 655,015) (529,712 by BASMAA's count) acres of urban land (from ABAG 2005 table) = 32,750 acres, ((26,486 according to BASMAA) X $5000 = $132,000,000).

C.11. Mercury Controls

Fact Sheet Findings in Support of Provision C.11

C.11-1 On August 9, 2006, the Water Board adopted a Basin Plan amendment including a revised TMDL for mercury in San Francisco Bay, two new water quality objectives, and an implementation plan to achieve the TMDL. The State Water Board has approved this Basin Plan amendment, and USEPA approval is pending. C.11-2 through C.11-6 are components of the Mercury TMDL implementation plan relevant to implementation through the municipal stormwater permit.

C.11-2 The 2003 load of mercury from urban runoff is 160 kg/yr, and the aggregate WLAs for urban runoff is 80 kg/yr and shall be implemented through the NPDES stormwater permits issued to urban runoff management agencies and Caltrans. The urban stormwater runoff allocations implicitly include all current and future permitted discharges, not otherwise addressed by another allocation, and unpermitted discharges within the geographic boundaries of urban runoff management agencies (collectively, *source category*) including, but not limited to, Caltrans roadway and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.

C.11-3 The allocations for this source category shall be achieved within 20 years, and, as a way to measure progress, an interim loading milestone of 120 kg/yr, halfway between the current load and the allocation, should be achieved within 10 years. If the interim loading milestone is not achieved, NPDES-permitted entities shall demonstrate reasonable and measurable progress toward achieving the 10-year loading milestone.

C.11-4 The NPDES permits for urban runoff management agencies shall require the implementation of BMPs and control measures designed to achieve the allocations or accomplish the load reductions derived from the allocations. In addition to controlling mercury loads, BMPs or control measures shall include actions to reduce mercury-related risks to humans and wildlife. Requirements in the permit issued or reissued and applicable for the term of the permit shall be based on an updated assessment of control measures intended to reduce pollutants in stormwater runoff to the MEP and remain consistent with the section of this chapter titled, *Surface Water Protection and Management—Point Source Control—Stormwater Discharges*.

C.11-5 The following additional requirements are or shall be incorporated into NPDES permits issued or reissued by the Water Board for urban runoff management agencies.

a. Evaluate and report on the spatial extent, magnitude, and cause of contamination for locations where elevated mercury concentrations exist;

b. Develop and implement a mercury source control program;

c. Develop and implement a monitoring system to quantify either mercury loads or loads reduced through treatment, source control, and other management efforts;

d. Monitor levels of methylmercury in discharges;

e. Conduct or cause to be conducted studies aimed at better understanding mercury fate, transport, and biological uptake in San Francisco Bay and tidal areas;

f. Develop an equitable allocation-sharing scheme in consultation with Caltrans (see below) to address Caltrans roadway and non-roadway facilities in the program area, and report the details to the Water Board;

g. Prepare an Annual Report that documents compliance with the above requirements and documents either mercury loads discharged, or loads reduced through ongoing pollution prevention and control activities; and

h. Demonstrate progress toward (a) the interim loading milestone, or (b) attainment of the allocations shown in Individual WLAs (see Table 4-w of the Basin Plan amendment), by using one of the following methods:

(1) Quantify the annual average mercury load reduced by implementing

i. Pollution prevention activities, and
ii. Source and treatment controls. The benefit of efforts to reduce mercury-related risk to wildlife and humans should also be quantified. The Water Board will recognize such efforts as progress toward achieving the interim milestone and the mercury-related water quality standards upon which the allocations and corresponding load reductions are based. Loads reduced as a result of actions implemented after 2001 (or earlier if actions taken are not reflected in the 2001 load estimate) may be used to estimate load reductions.

(2) Quantify the mercury load as a rolling 5-year annual average using data on flow and water column mercury concentrations.

(3) Quantitatively demonstrate that the mercury concentration of suspended sediment that best represents sediment discharged with urban runoff is below the suspended sediment target.

C.11-6 Urban runoff management agencies have a responsibility to oversee various discharges within the agencies' geographic boundaries. However, if it is determined that a source is substantially contributing to mercury loads to the Bay or is outside the jurisdiction or authority of an agency, the Water Board will consider a request from an urban runoff management agency that may include an allocation, load reduction, and/or other regulatory requirements for the source in question.

Specific Provision C.11 Requirements

The C.11 provisions implement the mercury TMDL and follow the general approach for sediment-bound pollutants discussed above where we seek to build our understanding and level of certainty concerning control actions by implementing actions in a phased approach. We then expand implementation of those actions that prove effective, and perhaps scale back or discontinue those that are not effective. Accordingly, there are some provisions that will be implemented throughout the Region, some that will be tested on a limited basis first before making the decision to expand region-wide in the next permit term. Some of the measures are companion measures for efforts targeting PCBs.

Provision C.11.a. Mercury is found in a wide variety of consumer products (e.g., fluorescent bulbs) that are subject to recycling requirements. These recycling efforts are already happening throughout the Region, and Provision C.11.a requires promotion, facilitation and/or participation in these region-wide recycling efforts to increase effectiveness and public participation.

Provision C.11.b. The remand resolution of the SF Bay Mercury TMDL made it clear that methyl mercury monitoring must be required of all NPDES Permittees. Methyl mercury is the most toxic form of mercury, and there is very little information, if any, regarding the concentrations of methyl mercury found in urban runoff. The purpose of the monitoring required through this provision is to obtain seasonal information and to assess the magnitude and spatial/temporal patterns of methylmercury concentrations in urban runoff.

Provisions C.11.c through Provision C.11.f relate to identical C.12 Provisions for PCBs. For each of these, sites for pilot studies will primarily be chosen on the basis of the potential for reducing PCB loads, but consideration will be given to mercury removal in the final design and implementation of the studies. For more information, see the fact sheet discussions for
Provisions C.12.c, d, e, and f and Provision C.2.g.

Provision C.11.g implements the TMDL requirement that Permittees measure mercury loads and loads reduced from program activities. There are three options for accomplishing this requirement: quantifying mercury loads reduced through implemented control measures, quantify mercury loading into the Bay from urban runoff, or demonstrating that the concentration of mercury on suspended sediment particles is below the sediment target of 0.2 ppm. It is likely that the first option will be chosen, and this will require development of an accounting system to establish what load reductions result from program activities. This will not be difficult for those measures that involve capture and measurement of mercury-containing sediment, but it will be more challenging for efforts that do not involve direct measurement.

Provision C.11.h is equivalent to Provision C.12.h for PCBs and is motivated by the same remaining technical uncertainties.

Provision C.11.i requires actions that manage human health risk due to mercury and PCBs. These may include efforts to communicate the health risks of eating Bay fish and other efforts aimed at high risk-communities.

Provision C.11.j requires an allocation sharing scheme to be developed in cooperation with Caltrans. The urban runoff TMDL allocation implicitly includes loads from Caltrans facilities.

C.12. PCBs Controls

The C.12 provisions are consistent with the regulatory approach and implementation plan of the San Francisco Bay PCBs TMDL adopted by the Water Board. They follow the general approach for sediment-bound pollutants discussed above where we seek to build our understanding and level of certainty concerning control actions by implementing actions in a phased approach. We then expand implementation of those actions that prove effective, and perhaps scale back or discontinue those that are not effective. Accordingly, there are some provisions that will be implemented throughout the region, some that will be tested on a limited basis first before making the decision to expand region-wide in the next permit term.

Fact Sheet Findings in Support of Provision C.12

C.12-2 On February 13, 2008, the Water Board adopted a Basin Plan amendment establishing a TMDL for PCBs in San Francisco Bay and an implementation plan to achieve the TMDL. Approval by the State Water Board and USEPA is pending. The following excerpts from the TMDL implementation plan are relevant to implementation of the municipal stormwater permit.

"Stormwater runoff wasteload allocations shall be achieved within 20 years and shall be implemented through the NPDES stormwater permits issued to stormwater runoff management agencies and the California Department of Transportation (Caltrans). The urban stormwater runoff wasteload allocations implicitly include all current and future permitted discharges, not otherwise addressed by another allocation, and unpermitted discharges within the geographic boundaries of stormwater runoff management agencies including, but not limited to, Caltrans roadway and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.

Requirements in each NPDES permit issued or reissued shall be based on an updated assessment of best management practices and control measures intended to reduce PCBs in urban stormwater runoff. Control measures implemented by stormwater runoff management agencies and other entities (except construction and industrial sites) shall reduce PCBs in stormwater runoff to the maximum extent practicable. Control measures for construction and industrial sites shall reduce discharges based on best available technology economically achievable. All permits shall remain consistent with Section 4.8 - Stormwater Discharges.

In the first five-year permit term, stormwater Permittees will be required to implement control measures on a pilot scale to determine their effectiveness and technical feasibility. In the second permit term, stormwater Permittees will be required to implement effective control measures, that will not cause significant adverse environmental impacts, in strategic locations, and to develop a plan to fully implement control measures that will result in

attainment of allocations, including an analysis of costs, efficiency of control measures and an identification of any significant environmental impacts. Subsequent permits will include requirements and a schedule to implement technically feasible, effective and cost efficient control measures to attain allocations. If, as a consequence, allocations cannot be attained, the Water Board will take action to review and revise the allocations and these implementation requirements as part of adaptive implementation.

In addition, stormwater Permittees will be required to develop and implement a monitoring system to quantify PCBs urban stormwater runoff loads and the load reductions achieved through treatment, source control and other actions; support actions to reduce the health risks of people who consume PCBs-contaminated San Francisco Bay fish; and conduct or cause to be conducted monitoring, and studies to fill critical data needs identified in the adaptive implementation section.

Stormwater runoff management agencies have a responsibility to oversee various discharges within the agencies' geographic boundaries. However, if it is determined that a source is substantially contributing to PCBs loads to the Bay or is outside the jurisdiction or authority of an agency the Water Board will consider a request from an stormwater runoff management agency which may include an allocation, load reduction, and/or other regulatory requirements for the source in question."

C.12-3 Some PCB congeners have dioxin-like properties. Dioxins are persistent, bioaccumulative, toxic compounds that are produced from the combustion of organic materials in the presence of chlorine. Dioxins enter the air through fuel and waste emissions, including diesel and other motor vehicle exhaust fumes and trash incineration, and are carried in rain and contaminate soil. Dioxins bioaccumulate in fat, and most human exposure occurs through the consumption of animal fats, including those from fish. Therefore, the actions targeting PCBs will likely have the simultaneous benefit of addressing a portion of the dioxin impairment resulting from dioxin-like PCBs.

Specific Provision C.12 Requirements

Provision C.12.a. PCBs were used in a variety of electrical devices and equipment, some of which still can be found during industrial inspections. Provision C.12.a requires the stormwater management agencies to ensure that industrial inspectors can identify PCBs or PCB-containing equipment during their inspections and make sure appropriate agencies are notified if they are found. There is enough experience and/or background knowledge about the presence of such PCB-containing equipment that this measure should be implemented region-wide during this permit term.

Provision C.12.b. PCBs are used in a variety of building materials like caulks and adhesives. PCBs contained in such materials can be liberated and transported in runoff during and after demolition and renovation activities. At this point, it is not known how extensive this type of PCB contamination is in the region. Therefore, the expectation for

this permit term is that Permittees conduct pilot studies (Provision C.12.b) that includes evaluation of the presence of PCBs in such materials, sampling and analysis, and BMP development to prevent PCBs in these materials from being released into the environment during demolition and renovation. Conducting these pilot tests and reporting results will help determine if control measures for PCBs from these sources should be implemented in a more widespread fashion in the next permit term.

Provisions C.12.c and C.12.d form the core of PCB-related efforts for this permit term, and these efforts are crucial for the iterative development of effective control measures for PCBs and other sediment-bound pollutants in future permit terms. The overarching purpose of these two provisions is to conduct five comprehensive pilot studies in locations known to contain high levels of PCBs. The pilot studies will involve a combination of efforts including abatement of the on-land PCB contamination (Provision C.12.c) as well as exploration of sediment management practices (C.12.d) that can be implemented by municipalities to control migration of the PCBs away from the source of contamination. We expect that a suite of control measures will be applied in these five pilot regions to determine the optimum suite of measures for controlling PCB contamination and preventing its transport through the storm drain system. The lessons learned through these pilot efforts will inform the direction of future efforts targeting contaminated zones throughout the Region in subsequent permit terms.

Provision C.12.e. One promising management practice for addressing a wide range of sediment-bound contaminants, including PCBs is on-site treatment. Provision C.12.e requires selection of 10 locations for pilot studies spanning treatment types as described in the Provision. This effort can be conducted in conjunction with Provision C.12.d such that on-site treatment efforts conducted as part of C.12.d can be counted toward accomplishing C.12.e requirements.

Provision C.12.f. Another promising management practice is the diversion of certain flows to the sanitary sewers to be treated by the local POTWs. Provision C.12.f requires an evaluation of locations for diversion pilot studies and implementation of pilot studies at five pump stations. This effort can be conducted in conjunction with Provision C.12.d such that POTW diversion efforts conducted as part of C.12.d can be counted toward accomplishing C.12.f requirements. Also see discussion under Provision C.2.g.

Provision C.12.g requires, consistent with the approach taken in the PCBs TMDL, development of a monitoring system to quantify PCBs loads and loads reduced through source control, treatment and other management measures. This monitoring system will be used to determine progress toward meeting TMDL load allocations. This system should establish the baseline loading or loads reduced against which to compare future loading and load reductions.

Provision C.12.h. There are still uncertainties surrounding the magnitude and nature of PCBs reaching the Bay in urban runoff and the ultimate fate of such PCBs, including biological uptake. Provision C.12.h requires that Permittees ensure that fate and transport studies of PCBs in urban runoff are completed.

Provision C.12.i. requires actions that manage human health risk due to mercury and PCBs. These may include efforts to communicate the health risks of eating Bay fish and other efforts aimed at high risk-communities.

C.13. Copper Controls

Chronic and acute site-specific objectives (SSOs) for dissolved copper have been established in all segments of San Francisco Bay. The plan to implement the SSOs and ensure the achievement and ongoing maintenance of the SSOs in the entire Bay includes two types of actions for urban runoff management agencies. These actions from the SSO implementation are implemented through this permit as provisions to control urban runoff sources of copper as well as measures to resolve remaining technical uncertainties for copper fate and effects in the Bay.

The control measures for urban runoff target significant sources of copper identified in a report produced in 2004 for the Clean Estuary Partnership.[120] This report updated information on sources of copper in urban runoff, loading estimates and associated level of uncertainty, and summarized feasible control measures and priorities for further investigation. Accordingly, the permit provisions target major sources of copper including vehicle brake pads, architectural copper, copper pesticides, and industrial copper use.

Fact Sheet Findings in Support of Provision C.13.

C.13-1 Urban runoff is a conveyance mechanism by which copper reaches San Francisco Bay.

C.13-2 Copper has the reasonable potential to cause or contribute to exceedances of copper water quality standards in San Francisco Bay.

C.13-3 Site specific water quality objectives for dissolved copper have already been adopted for South San Francisco Bay will soon be adopted for the rest of the Bay.

C.13-4 The Permit requirements to control copper to the MEP are necessary to implement and support ongoing achievement of the site-specific water quality objectives.

Specific Provision C.13. Requirements

Provision C.13.a. Copper is used as an architectural feature in roofs, gutters and downspouts. When these roofs are cleaned with aggressive cleaning solutions, substantial amounts of copper can be liberated. The provision C.13.a for architectural copper involves a variety of strategies ranging from BMPs to prohibition against discharge of these cleaning wastes to the storm drain.

[120] TDC (TDC Environmental). 2004. *Copper Sources in Urban Runoff and Shoreline Activities*. Prepared for the Clean Estuary Partnership.

Provision C.13.b. Copper is commonly used as an algaecide in pools, spas, and fountains. The provision C.13.b prohibits discharge to the storm drain of copper-containing wastewater from such amenities.

Provision C.13.c. Vehicle brake pads are a large source of copper to the urban environment. There are cooperative efforts (e.g., the Brake Pad Partnership) evaluating the potential effects of brake wear debris on water quality. This cooperative effort could result in voluntary actions to reduce the amount of copper in automobile brake pads. However, this voluntary reduction is uncertain, and some aftermarket brake pads are possibly unaffected by the voluntary action. Moreover, the benefits of copper content reduction might be slowly realized because there is a great deal of wear debris already deposited on watersheds, and this wear debris will continue to be deposited as long as copper-containing brake pads are in use. Therefore, there might need to be additional measures addressing copper-containing wear debris on the part of urban stormwater management agencies. Provision C.13.c requires ongoing participation in the cooperative efforts of the Partnership.

Provision C.13.d Some industrial facilities likely use copper or have sources of copper (e.g., plating facilities, metal finishers, auto dismantlers). This control measure requires municipalities to include these facilities in their inspection program plans.

The most recent Staff Report[121] for the SSOs north of the Dumbarton Bridge also describes several areas of remaining technical uncertainty, and **Provision C.13.e** requires studies to address these uncertainties. Two of these areas are of particular concern, and urban runoff management agencies are required to conduct or cause to be conducted studies to help resolve these two uncertainties.

The first uncertainty concerns copper's tendency, even at low concentrations, to cause a variety of sublethal (not resulting in death, but in impaired function) effects. The studies documenting such effects have, so far, been conducted in the laboratory in experiments modeling freshwater systems, and many of them have not yet been published. A number of uncertainties need to be resolved before interpretation and extension to marine or estuarine systems can be attempted.[122]

The second uncertainty is that surface sediment samples have exhibited toxicity to test organisms at a number of sites throughout the Bay. Research has shown that sediment toxicity to bivalve embryos is caused by "elevated concentrations of divalent cations….with copper as the most probable cause of toxicity." Additional studies are needed to further examine whether water and sediment toxicity tests used in the RMP are accurate predictors of impacts on the Bay's aquatic and benthic communities.

[121] SFBRWQCB (San Francisco Bay Regional Water Quality Control Board). 2007. *Copper Site-Specific Objectives in San Francisco Bay: Proposed Basin Plan Amendment and Draft Staff Report.* June.
[122] Ibid.

C.14. Polybrominated Diphenyl Ethers (PBDE), Legacy Pesticides and Selenium

This section is predicated on the fact that legacy pesticides, PBDEs, and selenium are either known to impair or potentially impair Bay and tributary beneficial uses. Further, urban stormwater is a likely or potential cause or contributor to such impairment. The requirements for this permit term are primarily information gathering consistent with Provision C.1. Namely, this provision requires that Permittees gather information on a number of pollutants of concern (e.g., PBDEs, DDT, dieldrin, chlordane, selenium) for which TMDLs are planned or are in the early stages of development.

The goals of the provisions in this section are the following: One goal is to determine the concentrations and distribution of these pollutants and if urban runoff is a conveyance mechanism associated with their possible impairment of San Francisco Bay.

A second goal is to gather and provide information to allow calculation of PBDEs, legacy pesticides, and selenium loads to San Francisco Bay from urban runoff conveyance systems. A third goal is to identify control measures and/or management practices to eliminate or reduce discharges of PBDEs, legacy pesticides, or selenium conveyed by urban runoff conveyance systems. The Permittees are encouraged to work with the other municipal stormwater management agencies in the Bay Region to implement a plan to identify, assess, and manage controllable sources of these pollutants in urban runoff. The control actions initiated for PCBs will form the core of initial actions targeting sediment bound pollutants like these. It is very likely that some of these PCB control measures (see Provision C.12) warrant consideration for the control of sediment bound pollutants like PBDEs, legacy pesticides, and possibly others as well.

C.15. Exempted and Conditionally Exempted Discharges

Legal Authority

Broad Legal Authority: CWA section 402(p)(3)(B)(ii-iii), CWC section 1337, and Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B) requires MS4 operators, "to detect and remove (or require the discharger to the municipal separate storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(1) provides that the Permittees shall prevent all types of illicit discharges into the MS4 except for certain non-stormwater discharges.

Fact Sheet Findings in Support of Provision C.15.

Prohibition A.1. effectively prohibits the discharge of non-stormwater discharges into the storm sewer system. However, we recognize that certain types of non-stormwater discharges may be exempted from this prohibition if they are unpolluted and do not violate water quality standards. Other types of non-stormwater discharges may be conditionally exempted from Prohibition A.1. if the discharger employs appropriate control measures and BMPs prior to discharge, and monitors and reports on the discharge.

Specific Provision C.15. Requirements

Provision C.15.a. Exempted Non-Stormwater Discharges. This section of the Permit identifies the types of non-stormwater discharges that are exempted from Discharge Prohibition A.1. if such discharges are unpolluted and do not violate water quality standards. If any exempted non-stormwater discharge is identified as a source of pollutants to receiving waters, the discharge shall be addressed as a conditionally exempted discharge and must meet the requirements of Provision C.15.b.

Provision C.15.b. Conditionally Exempted Non-Stormwater Discharges. This section of the Permit identifies the types of non-stormwater discharges that are conditionally exempted from Discharge Prohibition A.1. if they are identified by Permittees or the Executive Officer as not being sources of pollutants to receiving waters. To eliminate adverse impacts from such discharges, project proponents shall develop and implement appropriate pollutant control measures and BMPs, and where applicable, shall monitor and report on the discharges in accordance with the requirements specified in Provision C.15.b. The intent of Provision C.15.b.'s requirements is to facilitate Permittees in regulating these non-stormwater discharges to the storm drains since the Permittees have ultimate responsibility for what flows in those storm drains to receiving waters. For all planned discharges, the nature and characteristic of the discharge must be verified prior to the discharge so that effective

pollution control measures are implemented, if deemed necessary. Such preventative measures are cheaper by far than post-discharge cleanup efforts.

Provision C.15.b.i.(1). Pumped Groundwater from Non Drinking Water Aquifers. These aquifers tend to be shallower than drinking water aquifers and more subject to contamination. The wells must be purged prior to sample collection. Since wells are purged regularly, this section of the Permit requires twice a year monitoring of these aquifers. Pumped groundwater from non drinking water aquifers, which are owned and/or operated by Permittees who pump groundwater as drinking water, are conditionally exempted as long as the discharges meet the requirements in this section of the Permit.

Provision C.15.b.i.(2). Pumped Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains. This section of the Permit encourages these types of discharges to be directed to landscaped areas or bioretention units, when feasible. If the discharges cannot be directed to vegetated areas, it requires testing to determine if the discharge is uncontaminated. Uncontaminated discharges shall be treated, if necessary, to meet specified discharge limits for turbidity and pH.

Provision C.15.b.ii. Air Conditioning Condensate. Small air conditioning units are usually operated during the warm weather months. The condensate from these units are uncontaminated and unlikely to reach a storm drain or waters of the State because they tend to be low in volume and tend to evaporate or percolate readily. Therefore, condensate from small air conditioning units should be discharged to landscaped areas or the ground. Commercial and industrial air conditioning units tend to produce year-round continuous flows of condensate. It may be difficult to direct a continuous flow to a landscaped area large enough to accommodate the volume. While the condensate tends to be uncontaminated, it picks up contaminates on its way to the storm drain and/or waters of the State and can contribute to unnecessary dry weather flows. Therefore, discharges from new commercial and industrial air conditioning units should be discharged to landscaped areas, if they can accommodate the continuous volume, or to the sanitary sewer, with the local sanitary sewer agency's approval. If none of these options are feasible, air conditioning condensate can be directly discharged into the storm drain. If descaling or anti-algal agents are used to treat the air conditioning units, residues from these agents must be properly disposed of.

Provision C.15.b.iii. Planned, Unplanned, and Emergency Discharges of the Potable Water System.. Potable water discharges contribute pollution to water quality in receiving waters because they contain chlorine or chloramines, two very toxic chemicals to aquatic life. Potable water discharges can cause erosion and scouring of stream and creek banks, and sedimentation can result if effective BMPs are not implemented. Therefore, appropriate dechlorination and monitoring of chlorine residual, pH and turbidity, particularly for planned discharges of potable water, are crucial to prevent adverse impacts in the receiving waters.

This section of the Permit requires Permittees to notify Water Board staff at least one week in advance for planned discharges of potable water with a flowrate of 250,000 gpd or more or a total 500,000 gallons or more. These planned discharges must meet specified discharge benchmarks for chlorine residual, pH, and turbidity.

To address unplanned discharges of potable water such as non-routine water line breaks, leaks, overflows, fire hydrant shearing, and emergency flushing, this section of the Permit requires Permittees to implement administrative BMPs such as source control measures, managerial practices, operations and maintenance procedures or other measures to reduce or prevent potential pollutants from being discharged during these events. This Provision also contains specific notification and monitoring requirements to assess immediate and continued impacts to water quality when these events happen.

This section of the Permit acknowledges that in cases of emergency discharge, such as from firefighting and disasters, priority of efforts shall be directed toward life, property, and the environment, in that order. Therefore, Permittees are required to implement BMPs that do not interfere with immediate emergency response operations or impact public health and safety. Reporting requirements for such events shall be determined by Water Board staff on a case-by-case basis.

Provision C.15.b.iv. Individual Residential Car Washing. Soaps and automotive pollutants such as oil and metals can be discharged into storm drains and waterbodies from individual residential car washing activities. However, it is not feasible to prohibit individual residential car washing because it would require too much resources for the Permittees to regulate the prohibition. This section of the Permit requires Permittees to encourage residents to implement BMPs such as directing car washwaters to landscaped areas, using as little detergent as possible, and washing cars at commercial car washing facilities.

Provision C.15.b.v. Swimming Pool, Hot tub, Spa, and Fountain Water Discharges. These types of discharges can potentially contain high levels of chlorine and copper. Permittees shall prohibit the discharge of such waters that contain chlorine residual, copper algaecide, filter backwash, or other pollutants to the storm drains or to waterbodies. High flow rates into the storm drain or waterbody could cause erosion and scouring of the stream or creek banks. These types of discharges should be directed to landscaped areas large enough to accommodate the volume or to the sanitary sewer, with the local sanitary sewer's approval. If these discharge options are not feasible and the swimming pool, hot tub, spa, or fountain water discharges must enter the storm drain, they must be dechlorinated to non-detectable levels of chlorine and they must not contain copper algaecide. Flow rate should be regulated to minimize downstream erosion and scouring. We strongly encourage local sanitary sewer agencies to accept these types of non-stormwater discharges, especially for new and rebuilt ones where a connection could be achieved with marginal effort. This Provision also requires Permittees to coordinate with local sanitary agencies in these efforts.

Provision C.15.b.v.i. Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering. Fertilizers and pesticides can be washed off of landscaping and discharged into storm drains and waterbodies. However, it is not feasible to prohibit excessive irrigation because it would require too much resource for the Permittees to regulate such a prohibition. It is also not feasible for individual Permittees to ban the use fertilizers and pesticides. This section of the Permit requires Permittees to promote and/or work with potable water purveyors to promote measures that minimize runoff and pollutant loading from excess irrigation, such as conservation programs, outreach regarding overwatering and less toxic options for pest control and landscape management, the use of drought tolerant and native vegetation, and to implement appropriate illicit discharge response and enforcement for ongoing, large-volume landscape irrigation runoff to the storm drains.

Provision C.15.b.vii. requires Permittees to identify and describe additional types and categories of discharges not listed in Provision C.15.b., that they propose to conditionally exempt from Prohibition A.1., in periodic submittals to the Executive Officer.

Provision C.15.b.viii. establishes a mechanism to authorize under the Permit non-stormwater discharges owned or operated by the Permittees.

Attachment J: Standard NPDES Stormwater Permit Provisions

The following legal authority applies to Attachment J:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Standard provisions, reporting requirements, and notifications are consistent to all NPDES permits and are generally found in federal NPDES regulation 40 CFR 122.41.

Attachment J includes Standard Provisions. These Standard Provisions ensure that NPDES stormwater permits are consistent and compatible with USEPA's federal regulations. Some Standard Provision sections specific to publicly owned sewage treatment works are not included in Attachment J.

Fact Sheet Attachment 6.1

Construction Inspection Data

Construction Inspection Data

Facility/Site Inspected	Inspection Date	Weather During Inspection	Inches of Rain Since Last Inspection	Enforcement Response Level	Problem(s) Observed							Specific Problem(s)	Resolution			Comments/ Rationale for Longer Compliance Time
					Erosion Control	Runon and Runoff Control	Sediment Control	Active Treatment System	Good Site Management	Non Stormwater Management	Illicit Discharge		Problems Fixed	Need More Time	Escalate Enforcement	
Panoramic Views	9/30/08	Dry	0	Written Notice			x					Driveway not stabilized				
Panoramic Views	10/15/08	Dry	0.5										x			50' of driveway rocked.
Panoramic Views	11/15/08	Rain	3	Stop Work	x		x				x	Uncovered graded lots eroding; Sediment entering a stormdrain that didn't have adequate protection.				
Panoramic Views	11/15/08	Drizzling	0.25										x			Lots blanketed. Storm drains pumped. Street cleaned.
Panoramic Views	12/1/08	Dry	4	Verbal Warning					x			Porta potty next to stormdrain.	x			Porta potty moved away from stormdrain.
Panoramic Views	1/15/08	Rain	3.25	Written Warning	x					x		Fiber rolls need maintenance; Tire wash water flowing into street				
Panoramic Views	1/25/09	Dry	0										x			Fiber rolls replaced.

Facility/Site Inspected	Inspection Date	Weather During Inspection	Inches of Rain Since Last Inspection	Enforcement Response Level	Problem(s) Observed							Specific Problem(s)	Resolution			Comments/ Rationale for Longer Compliance Time
					Erosion Control	Runon and Runoff Control	Sediment Control	Active Treatment System	Good Site Management	Non Stormwater Management	Illicit Discharge		Problems Fixed	Need More Time	Escalate Enforcement	
Panoramic Views	2/28/09	Rain	2.4	Stop Work	x		x				x	Slope erosion control failed. Fiber rolls at the bottom of the hill flattened. Sediment laden discharge skipping protected stormdrains and entering unprotected stormdrains.				
Panoramic Views	2/28/09	Rain	0.1											x		Fiber rolls replaced. Silt fences added. More stormdrains protected. Streets cleaned. Slope too soggy to access.
Panoramic Views	3/15/09	Dry	1	Citation with Fine					x		x	Paint brush washing not designated	x			Street and storm drains cleaned. Slopes blanketed.
Panoramic Views	4/1/09	Dry	0.5	Citation with Fine							x	Concrete washout overflowed; Evidence of illicit discharge				
Panoramic Views	4/15/09	Dry	0										x			Concrete washout replaced; Storm drain and line cleaned.

Fact Sheet Attachment 10.1

303(d) Trash Resolution and Staff Report February 2009

Available at
http://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2009/R2-2009-0008.pdf

ATTACHMENT A

Provision C.3.b.
Sample Reporting Table

Provision C.3.b. Sample Reporting Table
Regulated Projects Approved During the Reporting Period 07/08 to 06/09
City of Eden Annual Report FY 2008-09

Project Name, Project Number, Location, Street Address,	Name of Developer, Project Phase No.,[1] Project Type & Description	Project Watershed[2]	Total Site Area, Total Area of Land Disturbed	Total New and/or Replaced Impervious Surface Area[3]	Total Pre- and Post-Project Impervious Surface Area[4]	Status of Project[5]	Source Control Measures	Site Design Measures	Treatment Systems Installed[6]	Operation & Maintenance Responsibility Mechanism	Hydraulic Sizing Criteria	Alternative Compliance Measures[7,8]	HM Controls[9,10]
Private Projects													
Nirvana Estates; Project #05-122; Property bounded by Paradise Lane, Serenity Drive, and Eternity Circle; Eden, CA	Heavenly Homes; Phase 1; Construction of 156 single-family homes and 45 townhomes with commercial shops and underground parking.	Runoff from site drains to Babbling Brook	25 acres site area, 21 acres disturbed	20 acres new	20 acres post-project	Application submitted 12/29/07, Application deemed complete 1/30/08, Project approved 7/16/08	Stenciled inlets, street sweeping, covered parking, car wash pad drains to sanitary sewer	Pervious pavement for all driveways, sidewalks, and commercial plaza	vegetated swales, detention basins,	Conditions of Approval require Homeowners Association to perform regular maintenance. Written record will be made available to City inspectors.	WEF Method	n/a	Contra Costa sizing charts used to design detention basin at Peace Park. Also contributed to in-stream projects in Babbling Brook
Barter Heaven; Project #05-345; Shoppers Lane & Bargain Avenue; 14578 Shoppers Lane, Eden, CA	Deals Galore Development Co.; Demolition of strip mall and parking lot and construction of 500-unit 5-story shopping mall with underground parking and limited outdoor parking.	Runoff from site drains to Bargain River	5 acres site area, 3 acres disturbed	1 acre new, 2 acres replaced	3.5 acres pre-project, 4.5 acres post-project	Application submitted 7/9/08, Application deemed complete 8/2/08, Project approved 12/12/08	Stenciled inlets, trash enclosures, underground parking, street sweeping	One-way aisles to minimize outdoor parking footprint; roof drains to planter boxes	tree wells with bioretention; planter boxes with bioretention	Conditions of Approval require property owner (landlord) to perform regular maintenance. Written record will be made available to City inspectors.	BMP Handbook Method	$ 250,000 paid to Renew Regional Project sponsored by Riverworks Foundation, 243 Water Way, Eden, CA 408-345-6789	Renew Project includes treatment and HM Controls

Provision C.3.b. Sample Reporting Table
Regulated Projects Approved During the Reporting Period 07/08 to 06/09
City of Eden Annual Report FY 2008-09

Project Name, Project Number, Location, Street Address,	Name of Developer, Project Phase No.,[1] Project Type & Description	Project Watershed[2]	Total Site Area, Total Area of Land Disturbed	Total New and/or Replaced Impervious Surface Area[3]	Total Pre- and Post-Project Impervious Surface Area[4]	Status of Project[5]	Source Control Measures	Site Design Measures	Treatment Systems Installed[6]	Operation & Maintenance Responsibility Mechanism	Hydraulic Sizing Criteria	Alternative Compliance Measures[7,8]	HM Controls[9,10]
New Beginnings; Project No. #05-456; Hope Street & Chance Road; 567 Hope Boulevard, Eden, CA	Fresh Start Corporation; Demolition of abandoned warehouse and construction of a 5-story building with 250 low-income rental housing units.	Runoff from site drains to Poor Man Creek	5 acres site area, 100,000 ft^2 disturbed	1 acre replaced	2 acres pre-project, 1 acre post-project	Application submitted 2/9/09, Application deemed complete 4/10/09; Project approved 6/30/09	Trash enclosures, underground parking, street sweeping, car wash pad drains to sanitary sewer	roof drains to landscaping	parking runoff flows to six bioretention units/gardens	Conditions of Approval require property owner (landlord) to perform regular maintenance. Written record will be made available to City inspectors.	BMP Handbook Method	n/a	n/a
Public Projects													
Gridlock Relief, Project No. #05-99, ABC Blvd between Main and Huett Streets, Eden, CA	City of Eden. Widening of ABC Blvd from 4 to 6 lanes	Runoff from site drains to Congestion River	6 acres site area, 3 acres disturbed	2 acres new, 1 acre replaced	4 acres pre-project, 6 acres post-project	Application submitted 7/9/06, Application deemed complete 10/6/08, Project approved 12/9/08, Construction scheduled to begin 7/10/09	none	ABC Blvd sloped to drain runoff into landscaped areas in median	Runoff leaving underdrain system of landscaped median is pumped to bioretention gardens along either side of ABC Blvd	Signed statement from City of Eden assuming post-construction responsibility for treatment BMP maintenance.	WEF Method	n/a	BAHM used to design and size stormwater treatment units so that increased runoff is detained.

Sample Reporting Table C.3.b. Footnotes

1. If a project is being constructed in Phases, use a separate row entry for each Phase.
2. State the watershed(s) that the Regulated Project drains to. Optional but recommended: Also state the downstream watershed(s).
3. State both the total new impervious surface area and the total replaced impervious surface area, as applicable.
4. For redevelopment projects state both the pre-project impervious surface area and the post-project impervious surface area.
5. State project application date; application deemed complete date; and final, major, staff-level discretionary review and approval date.
6. List stormwater treatment system(s) installed onsite or at a joint stormwater treatment system facility.
7. For Alternative Compliance at an offsite location in accordance with Provision C.3.e.i.(1), on a separate page, give a discussion of the alternative compliance site including the information specified in Provision C.3.b.v.(1)(m)(i) for the offsite project.
8. For Alternative Compliance by paying in-lieu fees in accordance with Provision C.3.e.i.(2), on a separate page, provide the information specified in Provision C.3.b.v.(1)(m)(ii) for the Regional Project.
9. If HM control is not required, state why not.
10. If HM control is required, state control method used (e.g., method to design and size device(s) or method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), biodetention unit(s), regional detention basin, or in-stream control).

Instructions for Provision C.3.b. Sample Reporting Table

1. **Project Name, Number, Location, and Street Address** – Include the following information:
   - Name of the project
   - Number of the project (if applicable)
   - Location of the project with cross streets
   - Street address of the project (if available)

2. **Name of Developer, Project Phase Number, Project Type, and Project Description** – Include the following information:
   - Name of the developer
   - Project phase name and/or number (only if the project is being developed in phases) – each phase should have a separate row entry
   - Type of development (i.e., new and/or redevelopment)
   - Description of development (e.g., 5-story office building, residential with 160 single-family homes with five 4-story buildings to contain 200 condominiums, 100 unit 2-story shopping mall, mixed use retail and residential development (apartments), industrial warehouse)

3. **Project Watershed**
   - State the watershed(s) that the Project drains into
   - Optional but recommended: Also state the downstream watershed(s)

4. **Total Site Area and Total Area of Land Disturbed** – State the total site area and the total area of land disturbed.

5. **Total New and/or Replaced Impervious Surface Area**
   - State the total new impervious surface area
   - State the total replaced impervious surface area, as applicable

6. **Total Pre- and Post-Project Impervious Surface Area –** For redevelopment projects, state both the pre-project impervious surface area and the post-project impervious surface area.

7. **Status of Project –** Include the following information:
   - Project application submittal date
   - Project application deemed complete date
   - Final, major, staff-level discretionary review and approval date

8. **Source Control Measures** – List all source control measures that have been or will be included in the project.

9. Site Design Measures – List all site design measures that have been or will be included in the project.

10. Treatment Systems Installed – List all post-construction stormwater treatment system(s) installed onsite and/or at a joint stormwater treatment system facility.

11. Operation and Maintenance Responsibility Mechanism – List the legal mechanism(s) that have been or will be used to assign responsibility for the maintenance of the post-construction stormwater treatment systems.

12. Hydraulic Sizing Criteria Used – List the hydraulic sizing criteria used for the Project.

13. Alternative Compliance Measures

- **Option 1: LID Treatment at an Offsite Location (Provision C.3.e.i.(1))** – On a separate page, give a discussion of the alternative compliance project including the information specified in Provision C.3.b.v.(1)(m)(i) for the offsite project.
- **Option 2: Payment of In-Lieu Fees (Provision C.3.e.i.(2))** – On a separate page, provide the information specified in Provision C.3.b.v.(1)(m)(ii).

14. HM Controls

- If HM control is not required, state why not
- If HM control is required, state control method used (e.g., method to design and size device(s), method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), biodetention unit(s), regional detention basins, or in-stream control)

ATTACHMENT B

Provision C.3.g.
Alameda Permittees
Hydromodification Management Requirements

Alameda Permittees Hydromodification Management Requirements

1. On-site and Regional Hydromodification Management (HM) Control Design Criteria

a. *Range of flows to control*: Flow duration controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 10 percent of the pre-project 2-year peak flow[123] up to the pre-project 10-year peak flow, except where the lower endpoint of this range is modified as described in Section 6 of this Attachment.

b. *Goodness of fit criteria*: The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control.

c. *Allowable low flow rate*: Flow control structures may be designed to discharge stormwater at a very low rate that does not threaten to erode the receiving waterbody. This flow rate (also called *Qcp*[124]) shall be no greater than 10 percent of the pre-project 2-year peak flow unless a modified value is substantiated by analysis of actual channel resistance in accordance with an approved User Guide as described in Section 6 of this Attachment.

d. *Standard HM modeling*: On-site and regional HM controls designed using the Bay Area Hydrology Model (BAHM[125]) and site-specific input data shall be considered to meet the HM Standard. Such use must be consistent with directions and options set forth in the most current BAHM User's Manual.[126] Permittees shall demonstrate to the satisfaction of the Executive Officer that any modifications of the BAHM made are consistent with the requirements of this Attachment and Provision C.3.f.

e. *Alternate HM modeling and design*: The project proponent may use a continuous simulation hydrologic computer model[127] to simulate pre-project and post-project runoff and to design HM controls. To use this method, the project proponent shall compare the

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[123] Where referred to in this Order, the 2-year peak flow is determined using a flood frequency analysis procedure based on USGS Bulletin 17 B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35–50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include USEPA's Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers' Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA's Storm Water Management Model (SWMM).

[124] Qcp is the allowable low flow discharge from a flow control structure on a project site. It is a means of apportioning the critical flow in a stream to individual projects that discharge to that stream, such that cumulative discharges do not exceed the critical flow in the stream.

[125] *The Bay Area Hydrology Model – A Tool for Analyzing Hydromodification Effects of Development Projects and Sizing Solutions*, Bicknell, J., D. Beyerlein, and A. Feng, September 26, 2006. Available at http://www.scvurppp-w2k.com/permit_c3_docs/Bicknell-Beyerlein-Feng_CASQA_Paper_9-26-06.pdf

[126] *The Bay Area Hydrology Model – A Tool for Analyzing Hydromodification Effects of Development Projects and Sizing Solutions*, Bicknell, J., D. Beyerlein, and A. Feng, September 26, 2006. Available at http://www.scvurppp-w2k.com/permit_c3_docs/Bicknell-Beyerlein-Feng_CASQA_Paper_9-26-06.pdf

[127] Such models include US EPA's Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA's Surface Water Management Model (SWMM).

pre-project and post-project model output for a rainfall record of at least 30 years, and shall show that all applicable performance criteria in 1.a-e above are met.

2. Impracticability Provision

Where conditions (e.g., extreme space limitations) prevent a project from meeting the HM Standard for a reasonable cost, *and* where the project's runoff cannot be directed to a regional HM control within a reasonable time frame, *and* where an in-stream measure is not practicable, the project shall use (1) site design for hydrologic source control, *and* (2) stormwater treatment measures that collectively minimize, slow, and detain[128] runoff to the maximum extent practicable. In addition, the project proponent shall provide for or contribute financially to an alternative HM project as set forth below:

a. *Reasonable cost*: To show that the HM Standard cannot be met at a reasonable cost, the project proponent must demonstrate that the total cost to comply with both the HM Standard and the Provision C.3.d treatment requirement exceeds 2 percent of the project construction cost, excluding land costs. Costs of HM and treatment control measures shall not include land costs, soil disposal fees, hauling, contaminated soil testing, mitigation, disposal, or other normal site enhancement costs such as landscaping or grading that are required for other development purposes.

b. *Regional HM controls:* A regional HM control shall be considered available if there is a planned location for the regional HM control and if an appropriate funding mechanism for a regional HM control is in place by the time of project construction.

c. *In-stream measures practicability:* In-stream measures shall be considered practicable when an in-stream measure for the project's watershed is planned and an appropriate funding mechanism for an in-stream measure is in place by the time of project construction.

d. *Financial contribution to an alternative HM project:* The difference between 2 percent of the project construction costs and the cost of the treatment measures at the site (both costs as described in Section 2.a of this Attachment) shall be contributed to an alternative HM project, such as a stormwater treatment retrofit, HM retrofit, regional HM control, or in-stream measure that is not otherwise required by the Water Board or other regulatory agency. Preference shall be given to projects discharging, in this order, to the same tributary, mainstem, watershed, then in the same municipality or county.

3. Record Keeping

Permittees shall collect and retain the following information for all projects subject to HM requirements:

a. Site plans identifying impervious areas, surface flow directions for the entire site, and location(s) of HM measures;

b. For projects using standard sizing charts, a summary of sizing calculations used;

c. For projects using the BAHM, a listing of model inputs;

[128] Stormwater treatment measures that detain runoff are generally those that filter runoff through soil or other media and include bioretention units, bioswales, basins, planter boxes, tree wells, media filters, and green roofs.

d. For projects using custom modeling, a summary of the modeling calculations with corresponding graph showing curve matching (existing, post-project, and post-project with HM controls curves);

e. For projects using the Impracticability Provision, a listing of all applicable costs and a brief description of the alternative HM Project (name, location, date of start up, entity responsible for maintenance); and

f. A listing, summary, and date of modifications made to the BAHM, including technical rationale. Permittees shall submit this list and explanation annually with the Annual Report. This may be prepared at the Countywide Program level and submitted on behalf of participating Permittees.

4. HM Control Areas

Applicable projects shall be required to meet the HM Standard when such projects are in areas of HM applicability shown in the Alameda Permittees' HM Map.[129] (available at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/muni/mrp/Final%20TO%20HM%20Maps.pdf). Plans to restore a creek reach may reintroduce the applicability of HM requirements; in these instances, Permittees may add, but shall not delete, areas of applicability accordingly.

To assist in location and evaluation of project applicability, the Alameda Permittees' HM Map depicts a number of features including the following:

- Hardened channels and culverts at least 24 inches in diameter (green solid or dashed lines);
- Natural channels (red lines);
- Boundaries of major watersheds (light blue lines); and
- Surface streets and highways (gray or black lines).

These data are of varying age, precision and accuracy and are not intended for legal description or engineering design. Watersheds extending beyond the County boundaries are shown for illustration purposes only. Project proponents are responsible for verifying and describing actual conditions of site location and drainage.

5. Alameda Permittees' HM Map is color-coded as follows:

a. Solid pink areas – Solid pink designates hilly areas, where high slopes (greater than 25 percent) occur. The HM Standard and all associated requirements apply in areas shown in solid pink on the map. In this area, the HM Standard does *not* apply if a project proponent demonstrates that all project runoff will flow through enclosed storm drains, existing concrete culverts, or fully hardened (with bed and banks continuously concrete-lined) channels to the tidal area shown in light gray.

b. Purple/red hatched areas – These are upstream of areas where hydromodification impacts are of concern because of factors such as bank instability, sensitive habitat, or restoration projects. The HM Standard and all associated requirements apply in areas

[129] The watercourses potentially susceptible to hydromodification impacts are identified based on an assessment approach developed by Balance Hydrologics (2003).

shown in purple/red (printer-dependant) hatch marking on the map. Projects in these areas may be subject to additional agency reviews related to hydrologic, habitat or other watershed-specific concerns.

c. Solid white areas – Solid white designates the land area between the hills and the tidal zone. This area may be susceptible to hydromodification unless the site is connected to storm drains that discharge to the tidal area. The HM Standard and all associated requirements apply to projects in solid white areas *unless* a project proponent demonstrates that all project runoff will flow through fully hardened channels.[130] Short segments of engineered earthen channels (length less than 10 times the maximum width of trapezoidal cross-section) can be considered resistant to erosion if located downstream of a concrete channel of similar or greater length and comparable cross-sectional dimensions. Plans to restore a hardened channel may affect the HM Standard applicability in this area.

d. Solid gray areas – Solid gray designates areas where streams or channels are tidally influenced or primarily depositional near their outfall in San Francisco Bay. The HM Standard does not apply to projects in this area. Plans to restore a hardened channel may affect the HM Standard applicability in this area.

e. Dark gray, *Eastern County* area – Dark gray designates the portion of eastern Alameda County that lies outside the discharge area of this NPDES permit. This area is in the Central Valley Regional Water Quality Control Board's jurisdiction.

6. Potential Exceptions to Alameda Permittees' HM Map Designations

The Program may choose to prepare a User Guide[131] to be used for evaluating individual receiving waterbodies using detailed methods to assess channel stability and watercourse critical flow. This User Guide would reiterate and collate established stream stability assessment methods that have been presented in the Program's HMP.[132] After the Program has collated its methods into a User Guide format, received approval of the User Guide from the Executive Officer,[133] and informed the public through such process as an electronic mailing list, the Permittees may use the User Guide to guide preparation of technical reports for the following: implementing the HM Standard using in-stream or regional HM controls; determining whether certain projects are discharging to a watercourse that is less susceptible (from point of discharge to the Bay) to hydromodification (e.g., would have a lower potential for erosion than set forth in these requirements); and/or determining if a watercourse has a higher critical flow and project(s) discharging to it are eligible for an alternative Qcp for the purpose of designing on-site or regional measures to control flows draining to these channels (i.e., the actual threshold of erosion-causing critical flow is higher than 10 percent of the 2-year pre-project flow). In no case shall the design value of Qcp exceed 50 percent of the 2-year pre-project flow.

[130] In this paragraph, *fully hardened channels* include enclosed storm drains, existing concrete culverts, or channels whose bed and banks are continuously concrete-lined to the tidal area shown in light gray on the map.
[131] The User Guide may be offered under a different title.
[132] The Program's HMP has undergone Water Board staff review and been subject to public notice and comment.
[133] The User Guide shall not introduce a new concept, but rather reformat existing methods; therefore, Executive Officer approval is appropriate.

ATTACHMENT C

Provision C.3.g.
Contra Costa Permittees
Hydromodification Management Requirements

Contra Costa Permittees Hydromodification Management Requirements

1. Demonstrating Compliance with the Hydromodification Management (HM) Standard

Contra Costa Permittees shall ensure that project proponents shall demonstrate compliance with the HM Standard by demonstrating that any one of the following four options is met:

a. *No increase in impervious area.* The project proponent may compare the project design to the pre-project condition and show that the project will not increase impervious area and also will not facilitate the efficiency of drainage collection and conveyance.

b. *Implementation of hydrograph modification IMPs.* The project proponent may select and size IMPs to manage hydrograph modification impacts, using the design procedure, criteria, and sizing factors specified in the Contra Costa Clean Water Program's *Stormwater C.3 Guidebook*. The use of flow-through planters shall be limited to upper-story plazas, adjacent to building foundations, on slopes where infiltration could impair geotechnical stability, or in similar situations where geotechnical issues prevent use of IMPs that allow infiltration to native soils. Limited soil infiltration capacity in itself does not make use of other IMPs infeasible.

c. *Estimated post-project runoff durations and peak flows do not exceed pre-project durations and peak flows.* The project proponent may use a continuous simulation hydrologic computer model such as USEPA's Hydrograph Simulation Program—Fortran (HSPF) to simulate pre-project and post-project runoff, including the effect of proposed IMPs, detention basins, or other stormwater management facilities. To use this method, the project proponent shall compare the pre-project and post-project model output for a rainfall record of at least 30 years, using limitations and instructions provided in the Program's *Stormwater C.3 Guidebook*, and shall show that the following criteria are met:

i. For flow rates from 10 percent of the pre-project 2-year runoff event (0.1Q2) to the pre-project 10-year runoff event (Q10), the post-project discharge rates and durations shall not deviate above the pre-project rates and durations by more than 10 percent over more than 10 percent of the length of the flow duration curve.

ii. For flow rates from 0.5Q2 to Q2, the post-project *peak flows* shall not exceed pre-project peak flows. For flow rates from Q2 to Q10, post-project peak flows may exceed pre-project flows by up to 10 percent for a 1-year frequency interval. For example, post-project flows could exceed pre-project flows by up to 10 percent for the interval from Q9 to Q10 or from Q5.5 to Q6.5, but not from Q8 to Q10.

d. *Projected increases in runoff peaks and durations will not accelerate erosion of receiving stream reaches.* The project proponent may show that, because of the specific characteristics of the stream receiving runoff from the project site, or because of proposed stream restoration projects, or both, there is little likelihood that the cumulative impacts from new development could increase the net rate of stream erosion to the extent that beneficial uses would be significantly impacted. To use this option, the project proponent shall evaluate the receiving stream to determine the relative risk of erosion impacts and take the appropriate actions as described below and in Table A-1. Projects 20 acres or larger in total area shall not use the medium risk methodology in *(d)ii* below.

i. ***Low Risk.*** In a report or letter report, signed by an engineer or qualified environmental professional, the project proponent shall show that all downstream channels between the project site and the Bay/Delta fall into one of the following *low-risk* categories.

(1) Enclosed pipes.

(2) Channels with continuous hardened beds and banks engineered to withstand erosive forces and composed of concrete, engineered riprap, sackcrete, gabions, mats, and such. This category excludes channels where hardened beds and banks are not engineered continuous installations (i.e., have been installed in response to localized bank failure or erosion).

(3) Channels subject to tidal action.

(4) Channels shown to be aggrading (i.e., consistently subject to accumulation of sediments over decades) and to have no indications of erosion on the channel banks.

ii. ***Medium Risk.*** Medium risk channels are those where the boundary shear stress could exceed critical shear stress as a result of hydrograph modification but where either the sensitivity of the boundary shear stress to flow is low (e.g., an oversized channel with high width to depth ratios) or where the resistance of the channel materials is relatively high (e.g., cobble or boulder beds and vegetated banks). In *medium-risk* channels, accelerated erosion due to increased watershed imperviousness is not likely but is possible, and the uncertainties can be more easily and effectively addressed by mitigation than by additional study.

In a preliminary report, the project proponent's engineer or qualified environmental professional shall apply the Program's *Basic Geomorphic Assessment*[134] methods and criteria to show each downstream reach between the project site and the Bay/Delta is either at *low-risk* or *medium-risk* of accelerated erosion due to watershed development. In a following, detailed report, a qualified stream geomorphologist[135] shall use the Program's Basic Geomorphic Assessment methods and criteria, available information, and current field data to evaluate each *medium-risk* reach. For *each medium-risk* reach, the detailed report shall show one of the following:

[134] Contra Costa Clean Water Program *Hydrograph Modification Management Plan*, May 15, 2005, Attachment 4, pp. 6-13. This method must be made available in the Program's *Stormwater C.3 Guidebook.*

[135] Typically, detailed studies will be conducted by a stream geomorphologist retained by the lead agency (or, on the lead agency's request, another public agency such as the Contra Costa County Flood Control and Water Conservation District) and paid for by the project proponent.

(1) A detailed analysis, using the Program's criteria, showing the particular reach may be reclassified as *low-risk.*

(2) A detailed analysis, using the Program's criteria, confirming the *medium-risk* classification, and:

(a) A preliminary plan for a mitigation project for that reach to stabilize stream beds or banks, improve natural stream functions, and/or improve habitat values, and

(b) A commitment to implement the mitigation project timely in connection with the proposed development project (including milestones, schedule, cost estimates, and funding), and

(c) An opinion and supporting analysis by one or more qualified environmental professionals that the expected environmental benefits of the mitigation project substantially outweigh the potential impacts of an increase in runoff from the development project, and

(d) Communication, in the form of letters or meeting notes, indicating consensus among staff representatives of regulatory agencies having jurisdiction that the mitigation project is feasible and desirable. In the case of the Regional Water Board, this must be a letter, signed by the Executive Officer or designee, specifically referencing this requirement. (This is a preliminary indication of feasibility required as part of the development project's Stormwater Control Plan. All applicable permits must be obtained before the mitigation project can be implemented.)

iii. ***High Risk.*** High-risk channels are those where the sensitivity of boundary shear stress to flow is high (e.g., incised or entrenched channels, channels with low width-to-depth ratios, and narrow channels with levees) or where channel resistance is low (e.g., channels with fine-grained, erodible beds and banks, or with little bed or bank vegetation). In a *high-risk* channel, it is presumed that increases in runoff flows will accelerate bed and bank erosion.

To implement this option (i.e., to allow increased runoff peaks and durations to a high-risk channel), the project proponent must perform a comprehensive analysis to determine the design objectives for channel restoration and must propose a comprehensive program of in-stream measures to improve channel functions while accommodating increased flows. Specific requirements are developed case-by-case in consultation with regulatory agencies having jurisdiction. The analysis will typically involve watershed-scale continuous hydrologic modeling (including calibration with stream gauge data where possible) of pre-project and post-project runoff flows, sediment transport modeling, collection and/or analysis of field data to characterize channel morphology including analysis of bed and bank materials and bank vegetation, selection and design of in-stream structures, and project environmental permitting.

2. IMP Model Calibration and Validation

The Program shall monitor flow from Hydrograph Modification Integrated Management Practices (IMPs) to determine the accuracy of its model inputs and assumptions. Monitoring

shall be conducted with the aim of evaluating flow control effectiveness of the IMPs. The Program shall implement monitoring where feasible at future new development projects to gain insight into actual versus predicted rates and durations of flow from IMP overflows and underdrains.

At a minimum, Permittees shall monitor five locations for a minimum of two rainy seasons. If two rainy seasons are not sufficient to collect enough data to determine the accuracy of model inputs and assumptions, monitoring shall continue until such time as adequate data are collected.

Permittees shall conduct the IMP monitoring as described in the IMP Model Calibration and Validation Plan in Section 5 of this Attachment. Monitoring results shall be submitted to the Executive Officer by June 15 of each year following collection of monitoring data. If the first year's data indicate IMPs are not effectively controlling flows as modeled in the HMP, the Executive Officer may require the Program to make adjustments to the IMP sizing factors or design, or otherwise take appropriate corrective action. The Permittees shall submit an IMP Monitoring Report by August 30 of the second year[136] of monitoring. The IMP Monitoring Report shall contain, at a minimum, all the data, graphic output from model runs, and a listing of all model outputs to be adjusted, with full explanation for each. Board staff will review the IMP Monitoring Report and require the Program to make any appropriate changes to the model within a 3-month time frame.

3. Stormwater C.3 Guidebook and IMP Design Criteria

The Current Contra Costa Clean Water Program C.3 Guidebook, 4th Edition (September 2008) shall be implemented until the expiration of this permit (November 2014). Any significant changes in the designs of the IMPs, their sizing factors or manner of implementation shall be approved by the Water Board.

4. IMP Model Calibration and Validation Plan Objective

Monitoring shall be conducted with the aim of evaluating flow control effectiveness of the IMPs. The IMPs were redesigned in 2008 to meet a low flow criterion of 0.2Q2, not 0.1Q2, which is current HMP standard for Contra Costa County. The Program shall implement monitoring at future new development projects at a minimum of five locations and for a minimum of two rainy seasons to gain insight into actual versus predicted rates and durations of flow from IMP overflows and underdrains. If two rainy seasons are not sufficient to collect enough data to determine the accuracy of model inputs and assumptions, monitoring shall continue until such time as adequate data are collected.

a. The Dischargers Shall Identify and Establish Monitoring Sites – Program staff shall work with municipal Co-Permittees to identify potential monitoring sites on development projects that implement IMPs. Proposed sites shall be identified during review of planning and zoning applications so that monitoring stations can be designed and constructed as part of the development project. Monitoring shall begin after the development project is complete and the site is in use.

Criteria for appropriate sites include**,** but are not limited to**,** the following:

[136] If the monitoring extends beyond 2 years, an IMP Monitoring Report shall be submitted by August 30 annually until model calibration and validation is complete.

- To ensure applicability of results, the development project and IMPs should be typical of development sites and types of IMPs foreseen throughout the County. In particular, at least one each of the infiltration planter, flow-through planter, and *dry* swale shall be selected for monitoring.
- The area tributary to the IMP should be clearly defined, should contain and direct runoff at all rainfall intensities to the IMP. Two monitoring locations shall contain tributary areas that are a mix of pervious and impervious areas to test the pervious area simplifying assumptions used in the HMP, Table 14, Attachment 2, page 49. If no such locations are constructed by the monitoring period, modeling of mixed (pervious and impervious) tributary areas can substitute for direct monitoring of this type of location.
- The site shall be easily accessible at all times of day and night to allow inspection and maintenance of measurement equipment.
- Hourly rain gauge data representative of the site's location shall be available.

b. Documentation of Monitoring Sites – The Dischargers shall record and report (i.e., document) pertinent information for each monitoring site. Documentation of each monitoring site shall include the following:

- Amount of tributary area;
- Condition of roof or paving;
- Grading and drainage to the IMP, including calculated time of concentration.
- Locations and elevations of inlets and outlets;
- As-built measurements of the IMP including depth of soil and gravel layers, height of underdrain pipe above the IMP floor or native soil;
- Detailed specifications of soil and gravel layers and of filter fabric and other appurtenances; and
- Condition of IMP surface soils and vegetation.

c. Design, Construction, and Operation of Monitoring Sites – The Dischargers shall ensure that IMPs selected for monitoring are equipped with a manhole, vault, or other means to install and access equipment for monitoring flows from IMP overflows and underdrains.

Development of suitable methods for monitoring the entire range of flows may require experiment. The Program and Water Board are interested in the timing and duration of very low flows from underdrains, as well as higher flows from IMP overflows. The Dischargers shall ensure that equipment is configured to measure the entire range of flows and to avoid potential clogging of orifices used to measure low flows.

The Dischargers shall ensure that construction of IMPs is inspected carefully to ensure that IMPs are installed as designed and to avoid potential operational problems. For example, gravel used for underdrain layers should be washed free of fines, and filter fabric should be installed without breaks.

The Dischargers shall ensure that, following construction, artificial flows are applied to the IMP to verify the IMP and monitoring equipment are operating correctly and to resolve any operational problems prior to measuring flows from actual rain storms.

The Dischargers shall ensure that monitoring equipment is properly maintained. Maintenance of monitoring equipment will require, initially, inspections during and after storms that produce runoff. The inspection and maintenance schedule may be adjusted as additional experience is gained.

d. Data to be Obtained – The Dischargers shall collect the following data for each IMP, during the monitoring period:

- Hourly rainfall and more frequent rainfall data where available;
- Hourly IMP outflow and 15-minute outflow for all time periods in which sub-hourly rainfall data are available;
- Hourly IMP inflow (if possible) and more frequent inflow (if possible) when sub-hourly rainfall data are available; and
- Notes and observations.

e. Evaluation of Data – The principal use of the monitoring data shall be a comparison of predicted to actual flows. The Dischargers shall ensure that the HSPF model is set up as it was to prepare the curves in Attachment 2 of the HMP, with appropriate adjustments for the drainage area of the IMP to be monitored and for the actual sizing and configuration of the IMP. Hourly rainfall data from observed storms shall be input to the model, and the resulting hourly predicted output recorded. Where sub-hourly rainfall data are available, the model shall be run with, and output recorded for, 15-minute time steps.

The Dischargers shall compare predicted hourly outflows to the actual hourly outflows. As more data are gathered, the Dischargers may examine aggregated data to characterize deviations from predicted performance at various storm intensities and durations.

Because high-intensity storms are rare, it will take many years to obtain a suitable number of events to evaluate IMP performance under overflow conditions. Underdrain flows will occur more frequently, but possibly only a few times a year, depending on rainfall and IMP characteristics (e.g., extent to which the IMP is oversized, and actual, rather than predicted, permeability of native soils). However, evaluating a range of rainfall events that do *not* produce underflow will help demonstrate the effectiveness of the IMP.

5. Record Keeping and Reporting

Permittees shall collect and retain the following information for all projects subject to HM requirements:

a. Site plans identifying impervious areas, surface flow directions for the entire site, and location(s) of HM measures;

b. For projects using standard sizing charts, a summary of sizing calculations used;

c. For projects using the BAHM, a listing of model inputs;

d. For projects using custom modeling, a summary of the modeling calculations with corresponding graph showing curve matching (existing, post-project, and post-project with HM controls curves);

e. For projects using the Impracticability Provision, a listing of all applicable costs and a brief description of the alternative HM project (name, location, date of start up, entity responsible for maintenance); and

f. A list and thorough technical explanation of any changes in design criteria for HM Controls, including IMPs. Permittees shall submit this list and explanation annually with the Annual Report.

6. The current Contra Costa Clean Water Program C.3 Guidebook, 4th Edition (C.3 Guidebook) (September 2008) design approach and IMPs shall be used to comply with Provision C.3.g flow requirements until this permit expires and is reissued, pending model verification studies as described below. The IMPs shall be an implementation option as the flow control implementation for development projects up to a footprint of 30 acres

By April 1, 2014, the Contra Costa Clean Water Program shall submit a proposal containing one or a combination of the following three options (a.-c.) for implementation after the expiration and reissuance of this permit:

a. Present model verification monitoring results demonstrating that the IMPs are sufficiently overdesigned and perform to meet the 0.1Q2 low flow design criteria; or

b. Present study results of Contra Costa County streams geology and other factors that support the low flow design criteria of 0.2Q2 as the limiting HMP design low flow; or

c. Propose redesigns of the IMPs to meet the low flow design criteria of 0.1Q2 to be implemented during the next permit term.

ATTACHMENT D

Provision C.3.g.
Fairfield-Suisun Permittees
Hydromodification Management Requirements

Fairfield-Suisun Permittees Hydromodification Management Requirements

1. On-site and Regional Hydromodification Management (HM) Control Design Criteria

a. *Range of flows to control*: Flow duration controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 20 percent of the pre-project 2-year peak flow[137] up to the pre-project 10-year peak flow.

b. *Goodness of fit criteria*: The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control.

c. *Allowable low flow rate:* Flow control structures may be designed to discharge stormwater at a very low rate that does not threaten to erode the receiving waterbody. This flow rate (also called Qcp[138]) shall be no greater than 20 percent of the pre-project 2-year peak flow.

d. *Standard HM modeling:* On-site and regional HM controls designed using the Bay Area Hydrology Model (BAHM[139]) and site-specific input data shall be considered to meet the HM Standard. Such use must be consistent with directions and options set forth in the most current BAHM User Manual.[140] Permittees shall demonstrate to the satisfaction of the Executive Officer that any modifications of the BAHM made are consistent with this Attachment and Provision C.3.g.

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[137] Where referred to in this Order, the 2-year peak flow is determined using a flood flow frequency analysis procedure based on USGS Bulletin 17 B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35–50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include USEPA's Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers' Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA's Storm Water Management Model (SWMM).

[138] Qcp is the allowable low flow discharge from a flow control structure on a project site. It is a means of apportioning the critical flow in a stream to individual projects that discharge to that stream, such that cumulative discharges do not exceed the critical flow in the stream.

[139] See www.bayareahydrologymodel.org , Resources

[140] *The Bay Area Hydrology Model User Manual*is available at http://www.bayareahydrologymodel.org/downloads.html.

e. *Alternate HM modeling and design:* The project proponent may use a continuous simulation hydrologic computer model[141] to simulate pre-project and post-project runoff and to design HM controls. To use this method, the project proponent shall compare the pre-project and post-project model output for a rainfall record of at least 30 years, and shall show that all applicable performance criteria in 1.a–c above are met.

f. *Sizing Charts:* The Program developed design procedures, criteria, and sizing factors for infiltration basins and bioretention units, based on a low flow rate that exceeds the allowable low flow rate. After the Program has modified its sizing factors[142] to the allowable criteria, received approval of the modified sizing factors from the Executive Officer,[143] and informed the public through such mechanism as an electronic mailing list, project proponents may meet the HM Standard by using the Program's design procedures, criteria, and sizing factors for infiltration basins and/or bioretention units.

2. Impracticability Provision

Where conditions (e.g., extreme space limitations) prevent a project from meeting the HM Standard for a reasonable cost, *and* where the project's runoff cannot be directed to a regional HM control within a reasonable time frame, *and* where an in-stream measure is not practicable, the project shall use (1) site design for hydrologic source control, *and* (2) stormwater treatment measures that collectively minimize, slow, and detain[144] runoff to the maximum extent practicable. In addition, if the cost of providing site design for hydrologic source control and treatment measures to the maximum extent practicable does not exceed 2% of the project cost (as defined in "2.a." below), the project proponent shall provide for or contribute financially to an alternative HM project as set forth below:

a. *Reasonable cost*: To show that the HM Standard cannot be met at a reasonable cost, the project proponent must demonstrate that the total cost to comply with both the HM Standard and the Provision C.3.d. treatment requirement exceeds 2 percent of the project construction cost, excluding land costs. Costs of HM and treatment control measures shall not include land costs, soil disposal fees, hauling, contaminated soil testing, mitigation, disposal, or other normal site enhancement costs such as landscaping or grading that are required for other development purposes.

b. *Regional HM controls*: A regional HM control shall be considered available if there is a planned location for the regional HM control and if an appropriate funding mechanism for a regional HM control is in place by the time of project construction.

c. *In-stream measures practicability*: In-stream measures shall be considered practicable when an in-stream measure for the project's watershed is planned and an appropriate funding mechanism for an in-stream measure is in place by the time of project construction.

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[141] Such models include USEPA's Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA's Storm Water Management Model (SWMM).

[142] Current sizing factors and design criteria are shown in Appendix D of the FSURMP HMP.

[143] The modified sizing factors will not introduce a new concept but rather make an existing compliance mechanism more stringent; therefore, Executive Officer approval is appropriate.

[144] Stormwater treatment measures that detain runoff are generally those that filter runoff through soil or other media, and include bioretention units, bioswales, basins, planter boxes, tree wells, media, filters, and green roofs.

d. *Financial contribution to an alternative HM project*: The difference between 2 percent of the project construction costs and the cost of the treatment measures at the site (both costs as described in Section 2.a of this Attachment) shall be contributed to an alternative HM project, such as a stormwater treatment retrofit, HM retrofit, regional HM control, or in-stream measure. Preference shall be given to projects discharging, in this order, to the same tributary, mainstem, watershed, then in the same municipality or county.

3. Record Keeping

Permittees shall collect and retain the following information for all projects subject to HM requirements:

a. Site plans identifying impervious areas, surface flow directions for the entire site, and location(s) of HM measures;

b. For projects using standard sizing charts, a summary of sizing calculations used;

c. For projects using the BAHM, a listing of model inputs;

d. For projects using custom modeling, a summary of the modeling calculations with corresponding graph showing curve matching (existing, post-project, and post-project with HM controls curves);

e. For projects using the Impracticability Provision, a listing of all applicable costs and a brief description of the alternative HM project (name, location, date of start up, entity responsible for maintenance); and

f. A listing, summary, and date of modifications made to the BAHM, including technical rationale. Permittees shall submit this list and explanation annually with the Annual Report.

4. HM Control Areas

Applicable projects shall be required to meet the HM Standard when such projects discharge into the upstream reaches of Laurel or Ledgewood Creeks, as delineated in the Fairfield-Suisun Permittees' HM Maps (available at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/muni/mrp/Final%20TO%20HM%20Maps.pdf.). Plans to restore a creek reach may reintroduce the applicability of HM requirements; in these instances, Permittees may add, but shall not delete, areas of applicability accordingly.

ATTACHMENT E

Provision C.3.g.
San Mateo Permittees
Hydromodification Management Requirements

San Mateo Permittees Hydromodification Management Requirements

1. On-site and Regional Hydromodification Management (HM) Control Design Criteria

a. *Range of flows to control:* Flow duration controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 10 percent of the pre-project 2-year peak flow[145] up to the pre-project 10-year peak flow.

b. *Goodness of fit criteria*: The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control.

c. *Allowable low flow rate:* Flow control structures may be designed to discharge stormwater at a very low rate that does not threaten to erode the receiving waterbody. This flow rate (also called Qcp[146]) shall be no greater than 10 percent of the pre-project 2-year peak flow.

d. *Standard HM modeling*: On-site and regional HM controls designed using the Bay Area Hydrology Model (BAHM[147]) and site-specific input data shall be considered to meet the HM Standard. Such use must be consistent with directions and options set forth in the

[145] Where referred to in this Order, the 2-year peak flow is determined using a flood flow frequency analysis procedure based on USGS Bulletin 17 B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35–50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include USEPA's Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers' Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA's Storm Water Management Model (SWMM).

[146] Qcp is the allowable low flow discharge from a flow control structure on a project site. It is a means of apportioning the critical flow in a stream to individual projects that discharge to that stream, such that cumulative discharges do not exceed the critical flow in the stream.

[147] See www.bayareahydrologymodel.org , Resources

most current BAHM User Manual.[148] Permittees shall demonstrate to the satisfaction of the Executive Officer that any modifications of the BAHM made are consistent with the requirements of Provision C.3.g.

e. *Alternate HM modeling and design*: The project proponent may use a continuous simulation hydrologic computer model[149] to simulate pre-project and post-project runoff and to design HM controls. To use this method, the project proponent shall compare the pre-project and post-project model output for a rainfall record of at least 30 years, and shall show that all applicable performance criteria in 1.a.–c. above are met.

2. Impracticability Provision

Where conditions (e.g., extreme space limitations) prevent a project from meeting the HM Standard for a reasonable cost, *and* where the project's runoff cannot be directed to a regional HM control within a reasonable time frame, *and* where an in-stream measure is not practicable, the project shall use (1) site design for hydrologic source control, *and* (2) stormwater treatment measures that collectively minimize, slow, and detain[150] runoff to the maximum extent practicable. In addition, , if the cost of providing site design for hydrologic source control and treatment measures to the maximum extent practicable does not exceed 2% of the project cost (as defined in "2.a." below), the project proponent shall provide for or contribute financially to an alternative HM project as set forth below:

a. *Reasonable cost*: To show that the HM Standard cannot be met at a reasonable cost, the project proponent must demonstrate that the total cost to comply with both the HM Standard and the Provision C.3.d treatment requirement exceeds 2 percent of the project construction cost, excluding land costs. Costs of HM and treatment control measures shall not include land costs, soil disposal fees, hauling, contaminated soil testing, mitigation, disposal, or other normal site enhancement costs such as landscaping or grading that are required for other development purposes.

b. *Regional HM controls:* A regional HM control shall be considered available if there is a planned location for the regional HM control and if an appropriate funding mechanism for a regional HM control is in place by the time of project construction.

c. *In-stream measures practicability:* In-stream measures shall be considered practicable when an in-stream measure for the project's watershed is planned and an appropriate funding mechanism for an in-stream measure is in place by the time of project construction.

d. *Financial contribution to an alternative HM project*: The difference between 2 percent of the project construction costs and the cost of the treatment measures at the site (both costs as described in Section 2.a of this Attachment shall be contributed to an alternative HM project, such as a stormwater treatment retrofit, HM retrofit, regional HM control, or

[148] The Bay Area Hydrology Model User Manualis available at http://www.bayareahydrologymodel.org/downloads.html

[149] Such models include USEPA's Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA's Storm Water Management Model (SWMM).

[150] Stormwater treatment measures that detain runoff are generally those that filter runoff through soil or other media, and include bioretention units, bioswales, basins, planter boxes, tree wells, media filters, and green roofs.

in-stream measure. Preference shall be given to projects discharging, in this order, to the same tributary, mainstem, watershed, then in the same municipality, or county.

3. Record Keeping

Permittees shall collect and retain the following information for all projects subject to HM requirements:

a. Site plans identifying impervious areas, surface flow directions for the entire site, and location(s) of HM measures;

b. For projects using standard sizing charts, a summary of sizing calculations used;

c. For projects using the BAHM, a listing of model inputs;

d. For projects using custom modeling, a summary of the modeling calculations with corresponding graph showing curve matching (existing, post-project, and post-project with HM controls curves);

e. For projects using the Impracticability Provision, a listing of all applicable costs and a brief description of the alternative HM project (name, location, date of startup, entity responsible for maintenance); and

f. A listing, summary, and date of modifications made to the BAHM, including technical rationale. Permittees shall submit this list and explanation annually with the Annual Report. This may be prepared at the Countywide Program level and submitted on behalf of participating Permittees.

4. HM Control Areas

Applicable projects shall be required to meet the HM Standard when such projects are in the HM control areas shown in the San Mateo Permittees' HM Map (available at http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/muni/mrp/Final%20TO%20HM%20Maps.pdf). Plans to restore a creek reach may reintroduce the applicability of HM requirements; in these instances, Permittees may add, but shall not delete, areas of applicability accordingly.

The HM Standard and all associated requirements apply in areas that are shown in green on the map and noted in the map's key as *areas subject to HMP*. The other areas are exempt from the HM Standard because they drain to hardened channels or low gradient channels (a characteristic applicable to San Mateo County's particular shoreline properties), or are in highly developed areas. Plans to restore a hardened channel may affect areas of applicability.

Areas shown in the San Mateo Permittees' HM Map may be modified as follows:

b. **Street Boundary Interpretation** – Streets are used to mark the boundary between areas where the HM Standard must be met and exempt areas. Parcels on the boundary street are considered within the area exempted from the hydromodification requirements. Nonetheless, there might be cases where the drainage from a particular parcel(s) on the boundary street drains westward into the hydromodification required area and, as such, any applicable project on such a parcel(s) would be subject to the hydromodification requirements.

c. Hardened Channel/Drainage to Exempt Area – If drainage leaving a proposed project subject to the HM Standard is determined to flow only through a hardened channel and/or enclosed pipe along its entire length before directly discharging into a waterway in the exempt area or into tidal waters, the project would be exempted from the HM Standard and its associated requirements. The project proponent must demonstrate, in a statement signed by an engineer or qualified environmental professional, that this condition is met.

d. Boundary Re-Opener – If the municipal regional permit or future permit reissuances or amendments modify the types of projects subject to the hydromodification requirements, the appropriate location for an HMP boundary or boundaries will be reevaluated at the same time.

ATTACHMENT F

Provision C.3.g.
Santa Clara Permittees
Hydromodification Management Requirements

Santa Clara Permittees Hydromodification Management Requirements

1. On-site and Regional Hydromodification Management (HM) Control Design Criteria

a. *Range of flows to control:* Flow duration controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 10 percent of the pre-project 2-year peak flow[151] up to the pre-project 10-year peak flow, except where the lower endpoint of this range is modified as described in Section 5 of this Attachment.

b. *Goodness of fit criteria*: The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control.

c. *Allowable low flow rate*: Flow control structures may be designed to discharge stormwater at a very low rate that does not threaten to erode the receiving waterbody. This flow rate (also called *Qcp*[152]) shall be no greater than 10 percent of the pre-project 2-year peak flow unless a modified value is substantiated by analysis of actual channel resistance in accordance with an approved User Guide as described in Section 5 of this Attachment.

d. *Standard HM modeling*: On-site and regional HM controls designed using the Bay Area Hydrology Model (BAHM[153]) and site-specific input data shall be considered to meet the HM Standard. Such use must be consistent with directions and options set forth in the

[151] Where referred to in this Order, the 2-year peak flow is determined using a flood flow frequency analysis procedure based on USGS Bulletin 17B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35–50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include USEPA's Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers' Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA's Storm Water Management Model (SWMM).

[152] Qcp is the allowable low flow discharge from a flow control structure on a project site. It is a means of apportioning the critical flow in a stream to individual projects that discharge to that stream, such that cumulative discharges do not exceed the critical flow in the stream.

[153] See www.bayareahydrologymodel.org , Resources.

most current BAHM User Manual.[154] Permittees shall demonstrate to the satisfaction of the Executive Officer that any modifications of the BAHM made are consistent with this attachment and Provision C.3.g.

e. *Alternate HM modeling and design*: The project proponent may use a continuous simulation hydrologic computer model[155] to simulate pre-project and post-project runoff and to design HM controls. To use this method, the project proponent shall compare the pre-project and post-project model output for a rainfall record of at least 30 years, and shall show that all applicable performance criteria in 1.a. – c. above are met.

2. Impracticability Provision

Where conditions (e.g., extreme space limitations) prevent a project from meeting the HM Standard for a reasonable cost, *and* where the project's runoff cannot be directed to a Regional HM control[156] within a reasonable time frame, *and* where an in-stream measure is not practicable, the project shall use (1) site design for hydrologic source control, *and* (2) stormwater treatment measures that collectively minimize, slow, and detain[157] runoff to the maximum extent practicable. In addition, if the cost of providing site design for hydrologic source control and treatment measures to the maximum extent practicable does not exceed 2% of the project cost (as defined in "2.a." below), the project shall contribute financially to an alternative HM project as set forth below:

a. *Reasonable cost*: To show that the HM Standard cannot be met at a reasonable cost, the project proponent must demonstrate that the total cost to comply with both the HM Standard and the Provision C.3.d treatment requirement exceeds 2 percent of the project construction cost, excluding land costs. Costs of HM and treatment control measures shall not include land costs, soil disposal fees, hauling, contaminated soil testing, mitigation, disposal, or other normal site enhancement costs such as landscaping or grading that are required for other development purposes.

b. *Regional HM control:* A regional HM control shall be considered available if there is a planned location for the regional HM control and if an appropriate funding mechanism for a regional control is in place by the time of project construction.

c. *In-stream measures practicability:* In-stream measures shall be considered practicable when an in-stream measure for the project's watershed is planned and an appropriate funding mechanism for an in-stream measure is in place by the time of project construction.

d. *Financial contribution to an alternative HM project:* The difference between 2 percent of the project construction costs and the cost of the treatment measures at the site (both costs as described in Section 2.a of this Attachment) shall be contributed to an alternative

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[154] *The Bay Area Hydrology Model User Manual* is available at http://www.bayareahydrologymodel.org/downloads.html.

[155] Such models include USEPA's Hydrologic Simulation Program—Fortran (HSPF), U.S. Army Corps of Engineers Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and USEPA's Storm Water Management Model (SWMM).

[156] *Regional HM controls* are flow duration control structures that collect stormwater runoff discharge from multiple projects (each of which should incorporate hydrologic source control measures as well) and are designed such that the HM Standard is met for all the projects at the point where the regional control measure discharges.

[157] Stormwater treatment measures that detain runoff are generally those that filter runoff through soil or other media, and include bioretention units, bioswales, basins, planter boxes, sand filters, and green roofs.

HM project, such as a stormwater treatment retrofit, HM retrofit, regional HM control, or in-stream measure. Preference shall be given to projects discharging, in this order, to the same tributary, mainstem, watershed, then in the same municipality or county.

3. Record Keeping

Permittees shall collect and retain the following information for all projects subject to HM requirements:

a. Site plans identifying impervious areas, surface flow directions for the entire site, and location(s) of HM measures;

b. For projects using standard sizing charts, a summary of sizing calculations used;

c. For projects using the BAHM, a listing of model inputs;

d. For projects using custom modeling, a summary of the modeling calculations with corresponding graph showing curve matching (existing, post-project, and post-project with HM controls curves);

e. For projects using the Impracticability Provision, a listing of all applicable costs and a brief description of the alternative HM project (name, location, date of start up, entity responsible for maintenance); and

f. A listing, summary, and date of modifications made to the BAHM, including technical rationale. Permittees shall submit this list and explanation annually with the Annual Report. This may be prepared at the Countywide Program level and submitted on behalf of participating Permittees.

4. HM Control Areas

Applicable projects shall be required to meet the HM Standard when such projects are located in areas of HM applicability as described below and shown in the revised Santa Clara Permittees' HM Map (see Attachment M).

a. Purple areas: These areas represent catchments that drain to hardened channels that extend continuously to the Bay or to tidally influenced sections of creeks. The HM Standard and associated requirements do not apply to projects in the areas designated in purple on the map.

Plans to restore a creek reach may reintroduce the applicability of HM requirements, unless the creek restoration project is designed to accommodate the potential hydromodification impacts of future development; if this is not the case, in these instances, Permittees may add, but shall not delete, areas of applicability accordingly.

b. Red areas: These areas represent catchments and subwatersheds that are greater than or equal to 65% impervious, based on existing imperviousness data sources. The HM Standard and associated requirements do not apply to projects in the areas designated in red on the map.

c. Green area: These areas represent catchments and subwatersheds that are less than 65% impervious. The HM Standard and associated requirements apply to projects in areas designated as green on the map.

5. Potential Exceptions to Map Designations

The Program may choose to prepare a User Guide[158] to be used for evaluating individual receiving waterbodies using detailed methods to assess channel stability and watercourse critical flow. This User Guide would reiterate and collate established stream stability assessment methods that have been presented in the Program's HMP.[159] After the Program has collated its methods into User Guide format, received approval of the User Guide from the Executive Officer,[160] and informed the public through such process as an electronic mailing list, the Permittees may use the User Guide to guide preparation of technical reports for the following: implementing the HM Standard using in-stream or regional controls; determining whether certain projects are discharging to a watercourse that is less susceptible (from point of discharge to the Bay) to hydromodification (e.g., would have a lower potential for erosion than set forth in these requirements); and/or determining if a watercourse has a higher critical flow and project(s) discharging to it are eligible for an alternative Qcp for the purpose of designing on-site or regional measures to control flows draining to these channels (i.e., the actual threshold of erosion-causing critical flow is higher than 10 percent of the 2-year pre-project flow). In no case shall the design value of Qcp exceed 50 percent of the 2-year pre-project flow.

[158] The User Guide may be offered under a different title.
[159] The Program's HMP has undergone Water Board staff review and been subject to public notice and comment.
[160] The User Guide will not introduce a new concept, but rather reformat existing methods; therefore, Executive Officer approval is appropriate.

ATTACHMENT G

Provision C.3.h.
Sample Reporting Table

Table C.3.h. – Operation and Maintenance of Stormwater Treatment Systems
City of Eden Annual Report FY 2008-09

Facility/Site Inspected and Responsible Party for Maintenance	Date of Inspection	Type of Inspection (annual, follow-up, etc.)	Type of Treatment System or HM Control Inspected	Inspection Findings or Results	Enforcement Action Taken (Warning, NOV, administrative citation, etc.)	Comments
ABC Company 123 Alphabet Road San Jose	12/06/08	annual	offsite bioretention unit	proper operation	none	Unit is operating properly and is well maintained.
DEF site 234 Blossom Drive Santa Clara	12/17/08	annual	onsite media filter	ineffective filter media	verbal warning	Media filter is clogged and needs to be replaced.
	12/19/08	follow-up	onsite media filter	proper operation	none	New media filter in place and unit is operating properly.
	1/19/09	follow-up	onsite media filter	proper operation	none	Unit is operating properly.
GHI Hotel 1001 Grand Blvd 227 Touring Parkway	12/21/08	annual	onsite swales	proper operation	notice of violation	Bioretention unit #2 is badly eroded because of flow channelization. Stormwater is flowing over the eroded areas, bypassing treatment and running off into parking area.
			onsite bioretention unit #1	proper operation		
			onsite bioretention unit #2	eroded areas due to flow channelization		
	12/27/08	follow-up	onsite bioretention unit #2	proper operation	none	Entire bioretention unit #2 has been replanted and re-graded. Raining heavily but no overflow observed.
Rolling Hills Estates Homeowners' Association 543 Rolling Hill Drive Pleasanton	01/17/09	annual	onsite pond	sediment and debris accumulation	notice of violation	Pond needs sediment removal and check dam needs debris removal.
	01/24/09	follow-up	onsite pond	sediment and debris accumulation	administrative citation $1000	Pond still a mess. Administrative citation requires maintenance within a week.
	01/31/09	follow-up	onsite pond	proper maintenance	none	Pond maintenance completed.
	02/18/09	spot inspection	onsite pond	proper operation and maintenance	none	Proper operation and maintenance.

ATTACHMENT H

Provision C.8.
Status and Long-Term Monitoring
Follow-up Analysis and Actions

Status and Long-Term Monitoring Follow-up Analysis and Actions for Biological Assessment, Bedded Sediment Toxicity, and Bedded Sediment Pollutants

When results from Biological Assessment, Bedded Sediment Toxicity, and/or Bedded Sediment Pollutants monitoring indicate impacts at a monitoring location, Permittees shall evaluate the extent and cause(s) of impacts to determine the potential role of urban runoff as indicated in Table H-1.

Table H-1. Sediment Triad Approach to Determining Follow-Up Actions

Chemistry Results[161]	Toxicity Results[162]	Bioassessment Results[163]	Action
No chemicals exceed Threshold Effect Concentrations (TEC), mean Probable Effects Concentrations (PEC) quotient < 0.5 and pyrethroids < 1.0 Toxicity Unit (TU)[164]	No Toxicity	No indications of alterations	No action necessary
No chemicals exceed TECs, mean PEC quotient < 0.5 and pyrethroids< 1.0 TU	Toxicity	No indications of alterations	(1) Take confirmatory sample for toxicity. (2) If toxicity repeated, attempt to identify cause and spatial extent. (3) Where impacts are under Permittee's control, take management actions to minimize upstream sources causing toxicity; initiate no later than the second fiscal year following the sampling event.

[161] TEC and PEC are found in MacDonald, D.D., G.G. Ingersoll, and T.A. Berger. 2000. Development and Evaluation of Consensus-based Sediment Quality Guidelines for Freshwater Ecosystems. *Archives of Environ. Contamination and Toxicology* 39(1):20–31.

[162] Toxicity is exhibited when *Hyallela* survival statistically different than and < 20 percent of control.

[163] Alterations are exhibited if metrics indicate substantially degraded community.

[164] Toxicity Units (TU) are calculated as follows: TU = Actual concentration (organic carbon normalized) ÷ Reported *H. azteca* LC_{50} concentration (organic concentration normalized). Weston, D.P., R.W. Holmes, J. You, and M.J. Lydy, 2005. Aquatic Toxicity Due to Residential Use of Pyrethroid Insecticides. *Environ. Science and Technology* 39(24):9778–9784.

Chemistry Results[161]	**Toxicity Results**[162]	**Bioassessment Results**[163]	**Action**
No chemicals exceed TECs, mean PEC quotient < 0.5 and pyrethroids< 1.0 TU	No Toxicity	Indications of alterations	Identify the most probable cause(s) of the alterations in biological community. Where impacts are under Permittee's control, take management actions to minimize the impacts causing physical habitat disturbance; initiate no later than the second fiscal year following the sampling event.
No chemicals exceed TECs, mean PEC quotient < 0.5 and pyrethroids< 1.0 TU	Toxicity	Indications of alterations	(1) Identify cause(s) of impacts and spatial extent. (2) Where impacts are under Permittee's control, take management actions to minimize impacts; initiate no later than the second fiscal year following the sampling event.
3 or more chemicals exceed PECs, the mean PEC quotient is > 0.5, or pyrethroids > 1.0 TU	No Toxicity	Indications of alterations	(1) Identify cause of impacts. (2) Where impacts are under Permittee's control, take management actions to minimize the impacts caused by urban runoff; initiate no later than the second fiscal year following the sampling event.
3 or more chemicals exceed PECs, the mean PEC quotient is > 0.5, or pyrethroids > 1.0 TU	Toxicity	No indications of alterations	(1) Take confirmatory sample for toxicity. (2) If toxicity repeated, attempt to identify cause and spatial extent. (3) Where impacts are under Permittee's control, take management actions to minimize upstream sources; initiate no later than the second fiscal year following the sampling event.
3 or more chemicals exceed PECs, the mean PEC quotient is > 0.5, or pyrethroids > 1.0 TU	No Toxicity	No Indications of alterations	If PEC exceedance is Hg or PCBs, address under TMDLs
3 or more chemicals exceed PECs, the mean PEC quotient is > 0.5, or pyrethroids > 1.0 TU	Toxicity	Indications of alterations	(1) Identify cause(s) of impacts and spatial extent. (2) Where impacts are under Permittee's control, take management actions to address impacts.

ATTACHMENT I

Provision C.8.
Standard Monitoring Provisions

All monitoring activities shall meet the following requirements:

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. [40 CFR 122.41(j)(1)]
2. Permittees shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, and copies of all reports required by this Order for a period of at least five (5) years from the date of the sample, measurement, report, or application. This period may be extended by request of the Water Board or USEPA at any time and shall be extended during the course of any unresolved litigation regarding this discharge. [40 CFR 122.41(j)(2), CWC section 13383(a)]
3. Records of monitoring information shall include [40 CFR 122.41(j)(3)]:
   a. The date, exact place, and time of sampling or measurements;
   b. The individual(s) who performed the sampling or measurements;
   c. The date(s) analyses were performed;
   d. The individual(s) who performed the analyses;
   e. The analytical techniques or methods used; and,
   f. The results of such analyses.
4. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four years, or both. [40 CFR 122.41(j)(5)]
5. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the monitoring Provisions. [40 CFR 122.41(l)(4)(iii)]
6. All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services or a laboratory approved by the Executive Officer.
7. For priority toxic pollutants that are identified in the California Toxics Rule (CTR) (65 Fed. Reg. 31682), the Permittees shall instruct its laboratories to establish calibration standards that are equivalent to or lower than the Minimum Levels (MLs) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP). If a Permittee can demonstrate that a particular ML is not attainable, in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure (assuming that all the method specified sample weights, volumes, and processing steps have been followed) may be used instead of the ML listed in Appendix 4 of the SIP. The Permittee must submit documentation from the laboratory to the Water Board for approval prior to raising the ML for any priority toxic pollutant.
8. The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-

compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both. [40 CFR 122.41(k)(2)]

9. If the discharger monitors any pollutant more frequently than required by the Permit, unless otherwise specified in the Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the reports requested by the Water Board. [40 CFR 122.41(l)(4)(ii)]

ATTACHMENT J

Minimum Trash Capture Area
and
Minimum Number of Trash Hot Spots

Table 10.1 Minimum Trash Capture Area and Trash Hot Spots for Population Based Permittees

Data Source: http://quake.abag.ca.gov/mitigation/pickdbh2.html and Association of Bay Area Governments, 2005 ABAG Land Use Existing Land Use in 2005: Report and Data for Bay Area Counties

	Population	Retail / Wholesale Commercial Acres		**Minimum Trash Capture Catchment Area (Acres)**[165]		# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	**Minimum # of Trash Hot Spots**[166]
Alameda County								
San Leandro	73,402	721		**216**		2	7	4
Oakland	420,183	759		**228**		14	8	8
Dublin	46,934	377		**113**		1	3	**3**
Emeryville	9,727	69		**21**		1	1	1
Albany	16,877	95		**28**		1	1	1
Berkeley	106,697	183		**55**		3	1	3
Alameda County Unincorporated.	140,825	375		**112**		4	3	4
Alameda	75,823	402		**121**		2	4	**4**
Fremont	213,512	698		**209**		7	6	7
Hayward	149,205	726		**218**		4	7	**7**
Livermore	83,604	423		**127**		2	4	**4**
Newark	43,872	314		**94**		1	3	**3**
Piedmont	11,100	1		**0.3**		1	1	1
Pleasanton	69,388	366		**110**		2	3	**3**
Union City	73,402	183		**55**		2	1	2

[165] 30% of Retail / Wholesale Commercial Acres

[166] If the hot spot # based on % commercial area is more than twice that based on population, the minimum hot spot # is double the population based #.

	Population	Retail / Wholesale Commercial Acres	**Minimum Trash Capture Catchment Area (Acres)**[165]	# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	**Minimum # of Trash Hot Spots**[166]
San Mateo County						
San Mateo County Unincorporated.	65,844	71	**21**	2	1	2
Atherton	7,475	0	**0**	1	1	1
Belmont	26,078	58	**17**	1	1	1
Brisbane	3,861	16	**5**	1	1	1
Burlingame	28,867	123	**37**	1	1	1
Colma	1,613	106	**32**	1	1	1
Portola Valley	4,639	9	**3**	1	1	1
Daly City	106,361	242	**73**	3	2	3
East Palo Alto	32,897	59	**18**	1	1	1
Foster City	30,308	67	**20**	1	1	1
Half Moon Bay	13,046	49	**15**	1	1	1
Hillsborough	11,272	0	**0**	1	1	1
Menlo Park	31,490	83	**25**	1	1	1
Millbrae	21,387	68	**20**	1	1	1
Pacifica	39,616	100	**30**	1	1	1
Redwood City	77,269	309	**93**	2	3	**3**
San Bruno	43,444	137	**41**	1	1	1
San Carlos	28,857	129	**39**	1	1	1
San Mateo	95,776	275	**82**	3	2	3
South San Francisco	63,744	195	**58**	2	1	2
Woodside	5,625	9	**3**	1	1	1

	Population	Retail / Wholesale Commercial Acres	**Minimum Trash Capture Catchment Area (Acres)**[165]	# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	**Minimum # of Trash Hot Spots**[166]
Contra Costa County						
Contra Costa County Unincorporated.	173,573	524	**157**	5	5	5
Concord	123,776	1016	**305**	4	10	8
Walnut Creek	65,306	329	**99**	2	3	**3**
Clayton	10,784	21	**6**	1	1	1
Danville	42,629	134	**40**	1	1	1
El Cerrito	23,320	105	**32**	1	1	1
Hercules	24,324	37	**11**	1	1	1
Lafayette	23,962	68	**20**	1	1	1
Martinez	36,144	142	**43**	1	1	1
Moraga	16,138	108	**32**	1	1	1
Orinda	17,542	24	**7**	1	1	1
Pinole	19,193	140	**42**	1	1	1
Pittsburg	63,652	520	**156**	2	5	4
Pleasant Hill	33,377	219	**66**	1	2	**2**
Richmond	103,577	391	**117**	3	3	3
San Pablo	31,190	131	**39**	1	1	1
San Ramon	59,002	274	**82**	1	2	**2**

	Population	Retail / Wholesale Commercial Acres		**Minimum Trash Capture Catchment Area (Acres)**[165]		# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	**Minimum # of Trash Hot Spots**[166]
Santa Clara County								
Santa Clara County Unincorporated	99,122	270		**81**		3	3	3
Cupertino	55,551	213		**64**		2	2	2
Los Altos	28,291	65		**20**		1	1	1
Los Altos Hills	8,837	0		**0**		1	1	1
Los Gatos	30,296	163		**49**		1	1	1
Milpitas	69,419	457		**137**		2	4	**4**
Monte Sereno	3,579	0		**0**		1	1	1
Mountain View	73,932	375		**112**		2	3	**3**
Santa Clara	115,503	560		**168**		3	5	**5**
Saratoga	31,592	41		**12**		1	1	1
San Jose	989,496	2983		**895**		32	29	32
Sunnyvale	137,538	548		**164**		3	5	**5**
Palo Alto	63,367	282		**84**		2	2	2
Solano County								
Vallejo	120,416	559		**168**		4	5	**5**
Fairfield	106,142	486		**146**		3	4	**4**
Suisun	28,031	75		**22**		1	1	1
Totals	4,930,339	19057		**5718**		165	184	349

Table 10-2. Non-Population Based Permittee Trash Hot Spot and Trash Capture Assignments

Non population based Permittee	Number of Trash Hot Spots	Trash Capture Requirement
Santa Clara Valley Water District	12	4 trash booms or 8 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Alameda County Flood Control Agency	9	3 trash booms or 6 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Alameda Co. Zone 7 Flood Control Agency	3	1 trash boom or 2 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Contra Costa County Flood Control Agency	6	2 trash booms or 4 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
San Mateo County Flood Control District	2	1 trash booms or 2 outfall capture devices (minimum 2 ft. diameter outfall) or equivalent measures
Vallejo Sanitation and Flood District	1	1 trash boom or 2 outfall capture devices or equivalent measures (minimum 2 ft. diameter outfall)

ATTACHMENT K

Standard NPDES Stormwater Permit Provisions

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION

Standard Provisions and Reporting Requirements for NPDES Stormwater Discharge Permits

February 2009

A. GENERAL PROVISIONS

1. Neither the treatment nor the discharge of pollutants shall create a pollution, contamination, or nuisance as defined by Section 13050 of the California Water Code.

2. All discharges authorized by this Order shall be consistent with the terms and conditions of this Order.

3. Duty to Comply

a. If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act, or amendments thereto, for a toxic pollutant which is present in the discharge authorized herein and such standard or prohibition is more stringent than any limitation upon such pollutant in a Board adopted Order, discharger must comply with the new standard or prohibition. The Board will revise or modify the Order in accordance with such toxic effluent standard or prohibition and so notify the discharger.

b. If more stringent applicable water quality standards are approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the discharger must comply with the new standard. The Board will revise and modify this Order in accordance with such more stringent standards.

c. The filing of a request by the discharger for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. [40 CFR 122.41(f)]

4. Duty to Mitigate

The discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this order and permit which has a reasonable likelihood of adversely affecting public health or the environment, including such accelerated or additional monitoring as requested by the Board or Executive Officer to determine the nature and impact of the violation. [40 CFR 122.41(d)]

5. Pursuant to U.S. Environmental Protection Agency regulations the discharger must notify the Water Board as soon as it knows or has reason to believe (1) that they have begun or expect to begin, use or manufacture of a pollutant not reported in the permit application,

or (2) a discharge of toxic pollutants not limited by this permit has occurred, or will occur, in concentrations that exceed the limits specified in 40 CFR 122.42(a).

6. The discharge of any radiological, chemical, or biological warfare agent waste is prohibited.

7. All facilities used for transport, treatment, or disposal of wastes shall be adequately protected against overflow or washout as the result of a 100-year frequency flood.

8. Collection, treatment, storage and disposal systems shall be operated in a manner that precludes public contact with wastewater, except where excluding the public is inappropriate, warning signs shall be posted.

9. Property Rights

This Order and Permit does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from liabilities under federal, state or local laws, nor create a vested right for the discharge to continue the waste discharge or guarantee the discharger a capacity right in the receiving water. [40 CFR 122.41(g)]

10. Inspection and Entry

The Board or its authorized representatives shall be allowed:

a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of the order and permit;

b. Access to and copy at, reasonable times, any records that must be kept under the conditions of the order and permit;

c. To inspect at reasonable times any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under the order and permit; and

d. To photograph, sample, and monitor, at reasonable times for the purpose of assuring compliance with the order and permit or as otherwise authorized by the Clean Water Act, any substances or parameters at any locations. [40 CFR 122.41(i)]

11. Permit Actions

This Order and Permit may be modified, revoked and reissued, or terminated in accordance with applicable State and/or Federal regulations. Cause for taking such action includes, but is not limited to any of the following:

a. Violation of any term or condition contained in the Order and Permit;

b. Obtaining the Order and Permit by misrepresentation, or by failure to disclose fully all relevant facts;

c. Endangerment to public health or environment that can only be regulated to acceptable levels by order and permit modification or termination; and

d. Any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

12. Duty to Provide Information

The discharger shall furnish, within a reasonable time, any information the Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit. The discharger shall also furnish to the Board, upon request, copies of records required to be kept by its permit. [40 CFR 122.41(h)]

13. Availability

A copy of this permit shall be maintained at the discharge facility and be available at all times to operating personnel.

14. Continuation of Expired Permit

This permit continues in force and effect until a new permit is issued or the Board rescinds the permit. Only those dischargers authorized to discharge under the expiring permit are covered by the continued permit.

B. GENERAL REPORTING REQUIREMENTS

1. Signatory Requirements

a. All reports required by the order and permit and other information requested by the Board or USEPA Region 9 shall be signed by a principal executive officer or ranking elected official of the discharger, or by a duly authorized representative of that person. [40 CFR 122.22(b)]

b. Certification

All reports signed by a duly authorized representative under Provision E.1.a. shall contain the following certification:
"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. [40 CFR 122.22(d)]

2. Should the discharger discover that it failed to submit any relevant facts or that it submitted incorrect information in any report, it shall promptly submit the missing or correct information. [40 CFR 122.41(l)(8)]

3. False Reporting

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall be subject to enforcement procedures as identified in Section F of these Provisions.

4. Transfers

a. This permit is not transferable to any person except after notice to the Board. The Board may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

b. Transfer of control or ownership of a waste discharge facility under an National Pollutant Discharge Elimination System permit must be preceded by a notice to the Board at least 30 days in advance of the proposed transfer date. The notice must include a written agreement between the existing discharger and proposed discharger containing specific dates for transfer of responsibility, coverage, and liability between them. Whether an order and permit may be transferred without modification or revocation and reissuance is at the discretion of the Board. If order and permit modification or revocation and reissuance is necessary, transfer may be delayed 180 days after the Board's receipt of a complete application for waste discharge requirements and an NPDES permit.

5. Compliance Reporting

a. Planned Changes

The discharger shall file with the Board a report of waste discharge at least 120 days before making any material change or proposed change in the character, location or volume of the discharge.

b. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final compliance dates contained in any compliance schedule shall be submitted within 10 working days following each scheduled date unless otherwise specified within this order and permit. If reporting noncompliance, the report shall include a description of the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance and an estimated date for achieving full compliance. A final report shall be submitted within 10 working days of achieving full compliance, documenting full compliance

c. Non-compliance Reporting (Twenty-four hour reporting:)

i. The discharger shall report any noncompliance that may endanger health or the environment. All pertinent information shall be provided orally within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five working days of the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

C. ENFORCEMENT

1. The provision contained in this enforcement section shall not act as a limitation on the statutory or regulatory authority of the Board.

2. Any violation of the permit constitutes violation of the California Water Code and regulations adopted hereunder and the provisions of the Clean Water Act, and is the basis for enforcement action, permit termination, permit revocation and reissuance, denial of an application for permit reissuance; or a combination thereof.

3. The Board may impose administrative civil liability, may refer a discharger to the State Attorney General to seek civil monetary penalties, may seek injunctive relief or take other appropriate enforcement action as provided in the California Water Code or federal law for violation of Board orders.

4. It shall not be a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this order and permit.

5. A discharger seeking to establish the occurrence of any upset (See Definitions, G. 24) has the burden of proof. A discharger who wishes to establish the affirmative defense of any upset in an action brought for noncompliance shall demonstrate, through properly signed contemporaneous operating logs, or other relevant evidence that:

a. an upset occurred and that the Permittee can identify the cause(s) or the upset;

b. the permitted facility was being properly operated at the time of the upset;

c. the discharger submitted notice of the upset as required in paragraph E.6.d.; and

d. the discharger complied with any remedial measures required under A.4.

No determination made before an action for noncompliance, such as during administrative review of claims that noncompliance was caused by an upset, is final administrative action subject to judicial review.
In any enforcement proceeding, the discharger seeking to establish the occurrence of any upset has the burden of proof. [40 CFR 122.41(n)]

D. DEFINITIONS

1. DDT and Derivatives shall mean the sum of the p,p' and o,p' isomers of DDT, DDD (TDE), and DDE.

2. Duly authorized representative is one whose:

a. Authorization is made in writing by a principal executive officer or ranking elected official;

b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general manager in a partnership, manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

c. Written authorization is submitted to the USEPA Region 9. If an authorization becomes no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements above must be submitted to the Board and USEPA Region 9 prior to

or together with any reports, information, or applications to be signed by an authorized representative.

3. Hazardous substance means any substance designated under 40 CFR 116 pursuant to Section 311 of the Clean Water Act.

4. HCH shall mean the sum of the alpha, beta, gama (Lindane), and delta isomers of hexachlorocyclohexane.

5. Overflow is defined as the intentional or unintentional spilling or forcing out of untreated or partially treated wastes from a transport system (e.g. through manholes, at pump stations, and at collection points) upstream from the plant headworks or from any treatment plant facilities.

6. Priority pollutants are those constituents referred to in 40 CFR S122, Appendix D and listed in the USEPA NPDES Application Form 2C, (dated 6/80) Items V-3 through V-9.

7. Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage. It excludes infiltration and runoff from agricultural land.

8. Toxic pollutant means any pollutant listed as toxic under Section 307(a)(1) of the Clean Water Act or under 40 CFR S401.15.

9. Total Identifiable Chlorinated hydrocarbons (TICH) shall be measured by summing the individual concentrations of DDT, DDD, DDE, aldrin, BHC, chlordane, endrin, heptachlor, lindane, dieldrin, PCBs and other identifiable chlorinated hydrocarbons.

10. Waste, waste discharge, discharge of waste, and discharge are used interchangeably in this order and permit. The requirements of this order and permit are applicable to the entire volume of water, and the material therein, which is disposed of to surface and ground waters of the State of California.

ATTACHMENT L

Provision C.3.c.i.(1)(b)(vi)

Specification of Soils for Biotreatment or Bioretention Facilities

Soils for biotreatment or bioretention areas shall meet two objectives:

- Be sufficiently permeable to infiltrate runoff at a minimum rate of 5" per hour during the life of the facility, and
- Have sufficient moisture retention to support healthy vegetation.

Achieving both objectives with an engineered soil mix requires careful specification of soil gradations and a substantial component of organic material (typically compost).

Local soil products suppliers have expressed interest in developing 'brand-name' mixes that meet these specifications. At their sole discretion, municipal construction inspectors may choose to accept test results and certification for a 'brand-name' mix from a soil supplier.

Tests must be conducted within 120 days prior to the delivery date of the bioretention soil to the project site.

Batch-specific test results and certification shall be required for projects installing more than 100 cubic yards of bioretention soil.

SOIL SPECIFICATIONS

Bioretention soils shall meet the following criteria. "Applicant" refers to the entity proposing the soil mixture for approval by a Permittee.

1. General Requirements – Bioretention soil shall:
   a. Achieve a long-term, in-place infiltration rate of at least 5 inches per hour.
   b. Support vigorous plant growth.
   c. Consist of the following mixture of fine sand and compost, measured on a volume basis:

      60%-70% Sand

      30%-40% Compost
2. Submittal Requirements – The applicant shall submit to the Permittee for approval:
   a. A sample of mixed bioretention soil.
   b. Certification from the soil supplier or an accredited laboratory that the Bioretention Soil meets the requirements of this guideline specification.
   c. Grain size analysis results of the fine sand component performed in accordance with ASTM D 422, Standard Test Method for Particle Size Analysis of Soils.
   d. Quality analysis results for compost performed in accordance with Seal of Testing Assurance (STA) standards, as specified in 4.

e. Organic content test results of mixed Bioretention Soil. Organic content test shall be performed in accordance with by Testing Methods for the Examination of Compost and Composting (TMECC) 05.07A, "Loss-On-Ignition Organic Matter Method".

f. Grain size analysis results of compost component performed in accordance with ASTM D 422, Standard Test Method for Particle Size Analysis of Soils.

g. A description of the equipment and methods used to mix the sand and compost to produce Bioretention Soil.

h. Provide the name of the testing laboratory(s) and the following information:

(1) Contact person(s)

(2) Address(s)

(3) Phone contact(s)

(4) E-mail address(s)

(5) Qualifications of laboratory(s), and personnel including date of current certification by STA, ASTM, or approved equal

3. Sand for Bioretention Soil

a. Sand shall be free of wood, waste, coating such as clay, stone dust, carbonate, etc., or any other deleterious material. All aggregate passing the No. 200 sieve size shall be non-plastic.

b. Sand for Bioretention Soils shall be analyzed by an accredited lab using #200, #100, #40, #30, #16. #8, #4, and 3/8 inch sieves (ASTM D 422 or as approved by municipality), and meet the following gradation:

Sieve Size	**Percent Passing (by weight)**	
	Min	***Max***
3/8 inch	100	100
No. 4	90	100
No. 8	70	100
No. 16	40	95
No. 30	15	70
No. 40	5	55
No. 100	0	15
No. 200	0	5

Note: all sands complying with ASTM C33 for fine aggregate comply with the above gradation requirements.

4. Composted Material

Compost shall be a well decomposed, stable, weed free organic matter source derived from waste materials including yard debris, wood wastes or other organic materials not including manure or biosolids meeting the standards developed by the US Composting Council (USCC). The product shall be certified through the USCC Seal of Testing Assurance (STA) Program (a compost testing and information disclosure program).

a. Compost Quality Analysis – Before delivery of the soil, the supplier shall submit a copy of lab analysis performed by a laboratory that is enrolled in the US Composting Council's Compost Analysis Proficiency (CAP) program and using approved Test Methods for the Evaluation of Composting and Compost (TMECC). The lab report shall verify:

(1) Feedstock Materials shall be specified and include one or more of the following: landscape/yard trimmings, grass clippings, food scraps, and agricultural crop residues.

(2) Organic Matter Content: 35% - 75% by dry wt.

(3) Carbon and Nitrogen Ratio: C:N < 25:1 and C:N >15:1

(4) Maturity/Stability: shall have a dark brown color and a soil-like odor. Compost exhibiting a sour or putrid smell, containing recognizable grass or leaves, or is hot (120F) upon delivery or rewetting is not acceptable. In addition any one of the following is required to indicate stability:

(i) Oxygen Test < 1.3 O2 /unit TS /hr

(ii) Specific oxy. Test < 1.5 O2 / unit BVS /

(iii) Respiration test < 8 C / unit VS / day

(iv) Dewar test < 20 Temp. rise (°C) e.

(v) Solvita® > 5 Index value

(5) Toxicity: any one of the following measures is sufficient to indicate non-toxicity.

(i) NH4- : NO3-N < 3

(ii) Ammonium < 500 ppm, dry basis

(iii) Seed Germination > 80 % of control

(iv) Plant Trials > 80% of control

(v) Solvita® > 5 Index value

(6) Nutrient Content: provide analysis detailing nutrient content including N-P-K, Ca, Na, Mg, S, and B.

(i) Total Nitrogen content 0.9% or above preferred.

(ii) Boron: Total shall be <80 ppm; Soluble shall be <2.5 ppm

(7) Salinity: Must be reported; < 6.0 mmhos/cm

(8) pH shall be between 6.5 and 8. May vary with plant species.

b. Compost for Bioretention Soil Texture – Compost for bioretention soils shall be analyzed by an accredited lab using #200, 1/4 inch, 1/2 inch, and 1 inch sieves (ASTM D 422 or as approved by municipality), and meet the following gradation:

Sieve Size	Percent Passing (by weight)	
	Min	***Max***
1 inch	99	100
1/2 inch	90	100
1/4 inch	40	90
No. 200	2	10

c. Bulk density shall be between 500 and 1100 dry lbs/cubic yard

d. Moisture content shall be between 30% - 55% of dry solids.

e. Inerts – compost shall be relatively free of inert ingredients, including glass, plastic and paper, < 1 % by weight or volume.

f. Weed seed/pathogen destruction – provide proof of process to further reduce pathogens (PFRP). For example, turned windrows must reach min. 55C for 15 days with at least 5 turnings during that period.

g. Select Pathogens – Salmonella <3 MPN/4grams of TS, or Coliform Bacteria <10000 MPN/gram.

h. Trace Contaminants Metals (Lead, Mercury, Etc.) – Product must meet US EPA, 40 CFR 503 regulations.

i. Compost Testing – The compost supplier will test all compost products within 120 calendar days prior to application. Samples will be taken using the STA sample collection protocol. (The sample collection protocol can be obtained from the U.S. Composting Council, 4250 Veterans Memorial Highway, Suite 275, Holbrook, NY 11741 Phone: 631-737-4931, www.compostingcouncil.org). The sample shall be sent to an independent STA Program approved lab. The compost supplier will pay for the test.

VERIFICATION OF ALTERNATIVE BIORETENTION SOIL MIXES

Bioretention soils not meeting the above criteria shall be evaluated on a case by case basis. Alternative bioretention soil shall meet the following specification: "Soils for bioretention facilities shall be sufficiently permeable to infiltrate runoff at a minimum rate of 5 inches per hour during the life of the facility, and provide sufficient retention of moisture and nutrients to support healthy vegetation."

The following steps shall be followed by municipalities to verify that alternative soil mixes meet the specification:

1. General Requirements – Bioretention soil shall achieve a long-term, in-place infiltration rate of at least 5 inches per hour. Bioretention soil shall also support vigorous plant growth. The applicant refers to the entity proposing the soil mixture for approval.

   a. Submittals – The applicant must submit to the municipality for approval:

      (1) A sample of mixed bioretention soil.

      (2) Certification from the soil supplier or an accredited laboratory that the Bioretention Soil meets the requirements of this guideline specification.

      (3) Certification from an accredited geotechnical testing laboratory that the Bioretention Soil has an infiltration rate between 5 and 12 inches per hour as tested according to Section 1.b.(2)(ii).

      (4) Organic content test results of mixed Bioretention Soil. Organic content test shall be performed in accordance with by Testing Methods for the Examination of Compost and Composting (TMECC) 05.07A, "Loss-On-Ignition Organic Matter Method".

      (5) Grain size analysis results of mixed bioretention soil performed in accordance with ASTM D 422, Standard Test Method for Particle Size Analysis of Soils.

      (6) A description of the equipment and methods used to mix the sand and compost to produce Bioretention Soil.

      (7) The name of the testing laboratory(s) and the following information:

         (i) contact person(s)

         (ii) address(s)

         (iii) phone contact(s)

         (iv) e-mail address(s)

         (v) qualifications of laboratory(s), and personnel including date of current certification by STA, ASTM, or approved equal

   b. Bioretention Soil

      (1) Bioretention Soil Texture

      Bioretention Soils shall be analyzed by an accredited lab using #200, and 1/2" inch sieves (ASTM D 422 or as approved by municipality), and meet the following gradation:

Sieve Size	**Percent Passing (by weight)**	
	Min	***Max***
1/2 inch	97	100
No. 200	2	5

      (2) Bioretention Soil Permeability testing

      Bioretention Soils shall be analyzed by an accredited geotechnical lab for the following tests:

(i) Moisture – density relationships (compaction tests) shall be conducted on bioretention soil. Bioretention soil for the permeability test shall be compacted to 85 to 90 percent of the maximum dry density (ASTM D1557).

(ii) Constant head permeability testing in accordance with ASTM D2434 shall be conducted on a minimum of two samples with a 6-inch mold and vacuum saturation.

MULCH FOR BIORETENTION FACILITIES

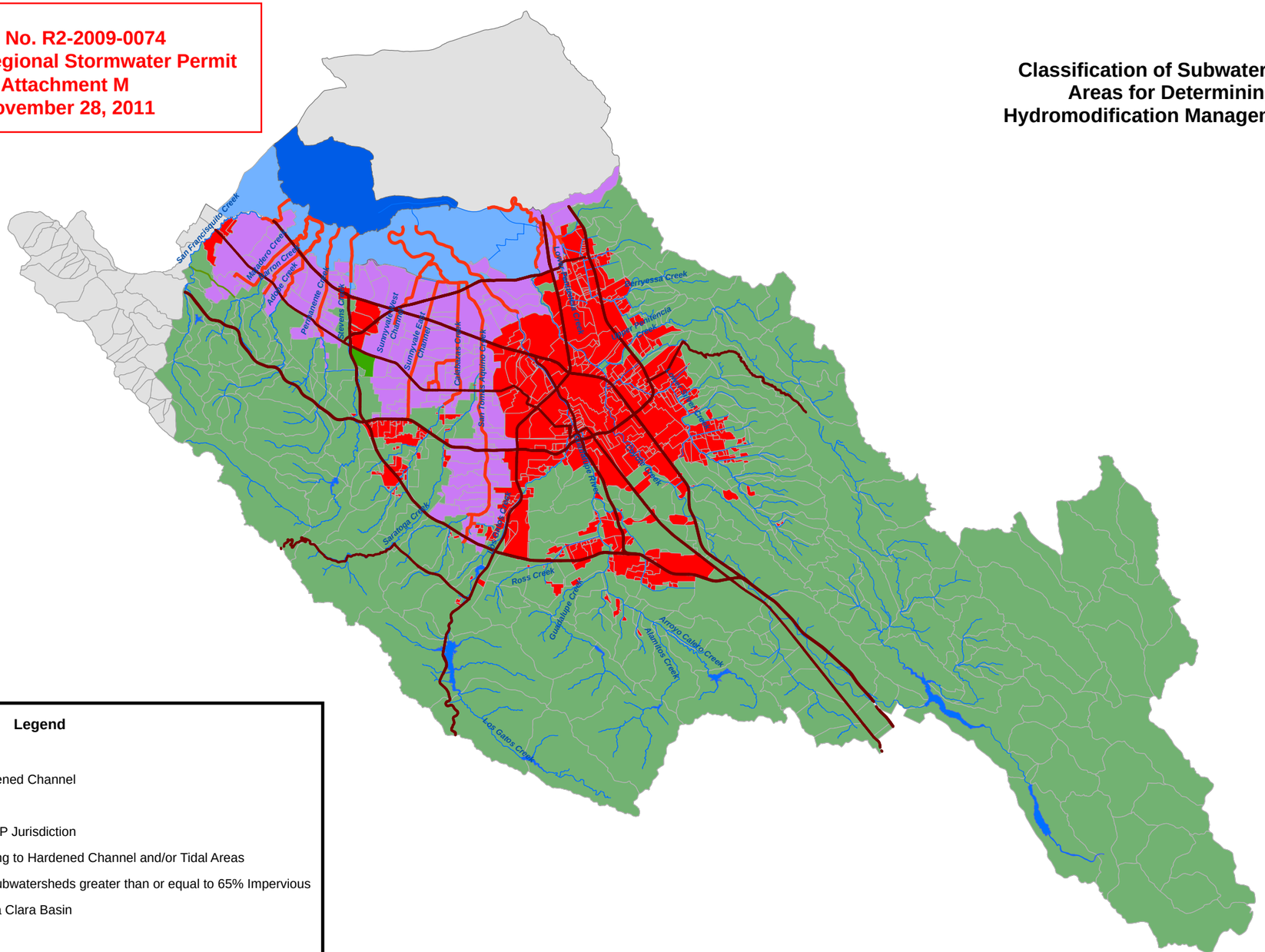
Mulch is recommended for the purpose of retaining moisture, preventing erosion and minimizing weed growth. Projects subject to the State's Model Water Efficiency Landscaping Ordinance (or comparable local ordinance) will be required to provide at least two inches of mulch. Aged mulch, also called compost mulch, reduces the ability of weeds to establish, keeps soil moist, and replenishes soil nutrients. Aged mulch can be obtained through soil suppliers or directly from commercial recycling yards. It is recommended to apply 1" to 2" of composted mulch, once a year, preferably in June following weeding.

ATTACHMENT M

Provision C.3.g.
Santa Clara Permittees
Revised Hydromodification Management Map

Order No. R2-2009-0074
Municipal Regional Stormwater Permit
Attachment M
November 28, 2011

Classification of Subwatersheds and Catchment Areas for Determining Applicability of Hydromodification Management (HM) Requirements



Legend

- Major Roads
- Continuously Hardened Channel
- Major Creeks
- Outside SCVURPPP Jurisdiction
- Catchments Draining to Hardened Channel and/or Tidal Areas
- Catchments and Subwatersheds greater than or equal to 65% Impervious
- Reservoirs in Santa Clara Basin
- Baylands
- Subwatersheds less than 65% Impervious

Revision Date: November 2010

N

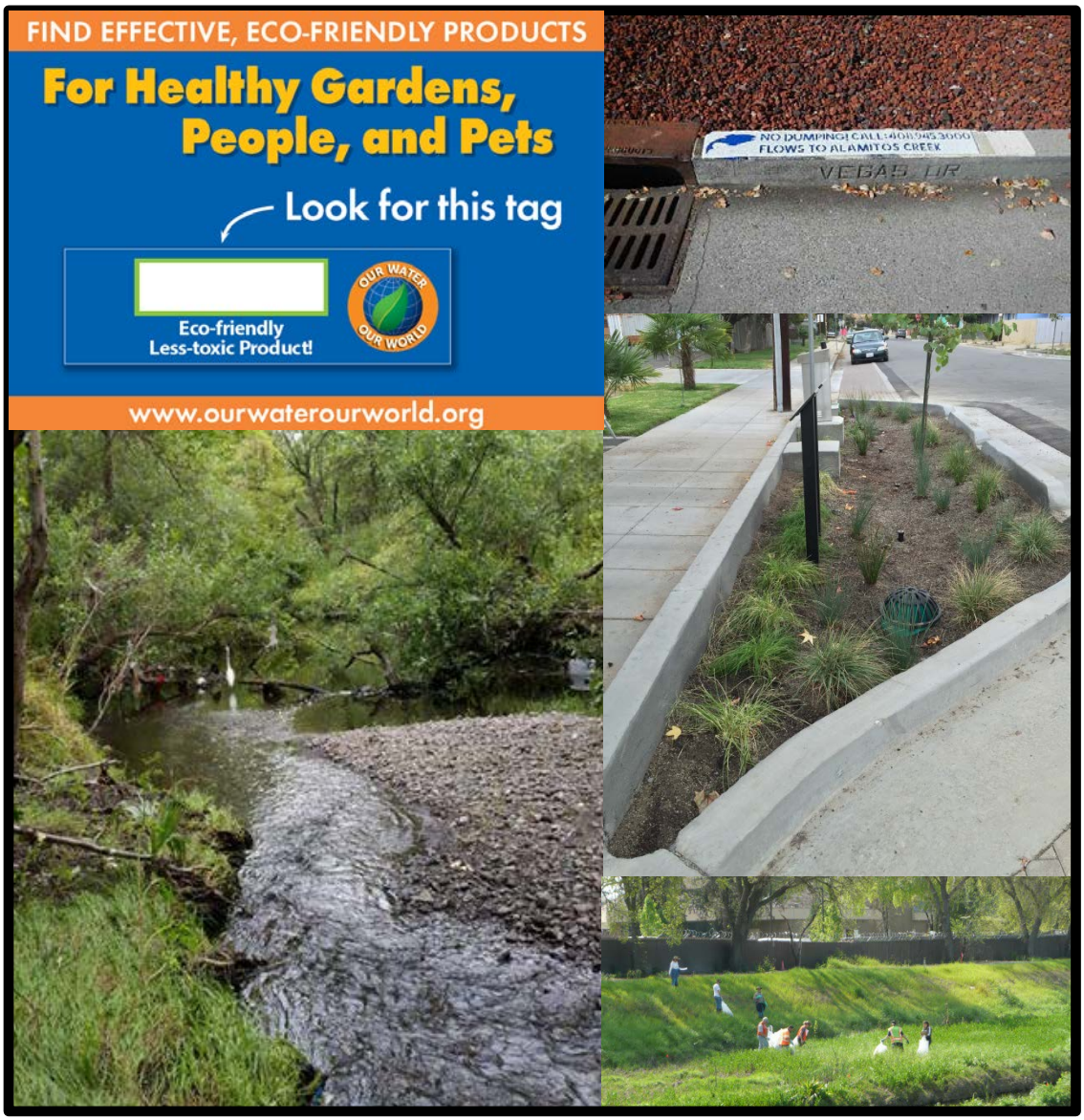
0 0.5 1 2 3 4 5 Miles

This map contains revisions to the March 2009 version to reflect updated impervious surface data and/or catchment boundaries in the Cities of San Jose, Sunnyvale, Mountain View, and Milpitas, as described in the report to the Water Board dated October 14, 2010, consistent with the HM applicability criteria set forth in Attachment F, Section 4 of the MRP.

EXHIBIT 2

California Regional Water Quality Control Board
San Francisco Bay Region
Municipal Regional Stormwater NPDES Permit

Order No. R2-2015-0049
NPDES Permit No. CAS612008
November 19, 2015



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California Regional Water Quality Control Board
San Francisco Bay Region
Municipal Regional Stormwater NPDES Permit

ORDER No. R2-2015-0049
NPDES PERMIT No. CAS612008

Issuing Waste Discharge Requirements and National Pollutant Discharge Elimination System (NPDES) Permit for the discharge of stormwater runoff from the municipal separate storm sewer systems (MS4s) of the following jurisdictions and entities, which are permitted under this San Francisco Bay Municipal Regional Stormwater Permit (MRP):

The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County, the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District, which have joined together to form the Alameda Countywide Clean Water Program (Alameda Permittees)

The cities of Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, the Contra Costa County Flood Control and Water Conservation District, which have joined together to form the Contra Costa Clean Water Program (Contra Costa Permittees)

The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and Santa Clara County, which have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (Santa Clara Permittees)

The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood Control District, and San Mateo County, which have joined together to form the San Mateo Countywide Water Pollution Prevention Program (San Mateo Permittees)

The cities of Fairfield and Suisun City, which have joined together to form the Fairfield-Suisun Urban Runoff Management Program (Fairfield-Suisun Permittees)

The City of Vallejo and the Vallejo Sanitation and Flood Control District (Vallejo Permittees)

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The California Regional Water Quality Control Board, San Francisco Bay Region, (hereinafter referred to as the Water Board) finds that:

FINDINGS

Incorporation of Fact Sheet

1. The Fact Sheet for the San Francisco Bay Municipal Regional Stormwater National Pollutant Discharge Elimination System (NPDES) Permit (Attachment A) includes cited regulatory and legal references and additional explanatory information in support of the requirements of this Permit. The Fact Sheet, including any supplements thereto, is hereby incorporated by reference.

Existing Permit

2. **Alameda County—**The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County (Unincorporated area), the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District have joined together to form the Alameda Countywide Clean Water Program (hereinafter collectively referred to as the Alameda Permittees) and have submitted a permit application (Report of Waste Discharge), dated May 30, 2014, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Alameda Permittees' jurisdictions. The Alameda Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083 on November 28, 2011, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.

3. **Contra Costa County—**The cities of Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District have joined together to form the Contra Costa Clean Water Program (hereinafter collectively referred to as the Contra Costa Permittees) and have submitted a permit application (Report of Waste Discharge), dated June 2, 2014, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Contra Costa Permittees' jurisdictions. The Contra Costa Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083 on November 28, 2011, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.

4. **San Mateo County—**The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood Control District and San Mateo County have joined together to form the San Mateo Countywide Water

Pollution Prevention Program (hereinafter collectively referred to as the San Mateo Permittees) and have submitted a permit application (Report of Waste Discharge), dated May 30, 2014, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the San Mateo Permittees' jurisdictions. The San Mateo Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083 on November 28, 2011, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.

5. **Santa Clara County—**The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and the County of Santa Clara have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (hereinafter collectively referred to as the Santa Clara Permittees) and have submitted a permit application (Report of Waste Discharge), dated May 29, 2014, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Santa Clara Permittees' jurisdictions. The Santa Clara Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083 on November 28, 2011, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.

6. **Fairfield-Suisun—**The cities of Fairfield and Suisun City have joined together to form the Fairfield-Suisun Urban Runoff Management Program (hereinafter referred to as the Fairfield-Suisun Permittees) and have submitted a permit application (Report of Waste Discharge), dated June 2, 2014, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Fairfield-Suisun Permittees' jurisdictions. The Fairfield-Suisun Permittees are currently subject to NPDES Permit No. CAS0612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083 on November 28, 2011, to discharge stormwater runoff from storm drains and watercourses within their jurisdictions.

7. **Vallejo—**The City of Vallejo and the Vallejo Sanitary District (hereinafter referred to as the Vallejo Permittees) have submitted permit applications (Report of Waste Discharge), dated July 3 and June 2, 2014, respectively, for reissuance of their waste discharge requirements under the NPDES permit to discharge stormwater runoff from storm drains and watercourses within the Vallejo Permittees' jurisdictions. The Vallejo Permittees are currently subject to NPDES Permit No. CAS612008 issued by Order No. R2-2009-0074 on October 14, 2009, and amended by Order No. R2-2011-0083, to discharge stormwater runoff from storm drains and watercourses within the their jurisdictions.

8. The Alameda, Contra Costa, San Mateo, Santa Clara, Fairfield-Suisun, and Vallejo Permittees are hereinafter referred to in this Order as the Permittees.

Applicable Federal, State and Regional Regulations

9. Section 402(p) of the federal Clean Water Act (CWA), as amended by the Water Quality Act of 1987, requires NPDES permits for stormwater discharges from municipal separate storm sewer systems (MS4s), stormwater discharges associated with industrial activity (including

construction activities), and designated stormwater discharges, which are considered significant contributors of pollutants to waters of the United States. On November 16, 1990, USEPA published regulations (40 CFR Part 122), which prescribe permit application requirements for MS4s pursuant to CWA 402(p). On May 17, 1996, USEPA published an Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems, which provided guidance on permit application requirements for regulated MS4s.

10. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law, and USEPA, where required.

11. The Water Board finds stormwater discharges from urban and developing areas in the San Francisco Bay Region to be significant sources of certain pollutants that cause or may be causing or threatening to cause or contribute to water quality impairment in waters of the Region. Furthermore, as delineated in the CWA section 303(d) list, the Water Board has found that there is a reasonable potential that municipal stormwater discharges cause or may cause or contribute to an excursion above water quality standards for the following pollutants: mercury, PCBs, furans, dieldrin, chlordane, DDT, trash, and selenium in San Francisco Bay segments; pesticide associated toxicity, and trash in urban creeks; and trash and low dissolved oxygen in Lake Merritt, in Alameda County. In accordance with CWA section 303(d), the Water Board is required to establish Total Maximum Daily Loads (TMDLs) for these pollutants to these waters to gradually eliminate impairment and attain water quality standards. Therefore, pollutant control actions and further pollutant impact assessments by the Permittees are warranted and required pursuant to this Order.

12. Under section 13389 of the California Water Code, this action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (CEQA).

Nature of Discharges and Sources of Pollutants

13. Stormwater runoff is generated from various land uses in all the hydrologic sub-basins in the Basin and discharges into watercourses, which in turn flow into Central, Lower and South San Francisco Bay, and Suisun and San Pablo Bays.

14. The quality and quantity of runoff discharges vary considerably and are affected by hydrology, geology, land use, season, and sequence and duration of hydrologic events. Pollutants of concern in these discharges are certain heavy metals; excessive sediment production from erosion due to anthropogenic activities; petroleum hydrocarbons from sources such as used motor oil; microbial pathogens of domestic sewage origin from illicit discharges; certain pesticides associated with acute aquatic toxicity; excessive nutrient loads, which can cause or contribute to the depletion of dissolved oxygen and/or toxic concentrations of dissolved ammonia; trash, which impairs beneficial uses including, but not

limited to, support for aquatic life; and other pollutants that can cause aquatic toxicity in the receiving waters.

15. Federal, State or regional entities within the Permittees' boundaries, not currently named in this Order, operate storm drain facilities and/or discharge stormwater to the storm drains and watercourses covered by this Order. The Permittees may lack jurisdiction over these entities. Consequently, the Water Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. The Water Board will consider such facilities for coverage under its NPDES permitting scheme pursuant to USEPA stormwater regulations.

16. Certain pollutants present in stormwater and/or urban runoff can be derived from extraneous sources over which the Permittees have limited or no direct jurisdiction. Examples of such pollutants and their respective sources are polycyclic aromatic hydrocarbons (PAHs), which are products of internal combustion engine operation and other sources; heavy metals, such as copper from vehicle brake pad wear and zinc from vehicle tire wear; dioxins as products of combustion; polybrominated diphenyl ethers that are incorporated in many household products as flame retardants; mercury resulting from atmospheric deposition; and naturally occurring minerals from local geology. All these pollutants, and others, can be deposited on paved surfaces, rooftops, and other impervious surfaces as fine airborne particles—thus yielding stormwater runoff pollution that is unrelated to the activity associated with a given project site.

17. The Water Board will notify interested agencies and interested persons of the availability of reports, plans, and schedules, including Annual Reports, and will provide interested persons with an opportunity for a public hearing and/or an opportunity to submit their written views and recommendations. The Water Board will consider all comments and may modify the reports, plans, or schedules or may modify this Order in accordance with applicable law. All submittals required by this Order conditioned with acceptance by the Water Board will be subject to these notification, comment, and public hearing procedures.

18. The Water Board notified the Permittees and interested agencies and persons of its intent to adopt this Order and provided an opportunity to submit written comments and recommendations.

19. The Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

20. This Order supersedes and rescinds Order Nos. R2-2009-0074 and R2-2011-0083.

21. This Order serves as a NPDES permit, pursuant to CWA section 402, or amendments thereto, and shall become effective January 1, 2016, provided the Regional Administrator, USEPA, Region 9, has no objections.

THEREFORE, IT IS HEREBY ORDERED that Order No. R2-2009-0074 and R2-2011-0183 are rescinded upon the effective date of this Order except for enforcement purposes, and, in order to meet the provisions of Water Code division 7 (commencing with § 13000) and regulations adopted thereunder, and the provisions of the CWA and regulations and guidelines adopted thereunder, the Permittees shall comply with the following requirements in this Order. This action in no way prevents the Water Board from taking enforcement action for past violations of the previous orders.

A. DISCHARGE PROHIBITIONS

A.1. The Permittees shall, within their respective jurisdictions, effectively prohibit the discharge of non-stormwater (materials other than stormwater) into storm drain systems and watercourses. NPDES-permitted discharges are exempt from this prohibition. Provision C.15 describes a tiered categorization of non-stormwater discharges based on potential for pollutant content that may be discharged upon adequate assurance that the discharge contains no pollutants of concern at concentrations that will impact beneficial uses or cause exceedances of water quality standards.

A.2. It shall be prohibited to discharge rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas.

B. RECEIVING WATER LIMITATIONS

B.1. The discharge shall not cause the following conditions to create a condition of nuisance or to adversely affect beneficial uses of waters of the State:

- **a.** Floating, suspended, or deposited macroscopic particulate matter, or foam;
- **b.** Bottom deposits or aquatic growths;
- **c.** Alteration of temperature, turbidity, or apparent color beyond present natural background levels;
- **d.** Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
- **e.** Substances present in concentrations or quantities that would cause deleterious effects on aquatic biota, wildlife, or waterfowl, or that render any of these unfit for human consumption.

B.2. The discharge shall not cause or contribute to a violation of any applicable water quality standard for receiving waters. If applicable water quality objectives are adopted and approved by the State Water Board after the date of the adoption of this Order, the Water Board may revise and modify this Order as appropriate.

C.1. Compliance with Discharge Prohibitions and Receiving Waters Limitations

The Permittees shall comply with Discharge Prohibitions A.1 and A.2 and Receiving Water Limitations B.1 and B.2 through the timely implementation of control measures and other actions as specified in Provisions C.2 through C.15. Compliance with Provisions C.9 through C.12 and C.14 of this Order, which prescribe requirements and schedules for Permittees identified therein to manage their discharges that may cause or contribute to violations of water quality standards (WQS) for pesticides, trash, mercury, polychlorinated biphenyls (PCBs), and bacteria, shall constitute compliance during the term of this Order with Receiving Water Limitations B.1 and B.2 for the pollutants and the receiving waters identified in the provisions. Compliance with Provision C.10, which prescribes requirements and schedules for Permittees to manage their discharges of trash, shall also constitute compliance with Discharge Prohibitions A.1 and A.2 during the term of this Order for discharges of trash. If exceedance(s) of (WQS), except for exceedances of water quality standards for pesticides, trash, mercury, PCBs, and bacteria that are managed pursuant to Provisions C.9 through C.12 and C.14, persist in receiving waters notwithstanding the implementation of the required controls and actions, the Permittees shall comply with the following procedure:

a. Upon a determination by either the Permittee(s) or the Water Board that discharges are causing or contributing to an exceedance of an applicable (WQS), the Permittee(s) shall notify, within no more than 30 days, and thereafter submit a report to the Water Board that describes controls or best management practices (BMPs) that are currently being implemented, and the current level of implementation, and additional controls or BMPs that will be implemented, and/or an increased level of implementation, to prevent or reduce the discharge of pollutants that are causing or contributing to the exceedance of water quality standards. The report may be submitted in conjunction with the Annual Report, unless the Water Board directs an earlier submittal, and shall constitute a request to the Water Board for amendment of this NPDES Permit. The report and application for amendment shall include an implementation schedule. The Water Board may require modifications to the report and application for amendment; and

b. Submit any modifications to the report required by the Water Board within 30 days of notification.

As long as Permittees have complied with the procedures set forth above, they do not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the Water Board to develop additional control measures and BMPs and reinitiate the Permit amendment process.

C.2. Municipal Operations

The purpose of this provision is to ensure implementation of appropriate BMPs by all Permittees to control and reduce non-stormwater and polluted stormwater discharges to storm drains and watercourses during operation, inspection, and routine repair and maintenance activities of municipal facilities and infrastructure.

C.2.a. Street and Road Repair and Maintenance

i. Task Description – Asphalt/Concrete Removal, Cutting, Installation, and Repair

The Permittees shall implement appropriate BMPs at street and road repair and/or maintenance sites to control debris and waste materials during road and parking lot installation, repaving, or repair maintenance activities, such as those described in the California Stormwater Quality Association's (CASQA's) Handbook for Municipal Operations.

ii. Implementation Levels

(1) The Permittees shall require proper management of concrete slurry and wastewater, asphalt, pavement cutting, and other street and road maintenance materials and wastewater to avoid discharge to storm drains from such work sites. The Permittees shall coordinate with sanitary sewer agencies to determine if disposal to the sanitary sewer system is available for the wastewater generated from these activities provided that appropriate approvals are obtained and pretreatment standards are met.

(2) The Permittees shall require sweeping and/or vacuuming to remove debris, concrete, or sediment residues from such work sites upon completion of work. The Permittees shall require cleanup of all construction debris, spills, and leaks using dry methods (e.g., absorbent materials, rags, pads, and vacuuming), as described in the Bay Area Stormwater Management Agencies Association's (BASMAA's) Blueprint for a Clean Bay.

iii. Reporting – The Permittees shall report on implementation of and compliance with these BMPs in the Annual Report.

C.2.b. Sidewalk/Plaza Maintenance and Pavement Washing

i. Task Description – The Permittees shall implement and require to be implemented BMPs that prevent the discharge of polluted wash water and non-stormwater to storm drains for pavement washing; sidewalk and plaza cleaning; mobile cleaning; pressure washing operations in locations such as parking lots and garages; trash areas; and gas station fueling areas. The Permittees shall implement the BMPs included in BASMAA's Mobile Surface Cleaner Program. The Permittees shall coordinate with sanitary sewer agencies to determine if disposal to the sanitary sewer is available for the wastewater generated from these activities provided that appropriate approvals and pretreatment standards are met.

ii. Reporting – The Permittees shall report on implementation of and compliance with these BMPs in their Annual Report.

C.2.c. Bridge and Structure Maintenance and Graffiti Removal

i. Task Description

(1) The Permittees shall implement appropriate BMPs to prevent polluted stormwater and non-stormwater discharges from bridges and structural maintenance activities directly over water or into storm drains.

(2) The Permittees shall implement BMPs for graffiti removal that prevent non-stormwater and wash water discharges into storm drains.

ii. Implementation Levels

(1) The Permittees shall prevent all debris, including structural materials and coating debris, such as paint chips, and other debris and pollutants generated in bridge and structure maintenance or graffiti removal from entering storm drains or water courses.

(2) The Permittees shall protect nearby storm drain inlets before removing graffiti from walls, signs, sidewalks, or other structures. The Permittees shall prevent any discharge of debris, cleaning compound waste, paint waste, or wash water due to graffiti removal from entering storm drains or watercourses.

(3) The Permittees shall use proper disposal methods for wastes generated from these activities. The Permittees shall train their employees and/or specify in contracts the proper capture and disposal methods for the wastes generated.

iii. Reporting – The Permittees shall report on implementation of and compliance with these BMPs in their Annual Report.

C.2.d. Stormwater Pump Stations

i. Task Description –The Permittees shall implement measures to operate, inspect, and maintain stormwater pump stations to eliminate non-stormwater discharges containing pollutants, and to reduce pollutant loads in stormwater discharges to comply with WQSs.

ii. Implementation Levels – The Permittees shall comply with the following at Permittee-owned or -operated pump stations:

(1) Upon becoming aware that the discharge from a pump station has a dissolved oxygen (DO) concentration below 3.0 mg/L, implement corrective actions, such as continuous pumping at a low flow rate, aeration, or other appropriate methods to maintain DO concentrations of the discharge above 3 milligrams per liter (mg/L) and verify the effectiveness of the corrective actions with monitoring. Corrective actions do not need to be implemented on discharges from pump stations that

remain in the stormwater collection system or infiltrate into a dry creek immediately downstream.

(2) Ensure that pump stations are free from debris and trash and replace any oil absorbent booms, as needed, and investigate and abate illicit discharges. Pump stations excluded from C.2.d.ii.(1) above are not excluded from this requirement.

(3) The Permittees shall maintain records of inspection, maintenance, implementation of corrective actions, and any monitoring records at Permittee-owned or -operated pumped stations. These records shall be made available to Water Board staff or its representatives during inspections and audits, or otherwise upon request.

C.2.e. Rural Public Works Construction and Maintenance

i. Task Description – Rural Road and Public Works Construction and Maintenance

For the purpose of this provision, rural means any watershed or portion thereof that is developed with large lot home-sites, such as one acre or larger, or with primarily agricultural, grazing, or open space uses. The Permittees shall implement and require contractors to implement BMPs for erosion and sediment control during and after construction for maintenance activities on rural roads, particularly in or adjacent to stream channels or wetlands. The Permittees shall notify the Water Board, the California Department of Fish and Wildlife (CDFW), and the U.S. Army Corps of Engineers, where applicable, and obtain appropriate agency permits for rural public works activities before work in or near creeks and wetlands.

ii. Implementation Level

(1) The Permittees shall continue to implement BMPs for erosion and sediment control measures during construction and maintenance activities on rural roads, including developing and implementing appropriate training and technical assistance resources for rural public works activities.

(2) The Permittees shall implement appropriate BMPs for the following activities. BMPs shall minimize impacts on streams and wetlands in the course of rural road and public works maintenance and construction activities:

(a) Road design, construction, maintenance, and repairs in rural areas that prevent and control road-related erosion and sediment transport;

(b) Identification and prioritization of rural road maintenance on the basis of soil erosion potential, slope steepness, and stream habitat resources;

(c) Construction of roads and culverts that do not impact creek functions. New or replaced culverts shall not create a migratory fish passage barrier, where migratory fish are present, or lead to stream instability;

(d) Implementation of an inspection program to maintain rural roads' structural integrity and prevent impacts to water quality;

(e) Maintenance of rural roads adjacent to streams and riparian habitat to reduce erosion, replace damaging shotgun culverts, and address excessive erosion;

(f) Re-grading of unpaved rural roads to slope outward where consistent with road engineering safety standards, and installation of water bars as appropriate; and

(g) Replacement of existing culverts or design of new culverts or bridge crossings shall use measures to reduce erosion, provide fish passage, and maintain natural stream geomorphology in a stable manner.

(3) The Permittees shall incorporate existing training and guidance on permitting requirements for rural public works activities so as to stress the importance of proper planning and construction to avoid water quality impacts.

(4) The Permittees shall provide training incorporating these BMPs to rural public works maintenance staff at least twice within this Permit term.

iii. Reporting – The Permittees shall report on the implementation of and compliance with BMPs for the rural public works construction and maintenance activities in their Annual Report, including reporting on increased maintenance in priority areas.

C.2.f. Corporation Yard BMP Implementation

i. Task Description – Corporation Yard Maintenance

(1) The Permittees shall implement and maintain a site-specific Stormwater Pollution Prevention Plan (SWPPP) for corporation yards, including municipal vehicle maintenance, heavy equipment, and maintenance vehicle parking areas, and material storage facilities, to comply with water quality standards. Each SWPPP shall incorporate all applicable BMPs that are described in the California Stormwater Quality Association's (CASQA's) Handbook for Municipal Operations and the Caltrans Storm Water Quality Handbook Maintenance Staff Guide, May 2003, and its addenda, as appropriate.

(2) The requirements in this provision shall apply only to facilities that are not covered under the State Water Board's Industrial Stormwater NPDES General Permit.

ii. Implementation Level

(1) Implement BMPs to minimize pollutant discharges in stormwater and prohibit non-stormwater discharges, such as wash waters and street sweeper, vactor, and other related equipment wash water. Pollution control actions shall include, but not be limited to, good housekeeping practices, material and waste storage control, and vehicle leak and spill control.

(2) Routinely inspect corporation yards to ensure that non-stormwater discharges are not entering the storm drain system and pollutant discharges are prevented to the maximum extent practicable. At a minimum, each corporation yard shall be fully inspected each year between September 1 and September 30, beginning the 2016-2017 reporting year. Active non-stormwater discharges shall cease immediately. Corrective actions shall be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, a rationale shall be recorded.

(3) Plumb all vehicle and equipment wash areas to the sanitary sewer after coordination with the local sanitary sewer agency and equip with a pretreatment device (if necessary) in accordance with the requirements of the local sanitary sewer agency.

(4) Use dry cleanup methods when cleaning debris and spills from corporation yards. If wet cleaning methods must be used (e.g., pressure washing), the Permittee shall ensure that wash water is collected and disposed in the sanitary sewer after coordination with the local sanitary sewer agency and in accordance with the requirements of the local sanitary sewer agency. Any private companies hired by the Permittee to perform cleaning activities on Permittee-owned property shall follow the same requirements. In areas where sanitary sewer connection is not available, the Permittees shall collect and haul the wash water to a municipal wastewater treatment plant, or implement appropriate BMPs and dispose of the wastewater to land in a manner that does not adversely impact surface water or groundwater.

(5) Outdoor storage areas containing pollutants shall be covered and/or bermed to prevent discharges of polluted stormwater runoff or run-on to storm drain inlets.

iii. Reporting

(1) In the 2015-2016 Annual Report, Permittees shall report on implementation of SWPPPs, the results of inspections, and any followup actions in their Annual Report.

(2) Beginning with the 2016-2017 Annual Report, Permittees shall list activities conducted in the corporation yards that have BMPs in the site-specific SWPPP, date of inspections, the results of inspections, and any followup actions, including the date of any necessary corrective actions implemented, in their Annual Report.

C.3. New Development and Redevelopment

The goal of Provision C.3 is for the Permittees to use their planning authorities to include appropriate source control, site design, and stormwater treatment measures in new development and redevelopment projects to address stormwater runoff pollutant discharges and prevent increases in runoff flows from new development and redevelopment projects. This goal is to be accomplished primarily through the implementation of low impact development (LID) techniques.

C.3.a. New Development and Redevelopment Performance Standard Implementation

i. Task Description – At a minimum, each Permittee shall:

(1) Have adequate legal authority to implement all requirements of Provision C.3;

(2) Have adequate development review and permitting procedures to impose conditions of approval or other enforceable mechanisms to implement the requirements of Provision C.3. For projects discharging directly to CWA section 303(d)-listed waterbodies, conditions of approval must require that post-development runoff not exceed pre-development levels for such pollutants that are listed;

(3) Evaluate potential water quality effects and identify appropriate mitigation measures when conducting environmental reviews, such as under CEQA;

(4) Provide training adequate to implement the requirements of Provision C.3 for staff, including interdepartmental training;

(5) Provide outreach adequate to implement the requirements of Provision C.3, including providing education materials to municipal staff, developers, contractors, construction site operators, and owner/builders, early in the planning process and as appropriate;

(6) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable review, but not regulated by Provision C.3, encourage the inclusion of adequate site design measures that may include minimizing land disturbance and impervious surfaces (especially parking lots); clustering of structures and pavement; directing roof runoff to vegetated areas; use of micro-detention, including distributed landscape-based detention; preservation of open space; protection and/or restoration of riparian areas and wetlands as project amenities;

(7) For all new development and redevelopment projects that are subject to the Permittee's planning, building, development, or other comparable review, but not regulated by Provision C.3, encourage the inclusion of adequate source control measures to limit pollutant generation, discharge, and runoff. These source control measures should include:

- Storm drain inlet stenciling.

- Landscaping that minimizes irrigation and runoff, promotes surface infiltration where possible, minimizes the use of pesticides and fertilizers, and incorporates appropriate sustainable landscaping practices and programs, such as Bay-Friendly Landscaping.
- Appropriate covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas.
- Covered trash, food waste, and compactor enclosures.
- Plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's regulations and standards:
  - Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants.
  - Dumpster drips from covered trash and food compactor enclosures.
  - Discharges from outdoor covered wash areas for vehicles, equipment, and accessories.
  - Swimming pool water, if discharge to onsite vegetated areas is not a feasible option.
  - Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option.

(8) Revise, as necessary, General Plans to integrate water quality and watershed protection with water supply, flood control, habitat protection, groundwater recharge, and other sustainable development principles and policies (e.g., referencing the Bay-Friendly Landscape Guidelines).

ii. Reporting – Provide a brief summary of the method(s) of implementation of Provisions C.3.a.i.(1)–(8) in the 2016 Annual Report.

C.3.b. Regulated Projects

i. Task Description – The Permittees shall require all projects fitting the category descriptions listed in Provision C.3.b.ii. below (hereinafter called Regulated Projects) to implement LID source control, site design, and stormwater treatment onsite or at a joint stormwater treatment facility[1] in accordance with Provisions C.3.c. and C.3.d., unless the Provision C.3.e. alternate compliance options are invoked. For adjacent Regulated Projects that will discharge runoff to a joint stormwater treatment facility, the treatment facility must be completed by the end of construction of the first Regulated Project that will be discharging runoff to the joint stormwater treatment facility.

(1) Any Regulated Project that has been approved with stormwater treatment measures in compliance with Provision C.3.d. under a previous MS4

[1] **Joint stormwater treatment facility** – Stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects.

permit is exempt from the requirements of Provision C.3.c. (low impact development requirements).

(2) Any Regulated Project that was approved with no Provision C.3. stormwater treatment requirements under a previous MS4 permit and that has not begun construction by the effective date of this permit, shall be required to fully comply with the requirements of C.3.c. and C.3.d. Permittees may grant exemptions from this requirement as follows:

(a) An exemption may be granted to:

(i) Any Regulated Project that was previously approved with a vesting tentative map that confers a vested right to proceed with development in substantial compliance with the ordinance, policies, and standards in effect at the time the vesting tentative map was approved or conditionally approved, as allowed by State law.

(ii) Any Regulated Project for which the Permittee has no legal authority to require changes to previously granted approvals, such as projects that have been granted building permits.

(b) An exemption from the LID requirements of Provision C.3.c. may be granted to any Regulated Project as long as stormwater treatment with media filters is provided that comply with the hydraulic sizing requirements of Provision C.3.d.

Regulated Projects, as they are defined in this Provision, do not include detached single-family home projects that are not part of a larger plan of development.

ii. Regulated Projects are defined in the following categories:

(1) **Special Land Use Categories**

(a) **New Development or redevelopment projects** that fall into one of the categories listed below and that create and/or replace 5000 square feet or more of impervious surface (collectively over the entire project site). This category includes development projects of the following four types on public or private land that fall under the planning and building authority of a Permittee:

(i) Auto service facilities, described by the following Standard Industrial Classification (SIC) Codes: 5013, 5014, 5541, 7532-7534, and 7536-7539;

(ii) Retail gasoline outlets;

(iii) Restaurants (SIC Code 5812); or

(iv) Stand-alone uncovered parking lots and uncovered parking lots that are part of a development project if the parking lot creates and/or replaces 5,000 square feet or more of impervious surface. This category includes the top uncovered portion of parking structures, unless drainage from the uncovered portion is

connected to the sanitary sewer along with the covered portions of the parking structure.

(b) For redevelopment projects in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv), specific exclusions are:

(i) Interior remodels; and

(ii) Routine maintenance or repair such as:

- roof or exterior wall surface replacement, and/or
- pavement resurfacing within the existing footprint.

(c) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **50 percent or more** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).

(d) Where a redevelopment project in the categories specified in Provision C.3.b.ii.(1)(a)(i)-(iv) results in an alteration of **less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

(2) **Other Development Projects**

New development projects that create 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. This category includes development projects on public or private land that fall under the planning and building authority of a Permittee. Detached single-family home projects that are not part of a larger plan of development are specifically excluded.

(3) **Other Redevelopment Projects**

Redevelopment projects that create and/or replace 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single-family home subdivisions, multi-family attached subdivisions (town homes), condominiums, and apartments), mixed-use, and public projects. Redevelopment is any land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred. This

category includes redevelopment projects on public or private land that fall under the planning and building authority of a Permittee.

Specific exclusions to this category are:

- Interior remodels; and
- Routine maintenance or repair such as:
  - roof or exterior wall surface replacement, and/or
  - pavement resurfacing within the existing footprint.

(a) Where a redevelopment project results in an alteration of **50 percent or more** of the impervious surface of a previously existing development that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire redevelopment project).

(b) Where a redevelopment results in an alteration **of less than 50 percent** of the impervious surface of a previously existing development that was not subject to Provision C.3., only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the new and/or replaced impervious surface of the project).

(4) **Road Projects**

Any of the following types of road projects that create 10,000 square feet or more of newly constructed contiguous impervious surface and that fall under the building and planning authority of a Permittee:

(a) Construction of new streets or roads, including sidewalks and bicycle lanes built as part of the new streets or roads.

(b) Widening of existing streets or roads with additional traffic lanes.

(i) Where the addition of traffic lanes results in an alteration of more than 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, the entire project, consisting of all existing, new, and/or replaced impervious surfaces, shall be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat stormwater runoff from the entire street or road that had additional traffic lanes added).

(ii) Where the addition of traffic lanes results in an alteration of less than 50 percent of the impervious surface of an existing street or road within the project that was not subject to Provision C.3, only the new and/or replaced impervious surface of the project must be included in the treatment system design (i.e., stormwater treatment systems must be designed and sized to treat

stormwater runoff from only the new traffic lanes). However, if the stormwater runoff from the existing traffic lanes and the added traffic lanes cannot be separated, any onsite treatment system shall be designed and sized to treat stormwater runoff from the entire street or road. If an offsite treatment system is installed or in-lieu fees paid in accordance with Provision C.3.e, the offsite treatment system or in-lieu fees must address only the stormwater runoff from the added traffic lanes.

(c) Construction of impervious trails that are greater than 10 feet wide or are creek-side (within 50 feet of the top of bank).

(d) Specific exclusions to Provisions C.3.b.ii.(4)(a)-(c) include the following:

- Sidewalks built as part of new streets or roads and built to direct stormwater runoff to adjacent vegetated areas.
- Bicycle lanes built as part of new streets or roads but are not hydraulically connected to the new streets or roads and that direct stormwater runoff to adjacent vegetated areas.
- Impervious trails built to direct stormwater runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees.
- Sidewalks, bicycle lanes, or trails constructed with permeable surfaces.[2]
- Caltrans highway projects and associated facilities.

iii. Implementation Level – All elements of Provision C.3.b.i.-ii. shall be fully implemented immediately, including a database or equivalent tabular format that contains all the information listed under Reporting (Provision C.3.b.iv.)

iv. Reporting

(1) **C.3.b.i.(2) Reporting**

In the 2017 Annual Report, each Permittee shall provide a complete list of the development projects that are subject to the requirements of Provision C.3.b.i.(2). For each such project, the Permittee shall indicate the type of stormwater treatment system required or the specific exemption granted, pursuant to Provision C.3.b.i.(2)(a) and (b). If a Permittee has no projects subject to Provision C.3.b.i.(2), it shall so state in the 2017 Annual Report.

(2) **Annual Reporting – C.3.b.ii. Regulated Projects**

For each Regulated Project approved during the fiscal year reporting period, the following information shall be reported electronically in the

[2] Permeable surfaces include pervious concrete, porous asphalt, unit pavers, and granular materials.

fiscal year Annual Report, in tabular form (as set forth in the attached Provision C.3.b. Sample Reporting Table):

(a) Project Name, Number, Location (cross streets), and Street Address;

(b) Name of Developer, Phase No. (if project is being constructed in phases, each phase should have a separate entry), Project Type (e.g., commercial, industrial, multi-unit residential, mixed-use, public), and description;

(c) Project watershed;

(d) Total project site area and total area of land disturbed;

(e) Total new impervious surface area and/or total replaced impervious surface area;

(f) If redevelopment or road widening project, total pre-project impervious surface area and total post-project impervious surface area;

(g) Status of project (e.g., application date, application deemed complete date, project approval date);

(h) Source control measures;

(i) Site design measures;

(j) All post-construction stormwater treatment systems installed onsite, at a joint stormwater treatment facility, and/or at an offsite location;

(k) Operation and maintenance responsibility mechanism for the life of the project;

(l) Hydraulic Sizing Criteria used;

(m) Alternative compliance measures for Regulated Project (if applicable)

  (i) If alternative compliance will be provided at an offsite location in accordance with Provision C.3.e.i.(1), include information required in Provision C.3.b.iv.(2)(a) – (l) for the offsite project; and

  (ii) If alternative compliance will be provided by paying in-lieu fees in accordance with Provision C.3.e.i.(2), provide information required in Provision C.3.b.iv.(2)(a) – (l) for the Regional Project. Additionally, provide a summary of the Regional Project's goals, duration, estimated completion date, total estimated cost of the Regional Project, and estimated monetary contribution from the Regulated Project to the Regional Project; and

(n) Hydromodification (HM) Controls (see Provision C.3.g.) – If not required, state why not. If required, state control method used.

C.3.c. Low Impact Development (LID)

The goal of LID is to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing,

detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as rain barrels and cisterns, green roofs, permeable pavement, preserving undeveloped open space, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes.

Task Description

i. The Permittees shall, at a minimum, implement the following LID requirements:

(1) **Source Control Requirements**

Require all Regulated Projects to implement source control measures onsite that, at a minimum, shall include the following:

(a) Minimization of stormwater pollutants of concern in urban runoff through measures that may include plumbing of the following discharges to the sanitary sewer, subject to the local sanitary sewer agency's regulations and standards:

- Discharges from indoor floor mat/equipment/hood filter wash racks or covered outdoor wash racks for restaurants;
- Dumpster drips from covered trash, food waste, and compactor enclosures;
- Discharges from covered outdoor wash areas for vehicles, equipment, and accessories;
- Swimming pool water, if discharge to onsite vegetated areas is not a feasible option; and
- Fire sprinkler test water, if discharge to onsite vegetated areas is not a feasible option;

(b) Properly designed covers, drains, and storage precautions for outdoor material storage areas, loading docks, repair/maintenance bays, and fueling areas;

(c) Properly designed trash storage areas;

(d) Landscaping that minimizes irrigation and runoff, promotes surface infiltration, minimizes the use of pesticides and fertilizers, and incorporates other appropriate sustainable landscaping practices and programs such as Bay-Friendly Landscaping;

(e) Efficient irrigation systems; and

(f) Storm drain system stenciling or signage.

(2) **Site Design and Stormwater Treatment Requirements**

(a) Require each Regulated Project to implement at least the following design strategies onsite:

(i) Limit disturbance of natural water bodies and drainage systems; minimize compaction of highly permeable soils; protect slopes

and channels; and minimize impacts from stormwater and urban runoff on the biological integrity of natural drainage systems and water bodies;

(ii) Conserve natural areas, including existing trees, other vegetation, and soils;

(iii) Minimize impervious surfaces;

(iv) Minimize disturbances to natural drainages; and

(v) Minimize stormwater runoff by implementing one or more of the following site design measures:

- Direct roof runoff into cisterns or rain barrels for reuse.
- Direct roof runoff onto vegetated areas.
- Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
- Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
- Construct sidewalks, walkways, and/or patios with pervious pavement systems.[3]
- Construct driveways, bike lanes, and/or uncovered parking lots with pervious pavement systems.

(b) Permittees shall collectively, on a regional or countywide basis, develop and adopt design specifications for pervious pavement systems, subject to the Executive Officer's approval. If countywide design specifications have been adopted and are contained in countywide stormwater handbooks, Permittees may reference these documents in the Annual Reports.

(c) Require each Regulated Project to treat 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility.

(i) LID treatment measures are harvesting and use, infiltration, evapotranspiration, and biotreatment.

(ii) Biotreatment (or bioretention) systems shall be designed to have a surface area no smaller than what is required to accommodate a 5 inches/hour stormwater runoff surface loading rate, infiltrate runoff through biotreatment soil media at a minimum of 5 inches per hour, and maximize infiltration to the native soil during the life of the Regulated Project. The soil media for biotreatment (or bioretention) systems shall be designed to sustain healthy, vigorous plant growth and maximize stormwater runoff retention

[3] Pervious pavement systems include pervious asphalt, pervious concrete, pervious pavers, and grid pavers.

and pollutant removal. Permittees shall ensure that Regulated Projects use biotreatment soil media that meet the minimum specifications set forth in Attachment L of the previous permit (Order No. R2-2009-0074), dated November 28, 2011. Permittees may collectively (on an all-Permittee scale or countywide scale) develop and adopt revisions to the soil media minimum specifications, subject to the Executive Officer's approval.

(iii) Green roofs may be considered biotreatment systems that treat roof runoff only if they meet certain minimum specifications. Permittees shall ensure that green roofs installed at Regulated Projects meet the following minimum specifications:

(i) The green roof system planting media shall be sufficiently deep to provide capacity within the pore space of the media for the required runoff volume specified by Provision C.3.d.i.(1).

(ii) The green roof system planting media shall be sufficiently deep to support the long term health of the vegetation selected for the green roof, as specified by a landscape architect or other knowledgeable professional.

(d) Require any Regulated Project that does not comply with Provision C.3.c.i.(2)(c) above to meet the requirements established in Provision C.3.e for alternative compliance.

ii. Reporting

(1) Permittees shall collectively submit in the 2016 Annual Report, design specifications for pervious pavement systems that have been developed and adopted on a regional or countywide basis. If Permittees within a countywide program are using countywide design specifications that have been adopted and are contained in a countywide stormwater handbook, those Permittees may reference the countywide stormwater handbook in-lieu of submitting the actual design specifications.

(2) For specific tasks listed above that are reported using the reporting tables required for Provision C.3.b.iv, a reference to those tables will suffice.

C.3.d. Numeric Sizing Criteria for Stormwater Treatment Systems

i. Task Description – The Permittees shall require that stormwater treatment systems constructed for Regulated Projects meet at least one of the following hydraulic sizing design criteria:

(1) **Volume Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on volume capacity shall be designed to treat stormwater runoff equal to:

(a) The maximized stormwater capture volume for the area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients set forth in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998), pages 175–178 (e.g., approximately the 85th percentile 24-hour storm runoff event); or

(b) The volume of annual runoff required to achieve 80 percent or more capture, determined in accordance with the methodology set forth in Section 5 of CASQA's Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.

(2) **Flow Hydraulic Design Basis** – Treatment systems whose primary mode of action depends on flow capacity shall be sized to treat:

(a) 10 percent of the 50-year peak flow rate;

(b) The flow of runoff produced by a rain event equal to at least two times the 85th percentile hourly rainfall intensity for the applicable area, based on historical records of hourly rainfall depths; or

(c) The flow of runoff resulting from a rain event equal to at least 0.2 inches per hour intensity.

(3) **Combination Flow and Volume Design Basis** – Treatment systems that use a combination of flow and volume capacity shall be sized to treat at least 80 percent of the total runoff over the life of the project, using local rainfall data.

ii. Reporting – Permittees shall use the reporting tables required in Provision C.3.b.iv.(2)

iii. Limitations on Use of Infiltration Devices in Stormwater Treatment Systems

(1) For Regulated Projects, each Permittee shall review planned land use and proposed treatment design to verify that installed stormwater treatment systems with no under-drain, and that function primarily as infiltration devices, should not cause or contribute to the degradation of groundwater quality at project sites. An infiltration device is any structure that is designed to infiltrate stormwater into the subsurface and, as designed, bypass the natural groundwater protection afforded by surface soil.

Infiltration devices include dry wells, injection wells, and infiltration trenches (includes french drains).

(2) For any Regulated Project that includes plans to install stormwater treatment systems which function primarily as infiltration devices, the Permittee shall require that:

(a) Appropriate pollution prevention and source control measures are implemented to protect groundwater at the project site, including the inclusion of a minimum of two feet of suitable soil to achieve a maximum 5 inches/hour infiltration rate for the infiltration system;

(b) Adequate maintenance is provided to maximize pollutant removal capabilities;

(c) The vertical distance from the base of any infiltration device to the seasonal high groundwater mark is at least 10 feet. (Note that some locations within the Permittees' jurisdictions are characterized by highly porous soils and/or high groundwater tables. In these areas, a greater vertical distance from the base of the infiltration device to the seasonal high groundwater mark may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety);

(d) Unless stormwater is first treated by a method other than infiltration, infiltration devices are not approved as treatment measures for runoff from areas of industrial or light industrial activity; areas subject to high vehicular traffic (i.e., 25,000 or greater average daily traffic on a main roadway or 15,000 or more average daily traffic on any intersecting roadway); automotive repair shops; car washes; fleet storage areas (e.g., bus, truck); nurseries; and other land uses that pose a high threat to water quality;

(e) Infiltration devices are not placed in the vicinity of known contamination sites unless it has been demonstrated that increased infiltration will not increase leaching of contaminants from soil, alter groundwater flow conditions affecting contaminant migration in groundwater, or adversely affect remedial activities; and

(f) Infiltration devices are located a minimum of 100 feet horizontally away from any known water supply wells, septic systems, and underground storage tanks with hazardous materials. (Note that some locations within the Permittees' jurisdictions are characterized by highly porous soils and/or high groundwater tables. In these areas, a greater horizontal distance from the infiltration device to known water supply wells, septic systems, or underground storage tanks with hazardous materials may be appropriate, and treatment system approvals should be subject to a higher level of analysis that considers the potential for pollutants (such as from onsite chemical use), the

level of pretreatment to be achieved, and other similar factors in the overall analysis of groundwater safety).

C.3.e. Alternative or In-Lieu Compliance with Provision C.3.b.

i. The Permittees may allow a Regulated Project to provide alternative compliance with Provision C.3.b in accordance with one of the two options listed below:

(1) **Option 1: LID Treatment at an Offsite Location**
Treat a portion of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** treat the remaining portion of the Provision C.3.d runoff with LID treatment measures at an offsite project in the same watershed. The offsite LID treatment measures must provide hydraulically-sized treatment (in accordance with Provision C.3.d) of an equivalent quantity of both stormwater runoff and pollutant loading and achieve a net environmental benefit.

(2) **Option 2: Payment of In-Lieu Fees**
Treat a portion of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility **and** pay equivalent in-lieu fees[4] to treat the remaining portion of the Provision C.3.d runoff with LID treatment measures at a Regional Project.[5] The Regional Project must achieve a net environmental benefit.

(3) For the alternative compliance options described in Provision C.3.e.i.(1) and (2) above, offsite and Regional Projects must be completed within three years after the end of construction of the Regulated Project. However, the timeline for completion of a Regional Project may be extended, up to five years after the completion of the Regulated Project, with prior Executive Officer approval. Executive Officer approval will be granted contingent upon a demonstration of good faith efforts to implement the Regional Project, such as having funds encumbered and applying for the appropriate regulatory permits.

ii. Special Projects

(1) When considered at the watershed scale, certain land development projects characterized as smart growth, high density, or transit-oriented development can either reduce existing impervious surfaces, or create less "accessory" impervious areas and automobile-related pollutant impacts.

[4] **In-lieu fees** – Monetary amount necessary to provide both hydraulically-sized treatment (in accordance with Provision C.3.d) with LID treatment measures of an equivalent quantity of stormwater runoff and pollutant loading, and a proportional share of the operation and maintenance costs of the Regional Project.

[5] **Regional Project –** A regional or municipal stormwater treatment facility that discharges into the same watershed as the Regulated Project.

Incentive LID Treatment Reduction Credits approved by the Water Board may be applied to these Special Projects, which are Regulated Projects that meet the specific criteria listed below in Provision C.3.e.ii.(2). For any Special Project, the allowable incentive LID Treatment Reduction Credit is the maximum percentage of the amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, that may be treated with one or a combination of the following two types of non-LID treatment systems:

- Tree-box-type high flowrate biofilters
- Vault-based high flowrate media filters

The allowed LID Treatment Reduction Credit recognizes that density and space limitations for the Special Projects identified herein may make 100% LID treatment infeasible.

(2) Prior to granting any LID Treatment Reduction Credits, Permittees must first establish all the following:

(a) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite;

(b) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures offsite or paying in-lieu fees to treat 100% of the Provision C.3.d runoff with LID treatment measures at an offsite or Regional Project; and

(c) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with some combination of LID treatment measures onsite, offsite, and/or paying in-lieu fees towards at an offsite or Regional Project.

For each Special Project, a Permittee shall document the basis of infeasibility used to establish technical and/or economic infeasibility.

Under Provision C.3.e.vi, each Permittee is required to report on the infeasibility of 100% LID treatment in each scenario described in Provision C.3.e.ii.(2)(a)-(c) above, for each of the Special Projects for which LID Treatment Reduction Credit was applied.

(3) Category A Special Project Criteria

(a) To be considered a Category A Special Project, a Regulated Project must meet all of the following criteria:

(i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.

(ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-

oriented commercial district, or historic preservation site and/or district.

(iii) Create and/or replace one half acre or less of impervious surface area.

(iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, Americans with Disabilities Act (ADA) accessibility, and passenger and freight loading zones.

(v) Have at least 85% coverage for the entire project site by permanent structures. The remaining 15% portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.

(b) Any Category A Special Project may qualify for 100% LID Treatment Reduction Credit, which would allow the Category A Special Project to treat up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(4) Category B Special Project Criteria

(a) To be considered a Category B Special Project, a Regulated Project must meet all of the following criteria:

(i) Be built as part of a Permittee's stated objective to preserve or enhance a pedestrian-oriented type of urban design.

(ii) Be located in a Permittee's designated central business district, downtown core area or downtown core zoning district, neighborhood business district or comparable pedestrian-oriented commercial district, or historic preservation site and/or district.

(iii) Create and/or replace greater than one-half acre but no more than 2 acres of impervious surface area.

(iv) Include no surface parking, except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.

(v) Have at least 85% coverage for the entire project site by permanent structures. The remaining 15% portion of the site is to be used for safety access, parking structure entrances, trash and recycling service, utility access, pedestrian connections, public uses, landscaping, and stormwater treatment.

(b) For any Category B Special Project, the maximum LID Treatment Reduction Credit allowed is determined based on the density achieved by the Project in accordance with the criteria listed below. Density is

expressed in Floor Area Ratios (FARs[6]) for commercial development projects, in Dwelling Units per Acre (DU/Ac) for residential development projects, and in FARs and DU/Ac for mixed-use development projects.

(i) 50% Maximum LID Treatment Reduction Credit

- For any commercial Category B Special Project with an FAR of at least 2:1, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any residential Category B Special Project with a gross density[7] of at least 50 DU/Ac, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any mixed use Category B Special Project with an FAR of at least 2:1 or a gross density of at least 50 DU/Ac, up to 50% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(ii) 75% Maximum LID Treatment Reduction Credit

- For any commercial Category B Special Project with an FAR of at least 3:1, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any residential Category B Special Project with a gross density of at least 75 DU/Ac, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any mixed use Category B Special Project with an FAR of at least 3:1 or a gross density of at least 75 DU/Ac, up to 75% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(iii) 100% Maximum LID Treatment Reduction Credit

[6] **Floor Area Ratio** – The ratio of the total floor area on all floors of all buildings at a project site (except structures, floors, or floor areas dedicated to parking) to the total project site area.

[7] **Gross Density** – The total number of residential units divided by the acreage of the entire site area, including land occupied by public right-of-ways, recreational, civic, commercial and other non-residential uses.

- For any commercial Category B Special Project with an FAR of at least 4:1, up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any residential Category B Special Project with a gross density of at least 100 DU/Ac, up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.
- For any mixed use Category B Special Project with an FAR of at least 4:1 or a gross density of at least 100 DU/Ac, up to 100% of the amount of runoff identified in Provision C.3.d. for the Project's drainage area may be treated with either one or a combination of the two types of non-LID treatment systems listed in Provision C.3.e.ii.(1) above.

(5) Category C Special Project Criteria (Transit-Oriented Development)

(a) Transit-Oriented Development refers to the clustering of homes, jobs, shops and services in close proximity to rail stations, ferry terminals or bus stops offering access to frequent, high-quality transit services. This pattern typically involves compact development and a mixing of different land uses, along with amenities like pedestrian-friendly streets. To be considered a Category C Special Project, a Regulated Project must meet all of the following criteria:

(i) Be characterized as a non-auto-related land use project. That is, Category C specifically excludes any Regulated Project that is a stand-alone surface parking lot; car dealership; auto and truck rental facility with onsite surface storage; fast-food restaurant, bank or pharmacy with drive-through lanes; gas station, car wash, auto repair and service facility; or other auto-related project unrelated to the concept of Transit-Oriented Development.

(ii) If a commercial development project, achieve at least an FAR of 2:1.

(iii) If a residential development project, achieve at least a gross density of 25 DU/Ac.

(iv) If a mixed use development project, achieve at least an FAR of 2:1 or a gross density of 25 DU/Ac.

(b) For any Category C Special Project, the total maximum LID Treatment Reduction Credit allowed is the sum of three different types of credits that the Category C Special Project may qualify for, namely: Location, Density and Minimized Surface Parking Credits.

(c) Location Credits

(i) A Category C Special Project may qualify for the following Location Credits:

a. 50% Location Credit: Located within a ¼ mile radius of an existing or planned transit hub.

b. 25% Location Credit: Located within a ½ mile radius of an existing or planned transit hub.

c. 25% Location Credit: Located within a planned Priority Development Area (PDA), which is an infill development area formally designated by the Association of Bay Area Government's / Metropolitan Transportation Commission's FOCUS regional planning program. FOCUS is a regional incentive-based development and conservation strategy for the San Francisco Bay Area.

(ii) Only one Location Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Location Credits.

(iii) At least 50% or more of a Category C Special Project's site must be located within the ¼ or ½ mile radius of an existing or planned transit hub to qualify for the corresponding Location Credits listed above. One hundred percent of a Category C Special Project's site must be located within a PDA to qualify for the corresponding Location Credit listed above.

(iv) Transit hub is defined as a rail, light rail, or commuter rail station, ferry terminal, or bus transfer station served by three or more bus routes (i.e., a bus stop with no supporting services does not qualify). A planned transit hub is a station on the MTC's Regional Transit Expansion Program list, per MTC's Resolution 3434 (revised April 2006), which is a regional priority funding plan for future transit stations in the San Francisco Bay Area.

(d) Density Credits: To qualify for any Density Credits, a Category C Special Project must first qualify for one of the Location Credits listed in Provision C.3.e.ii.(5)(c) above.

(i) A Category C Special Project that is a commercial or mixed-use development project may qualify for the following Density Credits:

a. 10% Density Credit: Achieve an FAR of at least 2:1.

b. 20% Density Credit: Achieve an FAR of at least 4:1.

c. 30% Density Credit: Achieve an FAR of at least 6:1.

(ii) A Category C Special Project that is a residential or mixed-use development project may qualify for the following Density Credits:

a. 10% Density Credit: Achieve a gross density of at least 30 DU/Ac.

b. 20% Density Credit: Achieve a gross density of at least 60 DU/Ac.

c. 30% Density Credit: Achieve a gross density of at least 100 DU/Ac.

(iii) Commercial Category C Projects do not qualify for Density Credits based on DU/Ac and residential Category C Projects do not qualify for Density Credits based on FAR. Mixed use Category C Projects may use Density Credits based on either DU/Ac or FAR, but not both.

(iv) Only one Density Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Density Credits.

(e) Minimized Surface Parking Credits: To qualify for any Minimized Surface Parking Credits, a Category C Special Project must first qualify for one of the Location Credits listed in Provision C.3.e.ii.(5)(c) above.

(i) A Category C Special Project may qualify for the following Minimized Surface Parking Credits:

a. 10% Minimized Surface Parking Credit: Have 10% or less of the total post-project impervious surface area dedicated to at-grade surface parking. The at-grade surface parking must be treated with LID treatment measures.

b. 20% Minimized Surface Parking Credit: Have no surface parking except for incidental surface parking. Incidental surface parking is allowed only for emergency vehicle access, ADA accessibility, and passenger and freight loading zones.

(ii) Only one Minimized Surface Parking Credit may be used by an individual Category C Special Project, even if the project qualifies for multiple Minimized Surface Parking Credits.

(6) Any Regulated Project that meets all the criteria for multiple Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project) may only use the LID Treatment Reduction Credit allowed under one of the Special Projects Categories (i.e., a Regulated Project that may be characterized as a Category B or C Special Project may use the LID Treatment Reduction Credit allowed under Category B or Category C, but not the sum of both.).

iii. Implementation Level

(1) Provisions C.3.e.i-ii supersede any Alternative Compliance Policies previously approved by the Executive Officer.

(2) The definitions of FAR and gross density applicable to Provisions C.3.e.ii.(4) and (5) are effective July 1, 2016, and shall apply to all Special Projects granted final discretionary approval on or after July 1, 2016.

(3) For all offsite projects and Regional Projects installed in accordance with Provision C.3.e.i-ii, the Permittees shall meet the Operation & Maintenance (O&M) requirements of Provision C.3.h.

iv. Reporting – Annual reporting shall be done in conjunction with reporting requirements under Provision C.3.b.iv.(2).

Any Permittee choosing to require 100% LID treatment onsite for all Regulated Projects and not allow alternative compliance under Provision C.3.e, shall include a statement to that effect in each Annual Report.

v. Reporting on Special Projects

(1) Permittees shall track any identified potential Special Projects, including those projects that have submitted planning applications but that have not received final discretionary approval.

(2) In each Annual Report, Permittees shall report to the Water Board on these tracked potential Special Projects using Table 3.1 found at the end of Provision C.3. All the required column entry information listed in Table 3.1 shall be reported for each potential Special Project. Any Permittee with no Special Projects shall so state.

For each Special Project listed in Table 3.1, Permittees shall include a narrative discussion of the feasibility or infeasibility of 100% LID treatment onsite, offsite, and at a Regional Project. The narrative discussion shall address each of the following:

(a) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures onsite.

(b) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with LID treatment measures offsite or paying in-lieu fees to treat 100% of the Provision C.3.d runoff with LID treatment measures at a Regional Project.

(c) The infeasibility of treating 100% of the amount of runoff identified in Provision C.3.d for the Regulated Project's drainage area with some combination of LID treatment measures onsite, offsite, and/or paying in-lieu fees towards a Regional Project.

Both technical and economic feasibility or infeasibility shall be discussed, as applicable. The discussion shall also contain enough technical and/or economic detail to document the basis of infeasibility used.

(3) Once a Special Project has final discretionary approval, it shall be reported in the Provision C.3.b. Reporting Table in the same reporting year that the project was approved. In addition to the column entries contained in the

Provision C.3.b. Reporting Table, the Permittees shall provide the following supplemental information for each approved Special Project:

(a) Submittal Date: Date that a planning application for the Special Project was submitted.

(b) Description: Type of project, number of floors, number of units (commercial, mixed-use, residential), type of parking, and other relevant information.

(c) Site Acreage: Total site area in acres.

(d) Gross Density in DU/Ac: Number of dwelling units per acre.

(e) Density in FAR: Floor Area Ratio.

(f) Special Project Category: For each applicable Special Project Category, list the specific criteria applied to determine applicability. For each non-applicable Special Project Category, indicate n/a.

(g) LID Treatment Reduction Credit: For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit applied. For Category C Special Projects also list the individual Location, Density, and Minimized Surface Parking Credits applied.

(h) Stormwater Treatment Systems: List all proposed stormwater treatment systems and the corresponding percentage of the total amount of runoff runoff identified in Provision C.3.d. for the Project's drainage area that will be treated by each treatment system.

(i) List of Non-LID Stormwater Treatment Systems: List all non-LID stormwater treatment systems approved. For each type of non-LID treatment system, indicate: (1) the percentage of the total amount of runoff identified in Provision C.3.d. for the Special Project's drainage area, and (2) whether the treatment system either meets minimum design criteria published by a government agency or received certification issued by a government agency, and reference the applicable criteria or certification.

C.3.f. Alternative Certification of Stormwater Treatment Systems

i. Task Description – In lieu of reviewing a Regulated Project's adherence to Provision C.3.d, a Permittee may elect to have a third party conduct detailed review and certify the Regulated Project's adherence to Provision C.3.d. The third party reviewer must be a Civil Engineer or a Licensed Architect or Landscape Architect registered in the State of California or staff of another Permittee subject to the requirements of this Permit.

ii. Implementation Level – Any Permittee accepting third-party reviews must make a reasonable effort to ensure that the third party has no conflict of interest with regard to the Regulated Project in question. That is, any consultant or contractor (or his/her employees) hired to design and/or construct a stormwater treatment system for a Regulated Project shall not also be the certifying third party. The Permittee must verify that the third party certifying any Regulated Project has current training on stormwater treatment system design (within three

years of the certification signature date) for water quality and understands the groundwater protection principles applicable to Regulated Project sites.

Training conducted by an organization with stormwater treatment system design expertise (such as a college or university, the American Society of Civil Engineers, American Society of Landscape Architects, American Public Works Association, California Water Environment Association (CWEA), BASMAA, National Association of Flood & Stormwater Management Agencies, CASQA, or the equivalent, may be considered qualifying training.

iii. Reporting – Projects reviewed by third parties shall be noted in reporting tables for Provision C.3.b.

C.3.g. Hydromodification Management

i. Hydromodification Management (HM) Projects are Regulated Projects that create and/or replace one acre or more of impervious surface except where one of the following applies. All HM Projects shall meet the Hydromodification Management Standard of Provision C.3.g.ii.

(1) The post-project impervious surface area is less than, or the same as, the pre-project impervious surface area.

(2) The project is located in a catchment that drains to a hardened (e.g., continuously lined with concrete) engineered channel or channels or enclosed pipes that extend continuously to the Bay, Delta, or flow-controlled reservoir, or drains to channels that are tidally influenced.

(3) The project is located in a catchment or subwatershed that is highly developed (i.e., that is 70% or more impervious).[8]

The Hydromodification Applicability Maps developed by the Permittees in the Alameda, Santa Clara, San Mateo, and Fairfield-Suisun Programs, and the City of Vallejo, under the Previous Permit remain in effect and are provided in Attachment C to this Permit. Permittees that do not have the location-based applicability criteria (Provision C.3.g.i.(2) – (3)) shown on existing maps shall develop, or require to be developed, new maps, overlays to existing maps, or other equivalent information that demonstrates whether a project falls under one of those two criteria. Such maps, overlays, or other equivalent information shall be acceptable to the Executive Officer and shall not be effective until accepted by the Executive Officer.

ii. HM Standard

Stormwater discharges from HM Projects shall not cause an increase in the erosion potential of the receiving stream over the pre-project (existing) condition. Increases in runoff flow and volume shall be managed so that post-

[8] The Permittees' maps accepted for the Previous Permit were prepared using this standard, adjusted to 65% imperviousness to account for the presence of vegetation on the photographic references used to determine imperviousness. Thus, the maps for the Previous Permit are accepted as meeting the 70% requirement.

project runoff shall not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. The demonstration that post-project stormwater runoff does not exceed estimated pre-project runoff rates and durations shall include the following:

(1) **Range of Flows to Control:** For Alameda, Contra Costa, San Mateo, and Santa Clara Permittees, and the City of Vallejo, HM controls shall be designed such that post-project stormwater discharge rates and durations match pre-project discharge rates and durations from 10 percent of the pre-project 2-year peak flow[9] up to the pre-project 10-year peak flow. For Fairfield-Suisun Permittees, HM controls shall be designed such that post-project stormwater discharge rates and durations shall match from 20 percent of the 2-year peak flow up to the pre-project 10-year peak flow.

(2) **Goodness of Fit Criteria:** The post-project flow duration curve shall not deviate above the pre-project flow duration curve by more than 10 percent over more than 10 percent of the length of the curve corresponding to the range of flows to control.

(3) **Standard HM Modeling:** Permittees shall use, or shall cause to be used, a continuous simulation hydrologic computer model to simulate pre-project and post-project runoff, or sizing factors or charts developed using such a model, to design onsite or regional HM controls. The Permittees shall compare, or shall cause to be compared, the pre-project and post-project model output for a long-term rainfall record and shall show that applicable performance criteria in C.3.g.ii.(1)-(3) above are met. HM controls designed using the Bay Area Hydrology Model (BAHM) and site-specific input data shall be considered to meet the HM Standard. Such use must be consistent with directions and options set forth in the most current BAHM User Manual. Modifications to the BAHM shall be acceptable to the Executive Officer, shall be consistent with the requirements of this Provision, and shall be reported as required below:

- **Precipitation Data:** Precipitation data used in the modeling of HM controls shall, at a minimum, be 30 years of hourly rainfall data representative of the area being modeled. Where a longer rainfall record is available, the longer record shall be used.
- **Calculating Post-Project Runoff:** Retention and detention basins shall be considered impervious surfaces for purposes of calculating

[9] Where referred to in this Order, the 2-year peak flow is determined using a flood frequency analysis based on USGS Bulletin 17 B to obtain the peak flow statistically expected to occur at a 2-year recurrence interval. In this analysis, the appropriate record of hourly rainfall data (e.g., 35-50 years of data) is run through a continuous simulation hydrologic model, the annual peak flows are identified, rank ordered, and the 2-year peak flow is estimated. Such models include U.S. EPA's Hydrologic Simulation Program—Fortran (HSPF), the U.S. Army Corps of Engineers' Hydrologic Engineering Center-Hydrologic Modeling System (HEC-HMS), and U.S. EPA's Storm Water Management Model (SWMM).

post-project runoff. Pre- and post-project runoff shall be calculated and compared for the entire site, without separating or excluding areas that may be considered self-retaining.

iii. HM Standard – Methodology for Direct Simulation of Erosion Potential

The Permittees may, collectively, propose an additional method, using direct simulation of erosion potential, by which to meet the HM Standard in Provision C.3.g.ii. Such a method shall be submitted to the Water Board for review and shall not be effective until approved by the Executive Officer. At a minimum, a proposal to use this additional method shall demonstrate that stormwater discharges from HM Projects using the method will not cause an increase in the erosion potential of the receiving stream over the pre-project (existing) condition, and that increases in runoff flow and volume will be managed so that post-project runoff does not exceed estimated pre-project rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force. Such demonstration shall include, but not be limited to:

(1) An appropriately detailed discussion of the theoretical approach behind the method and the results for the areas to which it is proposed to be applied;

(2) Appropriate continuous simulation hydrologic modeling using Region-specific field data, including creek data (cross sections, longitudinal data, etc.), precipitation data (a record of at least 30 years of hourly data that is appropriately representative of the areas where the method is to be applied), safety factor(s), and HM control designs; and

(3) A description of how the method will be applied, including any models produced and how they will be used by the Permittees and/or project proponents. Such description shall include a listing of HM controls that may be used to comply with the HM requirements of this Permit, a description, with appropriate technical support, of how they will be sized to comply and how the Permittees will ensure appropriate implementation of the method, and all other necessary information, as appropriate.

iv. Types of HM Controls

Projects shall meet the HM Standard using any of the following HM controls or a combination thereof:

(1) **Onsite HM controls** are flow duration control structures, LID features and facilities, and hydrologic source controls that collectively result in the HM Standard being met at the point(s) where stormwater runoff discharges from the project site.

(2) **Regional HM controls** are flow duration control structures that collect stormwater runoff discharge from multiple projects (each of which shall incorporate hydrologic source control measures as well) and are designed

such that the HM Standard is met for all the projects at the point where the regional HM control discharges.

(3) **In-stream measures** shall be an option only where the stream, which receives runoff from the project, is already impacted by erosive flows and shows evidence of excessive sediment, erosion, deposition, or is a hardened channel.

In-stream measures involve modifying the receiving stream channel slope and geometry so that the stream can convey the new flow regime without increasing the potential for erosion and aggradation. In-stream measures are intended to improve long-term channel stability and prevent erosion by reducing the erosive forces imposed on the channel boundary.

In-stream measures, or a combination of in-stream and onsite controls, shall be designed to achieve the HM Standard from the point where the project(s) discharge(s) to the stream to the mouth of the stream or to achieve an equivalent degree of flow control mitigation (based on amount of impervious surface mitigated) as part of an in-stream project located in the same watershed. Designing in-stream controls requires a hydrologic and geomorphic evaluation (including a longitudinal profile) of the stream system downstream and upstream of the project. As with all in-stream activities, other regulatory permits must be obtained by the project proponent.[10]

v. Implementation Level

All HM Projects shall meet the HM Standard in Provision C.3.g.ii immediately. For Contra Costa Permittees, Projects receiving final planning entitlements on or before January 3, 2018, may be allowed to use the Contra Costa design standards from the Previous Permit. After January 3, 2018, for Contra Costa Permittees, Projects shall comply with the Contra Costa design standards, including any modifications made.

vi. Reporting

(1) New HM Applicability Maps or equivalent information prepared pursuant to Provision C.3.g.i, for those Permittees who do not have an approved Map, shall be submitted, acceptable to the Executive Officer, not later than the second Annual Report following the Permit's effective date.

(2) Contra Costa Permittees shall, with the 2017 Annual Report , submit a technical report, acceptable to the Executive Officer, consisting of an HM Management Plan describing how Contra Costa will implement the Permit's HM requirements (e.g., how it will update or modify its practices to meet Permit requirements). At a minimum, the technical report shall

[10] In-stream control projects require a Stream Alteration Agreement from CDFW, a CWA section 404 permit from the U.S. Army Corps of Engineers, and a section 401 certification from the Water Board. Early discussions with these agencies on the acceptability of an in-stream modification are necessary to avoid project delays or redesign.

provide additional analysis and discussion as to how existing data appropriately evaluates how existing practices available for use meet the Permit's HM requirements, including limit conditions. The report shall, as necessary, propose modifications to Contra Costa's current HM practices, or propose alternate practices that have been accepted by the Water Board, to meet the Permit's HM requirements. The report may also: provide additional data on monitored installations; provide additional analysis and discussion as to how existing and additional data appropriately evaluates existing practices, including limit conditions and the range of conditions present across Contra Costa County; and provide other information or discussion, as appropriate.

(3) Reporting of HM projects shall be as described in Provision C.3.b.

(4) Permittees shall report collectively, with each Annual Report, a listing, summary, and date of modifications made to the BAHM, including the technical rationale. This shall be prepared at the countywide program level and submitted on behalf of participating Permittees.

(5) In addition, for each HM Project approved during the reporting period, Permittees shall collect and make available the following information. Information shall be reported electronically, and, where appropriate, in tabular form.

- Device(s) or method(s) used to meet the HM Standard, such as detention basin(s), biodetention unit(s), regional detention basin, or in-stream control(s);
- Method used by the project proponent to design and size the device or method used to meet the HM Standard;
- Site plans identifying impervious areas, surface flow directions for the entire site, and location(s) of HM measures;
- For projects using standard sizing charts, a summary of sizing calculations used;
- For projects using the BAHM, a listing of model inputs; and
- For projects using custom modeling, a summary of the modeling calculations with a corresponding graph showing curve matching (existing, post-project, and post-project-with HM controls curves).

C.3.h. Operation and Maintenance of Stormwater Treatment Systems

i. Task Description – Each Permittee shall implement an Operation and Maintenance (O&M) Verification Program.

ii. Implementation Level – At a minimum, the O&M Verification Program shall include the following elements:

(1) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that, at a minimum, require at least one of the following from all project proponents and their successors in control of the Project or successors in fee title:

(a) The project proponent's signed statement accepting responsibility for the O&M of the installed pervious pavement system(s) (if any), onsite, joint, and/or offsite stormwater treatment system(s), and HM control(s) (if any) until such responsibility is legally transferred to another entity;

(b) Written conditions in the sales or lease agreements or deed for the project that requires the buyer or lessee to assume responsibility for the O&M of the pervious pavement system(s) (if any), onsite, joint, and/or offsite installed stormwater treatment system(s), and HM control(s) (if any) until such responsibility is legally transferred to another entity;

(c) Written text in project deeds, or conditions, covenants and restrictions (CCRs) for multi-unit residential projects that require the homeowners association or, if there is no association, each individual owner to assume responsibility for the O&M of the installed pervious pavement system(s) (if any), onsite, joint, and/or offsite stormwater treatment system(s), and HM control(s) (if any) until such responsibility is legally transferred to another entity; or

(d) Any other legally enforceable agreement or mechanism, such as recordation in the property deed, that assigns the O&M responsibility for the installed pervious pavement system(s) (if any), onsite, joint, and/or offsite treatment system(s) and HM control(s) (if any) to the project owner(s) or the Permittee.

(2) Coordination with the appropriate mosquito and vector control agency with jurisdiction to establish a protocol for notification of installed stormwater treatment systems and HM controls.

(3) Conditions of approval or other legally enforceable agreements or mechanisms for all Regulated Projects that require the granting of site access to all representatives of the Permittee, local mosquito and vector control agency staff, and Water Board staff, for the sole purpose of performing O&M inspections of the installed pervious pavement system(s) (if any), stormwater treatment system(s) and HM control(s) (if any).

(4) A database or equivalent tabular format of the following:

(a) All pervious pavement system(s) that total 3000 square feet or more installed at Regulated Projects, offsite, or at a Regional Project. The total square footage should not include pervious pavement systems installed as private-use patios for single family homes, townhomes, or condominiums.

(b) All stormwater treatment systems installed onsite at Regulated Projects, offsite, or at a joint or Regional Project.

(c) All HM controls installed onsite at Regulated Projects, offsite, or at a joint or Regional Project.

(5) The database or equivalent tabular format required in Provision C.3.h.ii.(4) shall include the following information for each Regulated Project, offsite project, and Regional Project:

(a) Name and address of the project;

(b) Names of the owner(s) and responsible operator(s) of the installed pervious pavement system(s) (if any), stormwater treatment system(s), and/or HM control(s);

(c) Specific description of the location (or a map showing the location) of the installed pervious pavement system(s) (if any), stormwater treatment system(s), and HM control(s) (if any);

(d) Date(s) that the pervious pavement system(s) (if any), stormwater treatment system(s), and HM controls (if any) was/were installed;

(e) Description of the type and size of the pervious pavement systems (if any), stormwater treatment system(s), and HM control(s) (if any) installed;

(f) Detailed information on O&M inspections. For each inspection, include the following:

(i) Date of inspection.

(ii) Type of inspection (e.g., installation, annual, followup, spot).

(iii) Type(s) of pervious pavement systems inspected (e.g., pervious concrete, pervious asphalt, pervious pavers).

(iv) Type(s) of stormwater treatment systems inspected (e.g., swale, bioretention unit, tree well) and an indication of whether the treatment system is an onsite, joint, or offsite system.

(v) Type of HM controls inspected.

(vi) Inspection findings or results (e.g., proper installation, proper operation and maintenance, system not operating properly because of plugging, bypass of stormwater because of improper installation or maintenance, maintenance required immediately).

(vii) Enforcement action(s) taken, if any (e.g., verbal warning, notice of violation, compliance schedule, administrative citation, administrative order).

(6) A prioritized O&M Inspection Plan for inspecting all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems and HM controls installed at Regulated Projects, offsite locations, and/or at joint or Regional Projects. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient.

At a minimum, the O&M Inspection Plan must specify the following for each fiscal year:

(a) Inspection by the Permittee of all newly installed pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls (at Regulated Projects, offsite locations, and/or at joint or Regional Projects) at the completion of installation to ensure approved plans have been followed. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient;

(b) Inspection by the Permittee of an average of 20 percent, but no less than 15 percent, of the total number (at the end of the preceding fiscal year) of Regulated Projects, offsite projects, or Regional Projects. Each inspection shall include inspection of all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls installed at the Regulated Project, offsite project, or Regional Project. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient;

(c) Inspection by the Permittee of all Regulated Projects, offsite projects, or Regional Projects at least once every five years. Each inspection shall include inspection of all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls installed at the Regulated Project, offsite project, or Regional Project. For residential subdivisions with pervious pavement systems that include individual driveways, inspection of a representative number of driveways is sufficient; and

(d) For vault-based stormwater treatment systems, Permittees may accept 3rd party inspection reports in lieu of conducting Permittee O&M inspections only if the 3rd party inspections are conducted at least annually. Information from each 3rd party inspection shall be included in the database or tabular format required in Provision C.3.h.ii.(5) and each inspection shall be clearly identified as a 3rd party inspection.

Each 3rd party inspection report must clearly document the following:

(i) Name of 3rd party inspection company.

(ii) Date of inspection.

(iii) Condition of the treatment unit(s) at the time of inspection.

(iv) Description of maintenance activities performed during the inspection.

(v) Date- and time-stamped photographs of the inside of the vault unit(s) before and after maintenance activities.

(7) An Enforcement Response Plan (ERP) for all O&M inspections that serves as a reference document for inspection staff so that consistent enforcement actions can be taken to bring development projects into compliance. At a minimum, the ERP must contain the following:

(a) Enforcement Procedures – A description of the Permittee's procedures from the discovery of problems through the confirmation of implementation of corrective actions. This shall include guidance for recognizing common problems with the different types of pervious pavement systems, stormwater treatment systems, and/or HM controls, remedies for the problems, and appropriate enforcement actions, followup inspections, and appropriate time periods for implementation of corrective actions, and the roles and responsibilities of staff responsible for implementing the ERP.

(b) Enforcement Tools and Field Scenarios – A discussion of the various, escalating enforcement tools appropriate for different field scenarios of problems identified with the pervious pavement systems, stormwater treatment systems, and/or HM controls as well as for different types of inadequate response to enforcement actions taken.

(c) Timely Correction of Identified Problems – A description of the Permittee's procedures for assigning due dates for corrective actions. Permittees shall require timely correction of all identified problems with the pervious pavement systems, stormwater treatment systems, and/or HM controls.

Corrective actions shall be implemented no longer than 30 days after a problem is identified by an inspector. Corrective actions can be temporary and more time may be allowed for permanent corrective actions. If more than 30 days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

iii. Due Date for Implementation: Immediate, except as follows:

(1) July 1, 2016, for Provision C.3.h.ii.(6) and all requirements pertaining to pervious pavement systems in Provisions C.3.h.ii.(1)-(5), C.3.h.iv., and C.3.h.v.

(2) July 1, 2017, for Provision C.3.h.ii.(7).

iv. Maintenance Approvals: The Permittees shall ensure that all pervious pavement systems that total 3,000 square feet or more (excluding private-use patios for single family homes, townhomes, or condominiums), stormwater treatment systems, and HM controls installed onsite, offsite, or at a joint or Regional Project by development proponents are properly operated and maintained for the life of the projects. In cases where the responsible party for a pervious pavement system, stormwater treatment system or HM control has

worked diligently and in good faith with the appropriate State and federal agencies to obtain approvals necessary to complete maintenance activities, but these approvals are not granted, the Permittees shall be deemed to be in compliance with this Provision. Permittees shall ensure that constructed wetlands installed by Regulated Projects and used for urban runoff treatment shall abide by the Water Board's Resolution No. 94-102: Policy on the Use of Constructed Wetlands for Urban Runoff Pollution Control and the O&M requirements contained therein.

v. Reporting

(1) The database or equivalent tabular format required in Provisions C.3.b.ii.(4) and (5) shall be maintained by the Permittees. Upon request from the Executive Officer, information from this database or equivalent tabular format shall be submitted to Water Board staff for review. The requested information may include specific details on each inspection conducted within particular timeframes, such as several fiscal years.

(2) On an annual basis, before the wet season, provide a list of newly installed (installed within the reporting period) stormwater treatment systems and HM controls to the local mosquito and vector control agency and the Water Board. This list shall include the facility locations and a description of the stormwater treatment measures and HM controls installed.

(3) Each Permittee shall report the following information in the Annual Report each year:

(a) Total number of Regulated Projects in the Permittee's database or tabular format as of the end of the reporting period (fiscal year).

(b) Total number of Regulated Projects, offsite projects, and Regional Projects inspected during the reporting period (fiscal year).

(c) Percentage of the total number of Regulated Projects that were inspected during the reporting period (fiscal year).

(d) A discussion of the inspection findings for the year and any common problems encountered with various types of pervious pavement systems, treatment systems and/or HM controls. This discussion should include a general comparison to the inspection findings from the previous year.

(e) A discussion of the effectiveness of the Permittee's O&M Program and any proposed changes to improve the O&M Program (e.g., changes in prioritization plan or frequency of O&M inspections, other changes to improve effectiveness of program).

(f) For the 2016 Annual Report, Permittees may report on the total number and percentage of treatment and HM controls inspected, and exclude discussion of inspection findings for pervious pavement systems.

(4) Each Permittee shall certify in the 2017 Annual Report that an Enforcement Response Plan has been completed by July 1, 2017.

C.3.i. Required Site Design Measures for Small Projects and Detached Single-Family Home Projects

i. Task Description – The Permittees shall require all development projects, which create and/or replace $\geq$ 2,500 ft^2 to < 10,000 ft^2 of impervious surface, and detached single-family home projects,[11] which create and/or replace 2,500 square feet or more of impervious surface, to install one or more of the following site design measures:

- Direct roof runoff into cisterns or rain barrels for reuse.
- Direct roof runoff onto vegetated areas.
- Direct runoff from sidewalks, walkways, and/or patios onto vegetated areas.
- Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
- Construct sidewalks, walkways, and/or patios with permeable surfaces.[2]
- Construct bike lanes, driveways, and/or uncovered parking lots with permeable surfaces.[2]

This provision applies to all development projects that require approvals and/or permits issued under the Permittees' planning, building, or other comparable authority.

ii. Reporting – On an annual basis, discuss the implementation of the requirements of Provision C.3.i, including ordinance revisions, permit conditions, development of standard specifications and/or guidance materials, and staff training.

C.3.j. Green Infrastructure Planning and Implementation

The Permittees shall complete and implement a Green Infrastructure Plan for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other storm drain infrastructure elements.

The Plan is intended to serve as an implementation guide and reporting tool during this and subsequent Permit terms to provide reasonable assurance that urban runoff TMDL wasteload allocations (e.g., for the San Francisco Bay mercury and PCBs TMDLs) will be met, and to set goals for reducing, over the long term, the adverse water quality impacts of urbanization and urban runoff on receiving waters. For this Permit term, the Plan is being required, in part, as an alternative to expanding the definition of Regulated Projects prescribed in Provision C.3.b to include all new and redevelopment projects that create or replace 5,000 square feet or more of impervious surface areas and road projects that just replace existing imperious surface area. It also provides a mechanism to establish and implement alternative or

[11] **Detached single-family home project** – The building of one single new house or the addition and/or replacement of impervious surface to one single existing house, which is not part of a larger plan of development.

in-lieu compliance options for Regulated Projects and to account for and justify Special Projects in accordance with Provision C.3.e.

Over the long term, the Plan is intended to describe how the Permittees will shift their impervious surfaces and storm drain infrastructure from gray, or traditional storm drain infrastructure where runoff flows directly into the storm drain and then the receiving water, to green—that is, to a more-resilient, sustainable system that slows runoff by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and evapotranspiration, and uses bioretention and other green infrastructure practices to clean stormwater runoff.

The Plan shall also identify means and methods to prioritize particular areas and projects within each Permittee's jurisdiction, at appropriate geographic and time scales, for implementation of green infrastructure projects. Further, it shall include means and methods to track the area within each Permittee's jurisdiction that is treated by green infrastructure controls and the amount of directly connected impervious area. As appropriate, it shall incorporate plans required elsewhere within this Permit, and specifically plans required for the monitoring of and to ensure appropriate reductions in trash, PCBs, mercury, and other pollutants.

The Permittees may comply with any requirement of this Provision through a collaborative effort.

i. Green Infrastructure Program Plan Development

Each Permittee shall:

(1) Prepare a framework or workplan that describes specific tasks and timeframes for development of its Green Infrastructure Plan. This framework or workplan shall be approved by the Permittee's governing body, mayor, city manager, or county manager by June 30, 2017. At a minimum, the framework or workplan shall include a statement of purpose, tasks, and timeframes to complete the elements listed in Provision C.3.j.i.(2) below.

(2) Prepare a Green Infrastructure Plan, subject to Executive Officer approval, that contains the following elements:

(a) A mechanism (e.g., SFEI's GreenPlanIT tool or another tool) to prioritize and map areas for potential and planned projects, both public and private, on a drainage-area-specific basis, for implementation over the following time schedules, which are consistent with the timeframes for assessing load reductions specified in Provisions C.11. and C.12:

(i) By 2020;

(ii) By 2030; and

(iii) By 2040.

The mechanism shall include criteria for prioritization (e.g., specific logistical constraints, water quality drivers (e.g., TMDLs), opportunities to treat runoff from private parcels in retrofitted street

right-of-way) and outputs (e.g., maps, project lists) that can be incorporated into the Permittee's long-term planning and capital improvement processes.

(b) Outputs from the mechanism described above, including, but not limited to, the prioritization criteria, maps, lists, and all other information, as appropriate. Individual project-specific reviews completed using these mechanisms are not required to be submitted with the Plan, but shall be made available upon request.

(c) Targets for the amount of impervious surface, from public and private projects, within the Permittee's jurisdiction to be retrofitted over the following time schedules, which are consistent with the timeframes for assessing load reductions specified in Provisions C.11. and C.12:

(i) By 2020;

(ii) By 2030; and

(iii) By 2040.

(d) A process for tracking and mapping completed projects, public and private, and making the information publically available (e.g., SFEI's GreenPlanIT tool).

(e) General guidelines for overall streetscape and project design and construction so that projects have a unified, complete design that implements the range of functions associated with the projects. For example, for streets, these functions include, but are not limited to, street use for stormwater management, including treatment, safe pedestrian travel, use as public space, for bicycle, transit, vehicle movement, and as locations for urban forestry. The guidelines should call for the Permittee to coordinate, for example, street improvement projects so that related improvements are constructed simultaneously to minimize conflicts that may impact green infrastructure.

(f) Standard specifications and, as appropriate, typical design details and related information necessary for the Permittee to incorporate green infrastructure into projects in its jurisdiction. The specifications shall be sufficient to address the different street and project types within a Permittee's jurisdiction, as defined by land use and transportation characteristics.

(g) Requirement(s) that projects be designed to meet the treatment and hydromodification sizing requirements in Provisions C.3.c. and C.3.d. For street projects not subject to Provision C.3.b.ii. (i.e., non-Regulated Projects), Permittees may collectively propose a single approach with their Green Infrastructure Plans for how to proceed should project constraints preclude fully meeting the C.3.d sizing requirements. The single approach can include different options to address specific issues or scenarios. That is, the approach shall identify the specific constraints that would preclude meeting the sizing requirements and the design approach(es) to take in that

situation. The approach should also consider whether a broad effort to incorporate hydromodification controls into green infrastructure, even where not otherwise required, could significantly improve creek health and whether such implementation may be appropriate, plus all other information, as appropriate (e.g., how to account for load reduction for the PCBs or mercury TMDLs).

(h) A summary of the planning documents the Permittee has updated or otherwise modified to appropriately incorporate green infrastructure requirements, such as: General Plans, Specific Plans, Complete Streets Plans, Active Transportation Plans, Storm Drain Master Plans, Pavement Work Plans, Urban Forestry Plans, Flood Control or Flood Management Plans, and other plans that may affect the future alignment, configuration, or design of impervious surfaces within the Permittee's jurisdiction, including, but not limited to, streets, alleys, parking lots, sidewalks, plazas, roofs, and drainage infrastructure. Permittees are expected to complete these modifications as a part of completing the Green Infrastructure Plan, and by not later than the end of the permit term.

(i) To the extent not addressed above, a workplan identifying how the Permittee will ensure that green infrastructure and low impact development measures are appropriately included in future plans (e.g., new or amended versions of the kinds of plans listed above).

(j) A workplan to complete prioritized projects identified as part of a Provision C.3.e Alternative Compliance program or part of Provision C.3.j Early Implementation.

(k) An evaluation of prioritized project funding options, including, but not limited to: Alternative Compliance funds; grant monies, including transportation project grants from federal, State, and local agencies; existing Permittee resources; new tax or other levies; and other sources of funds.

(3) Adopt policies, ordinances, and/or other appropriate legal mechanisms to ensure implementation of the Green Infrastructure Plan in accordance with the requirements of this provision.

(4) Conduct outreach and education in accordance with the following:

(a) Conduct public outreach on the requirements of this provision, including outreach coordinated with adoption or revision of standard specifications and planning documents, and with the initiation and planning of infrastructure projects. Such outreach shall include general outreach and targeted outreach to and training for professionals involved in infrastructure planning and design.

(b) Train appropriate staff, including planning, engineering, public works maintenance, finance, fire/life safety, and management staff on the requirements of this provision and methods of implementation.

(c) Educate appropriate Permittee elected officials (e.g., mayors, city council members, county supervisors, district board members) on the requirements of this provision and methods of implementation.

(5) Report on Green Infrastructure Planning as follows:

(a) Each Permittee shall submit documentation in the 2017 Annual Report that its framework or workplan for development of its Green Infrastructure Plan was approved by its governing body, mayor, city manager, or county manager by June 30. 2017.

(b) Each Permittee shall submit its completed Green Infrastructure Plan with the 2019 Annual Report.

(c) Each Permittee shall submit documentation of its legal mechanisms to ensure implementation of its Green Infrastructure Plan with the 2019 Annual Report.

(d) Each Permittee shall submit a summary of its outreach and education efforts in each Annual Report.

ii. Early Implementation of Green Infrastructure Projects (No Missed Opportunities)

Each Permittee shall:

(1) Prepare and maintain a list of green infrastructure projects, public and private, that are already planned for implementation during the permit term and infrastructure projects planned for implementation during the permit term that have potential for green infrastructure measures.

(2) Submit the list with each Annual Report and a summary of planning or implementation status for each public green infrastructure project and each private green infrastructure project that is not also a Regulated Project as defined in Provision C.3.b.ii. Include a summary of how each public infrastructure project with green infrastructure potential will include green infrastructure measures to the maximum extent practicable during the permit term. For any public infrastructure project where implementation of green infrastructure measures is not practicable, submit a brief description of the project and the reasons green infrastructure measures were impracticable to implement.

iii. Participate in Processes to Promote Green Infrastructure

(1) The Permittees shall, individually or collectively, track processes, assemble and submit information, and provide informational materials and presentations as needed to assist relevant regional, State, and federal agencies to plan, design, and fund incorporation of green infrastructure measures into local infrastructure projects, including transportation projects. Issues to be addressed include coordinating the timing of funding from different sources, changes to standard designs and design criteria, ranking and prioritizing projects for funding, and implementation of cooperative in-lieu programs.

(2) In each Annual Report, Permittees shall report on the goals and outcomes during the reporting year of work undertaken to participate in processes to promote green infrastructure.

(3) In the 2019 Annual Report, Permittees shall submit a plan and schedule for new and ongoing efforts to participate in processes to promote green infrastructure.

iv. Tracking and Reporting Progress

(1) The Permittees shall, individually or collectively, develop and implement regionally-consistent methods to track and report implementation of green infrastructure measures including treated area and connected and disconnected impervious area on both public and private parcels within their jurisdictions. The methods shall also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met.

(2) In each Annual Report, Permittees shall report progress on development and implementation of the tracking methods.

(3) In the 2019 Annual Report, Permittees shall submit the tracking methods and report implementation of green infrastructure measures including treated area, and connected and disconnected impervious area on both public and private parcels within their jurisdictions.

Table 3.1 Standard Tracking and Reporting Form for Potential Special Projects

Project No.	Permittee	Address	Application Submittal Date	Description	Site Total Acreage	Gross Density DU/Ac	FAR	Special Project Category	LID Treatment Reduction Credit	Stormwater Treatment Systems

Project No: Number of the Special Project as it appears in Table 3.1

Permittee: Name of the Permittee in whose jurisdiction the Special Project will be built.

Address: Address of the Special Project; if no street address, state the cross streets.

Submittal Date: Date that a planning application for the Special Project was submitted; if a planning application has not been submitted, include a projected application submittal date.

Description: Type of project (commercial, mixed-use, residential), number of floors, number of units, type of parking, and other relevant information.

Site Acreage: Total site area in acres.

Gross Density in DU/Ac: Number of dwelling units per acre.

FAR: Floor Area Ratio

Special Project Category: For each Special Project Category, indicate applicability. If a Category is applicable, list the specific criteria applied to determine applicability.

LID Treatment Reduction Credit: For each applicable Special Project Category, state the maximum total LID Treatment Reduction Credit available. For Category C Special Projects also list the individual Location, Density, and Minimized Surface Parking Credits available.

Stormwater Treatment Systems: List all proposed stormwater treatment systems and the corresponding percentage of the total amount of runoff runoff identified in Provision C.3.d. for the Project's drainage area that will be treated by each treatment system.

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C.4. Industrial and Commercial Site Controls

Each Permittee shall implement an industrial and commercial site control program at all sites that could reasonably be considered to cause or contribute to pollution of stormwater runoff. Permittees shall conduct inspections, effective followup, and enforcement to abate potential and actual non-stormwater discharges, consistent with each Permittee's respective Enforcement Response Plan. These combined efforts will prevent the discharge of pollutants and impacts to beneficial uses of receiving waters. Inspections shall confirm implementation of appropriate and effective BMPs and other pollutant controls by industrial and commercial site operators.

C.4.a. Legal Authority for Effective Site Management

i. Task Description – Permittees shall have sufficient legal authority to inspect, require effective stormwater pollutant control, and implement progressively stricter enforcement to achieve expedient compliance and pollutant abatement at commercial and industrial sites within their jurisdiction.

ii. Implementation Level – Permittees shall have the legal authority to oversee, inspect, and require expedient compliance and pollution abatement at all industrial and commercial sites which may be reasonably considered to cause or contribute to pollution of stormwater runoff. Permittees shall have the legal authority to require implementation of appropriate BMPs at industrial and commercial facilities to address pollutant sources associated with outdoor process and manufacturing areas; outdoor material storage areas; outdoor waste storage and disposal areas; outdoor vehicle and equipment storage and maintenance areas; outdoor parking areas and access roads; outdoor wash areas; outdoor drainage from indoor areas, rooftop equipment; and contaminated and erodible surface areas; and other sources determined by the Permittees or the Water Board Executive Officer to have a reasonable potential to contribute to pollution of stormwater runoff.

C.4.b. Industrial and Commercial Business Inspection Plan (Inspection Plan)

i. Task Description – Permittees shall continue to update and implement an Inspection Plan that will serve as a prioritized inspection workplan. This Inspection Plan will allow inspection staff to categorize the commercial and industrial sites within the Permittee's jurisdiction by pollutant threat and inspection frequency, change inspection frequency based on site performance, and add and remove sites as businesses open and close.

ii. Implementation Level

(1) Facilities For Prioritization Into Inspection Plan

Commercial and industrial facilities with the functional aspects and types described below, and other facilities identified by the Permittees as reasonably likely to contribute to pollution of stormwater runoff, shall be prioritized for inspection on the basis of the potential for water quality impact using criteria such as pollutant sources on site, pollutants of

concern, proximity to a waterbody, potential and actual discharge history of the facility, and other relevant factors. The following are some of the functional aspects of businesses and types of businesses that shall be included in the Inspection Plan:

(a) Sites that include the following types of functions that may produce pollutants when exposed to stormwater include, but are not limited to:

- Outdoor process and manufacturing areas
- Outdoor material storage areas
- Outdoor waste storage and disposal areas
- Outdoor vehicle and equipment storage and maintenance areas
- Outdoor wash areas
- Outdoor drainage from indoor areas
- Rooftop equipment
- Other sources determined by the Permittee or Water Board as reasonably likely to contribute to pollution of stormwater runoff.

(b) The following types of industrial and commercial businesses that have a reasonable likelihood to be sources of pollutants to stormwater and non-stormwater discharges:

- Industrial facilities, as defined at 40 CFR 122.26(b)(14), including those subject to the Statewide NPDES General Permit for Stormwater Discharges Associated with Industrial Activity (hereinafter the Industrial General Permit);
- Vehicle Salvage yards;
- Metal and other recycled materials collection facilities, and waste transfer facilities;
- Vehicle mechanical repair, maintenance, fueling, or cleaning facilities;
- Building trades central facilities or yards, corporation yards;
- Nurseries and greenhouses;
- Building material retailers and storage;
- Plastic manufacturers; and
- Other facilities designated by the Permittee or Water Board to be reasonably likely to contribute to pollution of stormwater runoff.

(2) Inspection Plan – The Inspection Plan shall be updated annually and shall contain the following information:

(a) A description of the process for prioritizing inspections and frequency of inspections. The prioritization criteria shall assign a more frequent inspection schedule to the highest priority facilities per Provision C.4.b.ii.(1). If any geographical areas are to be targeted for

inspections due to high potential for stormwater pollution, these areas should be indicated in the Inspection Plan.

(b) Assign appropriate inspection frequency for each industrial and commercial facility based on the priority established in Provision C.4.b.ii.(2)(a) above, potential for contributing pollution to stormwater runoff, and commensurate with the threat to water quality.

(c) A mechanism to include new businesses that warrant inspections.

(d) Total number and a list of all industrial and commercial facilities requiring inspections, within each Permittee's jurisdiction, based on the prioritization criteria established in Provision C.4.(b)ii.(2)(a). This list shall be updated annually.

(e) List of facilities scheduled for inspection each fiscal year of the MRP permit term. Each fiscal year's inspection list shall be added to the Inspection Plan at the beginning of the fiscal year as part of the annual update. Previous fiscal years' inspection lists shall remain in the Inspection Plan.

(3) **Record Keeping** – For each facility identified in Provision C.4.b.ii.(2)(d), the Permittee shall maintain a database or equivalent tabular system of at least the following information:

(a) Name and address of the business and local business operator;

(b) A brief description of business activity or pollutant source, including SIC code. Examples: outdoor process/manufacturing areas, outdoor material storage areas, outdoor waste storage and disposal areas, outdoor vehicle and equipment storage and maintenance areas, outdoor parking areas and access roads, outdoor wash areas, rooftop equipment, and outdoor drainage from indoor areas;

(c) Inspection priority and inspection frequency; and

(d) If coverage under the Industrial General Permit is required.

iii. Reporting – The Permittees shall include the list of all industrial and commercial facilities requiring inspections identified in Provision C.4.b.ii.(2)(d) in each Annual Report.

C.4.c. Enforcement Response Plan (ERP)

i. Task Description – Each Permittee shall implement and update, as needed, its ERP – a reference document for inspection staff to take consistent actions to achieve timely and effective compliance from all commercial and industrial site operators.

ii. Implementation Level – The ERP shall contain the following:

(1) Enforcement Procedures – A description of the Permittee's procedures, from the discovery of problems through the confirmation of implementation of corrective actions. This shall include guidance for appropriate enforcement actions, followup inspections, referrals to another agency, appropriate time periods for implementation of corrective actions,

and the roles and responsibilities of staff responsible for implementing the ERP.

(2) Enforcement Tools and Field Scenarios – A discussion of the various, escalating enforcement tools for different field scenarios, including, but not limited to potential discharges (e.g., housekeeping issues, evidence of actual non-stormwater discharges, lack of BMPs, inadequate BMPs, and inappropriate BMPs), actual non-stormwater discharges, non-compliance with previous enforcement actions, and sites with a history of potential and/or actual non-stormwater discharges.

(3) Timely Correction of Potential and Actual Non-stormwater Discharges – A description of the Permittee's procedures for assigning due dates for corrective actions. Permittees shall require timely correction of all potential and actual non-stormwater discharges. Permittees shall require active non-stormwater discharges to cease immediately. Corrective actions shall be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual non-stormwater discharges are discovered. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. If more than 10 business day are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

(4) Referral and Coordination with Other Agencies – Each Permittee shall enforce its stormwater ordinances to achieve compliance at sites with observed potential and actual non-stormwater discharges required in Discharge Prohibition A.1. For cases in which Permittee enforcement tools are inadequate to remedy the noncompliance, the Permittee shall refer the case to the Water Board, district attorney, or other relevant agencies for additional enforcement.

C.4.d. Inspections

i. Task Description – Each Permittee shall conduct inspections according to the Inspection Plan in Provision C.4.b.ii.(2) and the ERP in Provision C.4.c.ii. to enforce its ordinance to prevent stormwater pollution.

ii. Implementation Level

(1) Inspections – Inspections shall be conducted to include at least the following activities:

(a) Observations for appropriate BMPs to prevent stormwater runoff pollution or illicit discharge;

(b) Observations for evidence of unauthorized discharges, illicit connections, and potential discharge of pollutants to stormwater;

(c) Observations for noncompliance with Permittee ordinances and other local requirements; and

(d) Verification of coverage under the Industrial General Permit, if applicable.

(2) Record Keeping – Permittees shall maintain adequate records to demonstrate compliance and appropriate followup enforcement responses for facilities inspected. Permittees shall maintain an electronic database or equivalent tabular system that contains the following information regarding industrial and commercial site inspections:

(a) Name of facility/site inspected

(b) Inspection date

(c) Industrial General Permit coverage required (Yes or No)

(d) Compliance status

(e) Specific problems

(f) Type of enforcement (if applicable)

(g) Problem resolution date

(h) Additional comments

The electronic database or equivalent tabular system shall be made readily available to Water Board staff or its representative during inspections and audits.

(3) Data Evaluation – Permittees shall evaluate the frequency of potential and actual non-stormwater discharges by business category. Note trends and, as needed, implement focused inspections or education in subsequent years to address trends.

iii. Reporting

(1) Permittees shall include the following information in the 2015-2016 Annual Report:

(a) Number of inspections conducted, Number of violations issued (excluding verbal warnings), Percentage of sites inspected in violation, and number and percent of violations resolved within 10 working days or otherwise deemed resolved in a longer, but still timely manner;

(b) Frequency and types/categories of violations observed, Frequency and type of enforcement conducted;

(c) Summary of types of violations noted by business category; and

(d) Facilities that are required to have coverage under the Industrial General Permit, but have not filed for coverage.

(2) Beginning with the 2016-2017 Annual Report, Permittees shall include the following information in each Annual Report:

(a) Number of inspections conducted;

(b) Number of each type of enforcement action, as listed in each Permittee's ERP, issued;

(c) Number of enforcement actions or discreet number of potential and actual discharges fully resolved within 10 working days or otherwise deemed resolved in a longer, but still timely manner;

(d) Frequency of potential and actual non-stormwater discharges by business category; and

(e) A list of facilities that are required to have coverage under the Industrial General Permit, but have not filed for coverage.

C.4.e. Staff Training

i. Task Description – Permittees shall provide focused training for industrial and commercial site inspectors and illicit discharge detection and elimination inspectors annually. Trainings may be program-wide, region-wide, or Permittee-specific.

ii. Implementation Level – At a minimum, provide inspection training, within the 5-year term of this Permit, in the following topics:

(1) Urban runoff pollution prevention;

(2) Inspection procedures;

(3) Business Inspection Plan;

(4) Enforcement Response Plan;

(5) Illicit Discharge Detection and Elimination; and

(6) Appropriate BMPs to be used at different industrial and commercial facilities.

iii. Reporting – The Permittees shall include the following information in each Annual Report:

(1) Dates of training;

(2) Training topics covered;

(3) Percentage of industrial and commercial site inspectors attending training; and

(4) Percentage of Illicit Discharge, Detection, and Elimination inspectors attending training.

C.5. Illicit Discharge Detection and Elimination

The purpose of this provision is to implement the illicit discharge prohibition and to ensure illicit discharges are detected and controlled that are not otherwise controlled under provisions C.4. – Industrial and Commercial Site Controls and C.6. – Construction Site Controls. Permittees shall implement an illicit discharge program that includes an active surveillance component and a centralized complaint collection and followup component to detect and eliminate illicit discharges into the MS4. Permittees shall maintain a complaint tracking and followup data system as their primary accountability reporting for this provision.

C.5.a. Legal Authority

i. Task Description – Permittees shall have the legal authority to prohibit and control illicit discharges and implement progressively stricter enforcement to achieve expedient compliance.

ii. Implementation Level

(1) Permittees shall have adequate legal authority to address illicit discharges to the MS4, including, but not limited to, the following:

(a) Sewage;

(b) Discharges of wash water resulting from the cleaning of exterior surfaces and pavement, or the equipment and other facilities of any commercial business, or any other public or private facility, including discharges from mobile cleaning businesses;

(c) Discharges of runoff from material storage areas, including those containing chemicals, fuels, or other potentially polluting or hazardous materials;

(d) Discharges of pool or fountain water containing chlorine, biocides, or other chemicals; discharges of pool or fountain filter backwash water;

(e) Discharges of sediment, pet waste, vegetation clippings, or other landscape or construction-related wastes; and

(f) Discharges of food-related wastes (e.g., grease, fish processing wastes, restaurant kitchen mat and trash bin wash water).

(2) Permittees shall have adequate legal authority to prohibit, discover through inspection and surveillance, and eliminate illicit connections and discharges to the MS4.

(3) Permittees shall have adequate legal authority to control the discharge of spills, dumping, or disposal of materials other than storm water to the MS4.

C.5.b. Enforcement Response Plan (ERP)

i. Task Description – Each Permittee shall implement and update, as needed, its ERP – a reference document for inspection staff to take consistent actions to

achieve timely and effective abatement of illicit discharges and compliance from responsible parties.

ii. Implementation Level – The ERP shall contain the following:

(1) Enforcement Procedures – A description of the Permittee's procedures from the discovery of a problem through the confirmation of implementation of corrective actions. This shall include guidance for appropriate enforcement actions, followup inspections, referrals to another agency, appropriate time periods for implementation of corrective actions, and the roles and responsibilities of staff responsible for implementing the ERP.

(2) Enforcement Tools and Field Scenarios – A discussion of the various, escalating enforcement tools for different field scenarios, including, but not limited to potential discharges (e.g., housekeeping issues, evidence of actual discharges, lack of BMPs, inadequate BMPs, and inappropriate BMPs), actual discharges, non-compliance with previous enforcement actions, and sites with a history of potential and/or actual discharges.

(3) Timely Correction of Potential and Actual Discharges – A description of the Permittee's procedures for assigning due dates for corrective actions. Each Permittee shall require timely correction of all potential and/or actual discharges. Active discharges shall be required to cease immediately. Corrective actions shall be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

C.5.c. Spill, Dumping, and Complaint Response Program

i. Task Description – Each Permittee shall implement a program to respond to spills, dumping, and complaints.

ii. Implementation Level

(1) Each Permittee shall have a central contact point for the public and Permittee's staff to report spills, dumping, and complaints. At a minimum, this central contact point shall include a phone number. Permittee shall also include, as feasible, user friendly web reporting for spills and dumping.

(2) Each Permittee shall publicize the phone number and web reporting address, if used, to internal Permittee's staff and the public. The Permittee's website shall be one of the places the central contact point is publicized. The Permittee's website shall be updated with the central contact point to report spills and dumping by June 30, 2016. This central contact point shall be readily searchable on the Permittee's website.

(3) Each Permittee shall require its municipal staff conducting routine maintenance and inspection activities to report illicit discharges found during their activities to the central contact point so that illicit discharge staff can investigate and track.

(4) Each Permittee shall maintain and update, as needed, a spill, dumping, and complaint response flow chart and/or phone tree for the Permittee's staff responsible for the spill and dumping response program. At a minimum, this flow chart and/or phone tree shall identify staff or positions responsible for receiving the complaints and investigating and abating the complaints.

(5) Each Permittee shall maintain and update, as needed, a spill, dumping, and complaint response flow chart and phone tree or contact list for internal use that shows the various responsible agencies and their contacts, who would be involved in illicit discharge incident response that goes beyond the Permittee's immediate capabilities.

(6) Each Permittee shall conduct reactive inspections in response to spill, dumping, and complaint reports and shall also conduct followup inspections, as needed, to ensure that corrective measures have been effectively implemented to achieve and maintain compliance.

iii. Reporting – Permittees shall provide the following information in the 2016 and 2020 Annual Reports:

(1) The spill and dumping reporting phone number and the web address, if used;

(2) A screen shot of the Permittee's website showing the central contact point; and

(3) A discussion of how the central contact point – spill and dumping reporting phone number and, if used, the web address – is being publicized to Permittees' staff and the public.

C.5.d. Tracking and Case Followup

i. Task Description – All incidents or discharges reported to the spill, dumping, and complaints central contact point, that might discharge into the MS4, shall be logged to track followup and response through problem resolution. The data collected shall be sufficient to demonstrate escalating responses for repeated problems and inter/intra-agency coordination, where appropriate. It is not necessary to track and report data according to this provision if they are tracked and reported according to State Water Resource Control Board Order No. 2006-0003-DWQ.

ii. Implementation Level – Maintain a water quality spills, dumping, and complaints tracking and followup in an electronic database or equivalent tabular system.

The spill and discharge complaint tracking system shall contain the following information:

(1) Complaint information:
  (a) Date and time of complaint,
  (b) Type of pollutant, and
  (c) Problem Status (potential or actual discharge.).

(2) Investigation information:
  (a) Date and time started,
  (b) Type of pollutant,
  (c) Entered storm drain and/or receiving water,
  (d) Date and time abated, and
  (e) Type of enforcement based on the Permittee's ERP.

The electronic database or equivalent tabular system shall be made available to Water Board staff or representatives during audits or inspections.

iii. Reporting – Permittees shall provide the following information in the Annual Report:

(1) Number of discharges reported;

(2) Number of discharges reaching storm drains and/or receiving waters; and

(3) Number discharges resolved in a timely manner.

C.5.e. Control of Mobile Sources

i. Task Description – Permittees shall have oversight and control of pollutants associated with mobile businesses.

ii. Implementation Level – Each Permittee shall implement a program to reduce the discharge of pollutants from mobile businesses.

(1) The program shall include the following:
  (a) Implementation of minimum standards and BMPs for each of the various types of mobile businesses, such as automobile washing, power washing, steam cleaning, and carpet cleaning.
  (b) Implementation of an enforcement strategy that specifically addresses the unique characteristics of mobile businesses.
  (c) Regularly updating mobile business inventories.
  (d) Implementation of an outreach and education strategy to mobile businesses operating within the Permittee's jurisdiction.
  (e) Inspection of mobile businesses, as needed.

(2) Permittees may cooperate county-wide and/or region-wide with the implementation of their programs for mobile businesses, including sharing

of mobile business inventories, BMP requirements, enforcement action information, and education.

iii. Reporting

(1) In the 2017 Annual Report, each Permittee shall provide the following: (a) minimum standards and BMPs for each of the various types of mobile businesses; (b) its enforcement strategy; (c) a list and summary of the specific outreach events and education conducted to the different types of mobile businesses operating within the Permittee's jurisdiction; (d) the number of inspections conducted at mobile businesses and/or job sites in 2016-2017; (e) discuss enforcement actions taken against mobile businesses in 2016-2017; (f) Permittee's inventory of mobile businesses operating within the Permittee's jurisdiction; and (g) a list and summary of the county-wide or regional activities conducted, including sharing of mobile business inventories, BMP requirements, enforcement action information, and education (Permittees' annual reports may refer to the county-wide or regional reports for this information.).

(2) In the 2019 Annual Report, each Permittee shall include at least the following: (a) changes to minimum standards and BMPs for each of the various types of mobile businesses since the 2017 Annual Report; (b) changes to the Permittee's enforcement strategy; (c) minimum standards and BMPs developed for additional types of mobile businesses; (d) a list and summary of specific outreach events and education conducted to each type of mobile businesses operating within the Permittee's jurisdiction during the Permit term; (e) a discussion of the inspections conducted at mobile businesses and/or job sites; (f) Permittee's inventory of mobile businesses operating within the Permittee's jurisdiction; and (g) a discussion of the enforcement actions taken against mobile businesses during the permit term.

C.5.f. Municipal Separate Storm Sewer System (MS4) Map

i. Task Description – Each Permittee shall make the map(s) of its MS4 available.

ii. Implementation Level – Permittees shall make maps of the MS4 publicly available, either electronically or in hard copy. Public availability shall be made through a single point of contact that is convenient for the public, such as a staffed counter or web accessible maps. The MS4 map availability shall be publicized through Permittee directories and web pages.

iii. Reporting – In the 2016 and 2019 Annual Reports, Permittees shall discuss how they make MS4 maps available to the public and how they publicize the availability of the MS4 maps.

C.6. Construction Site Control

Each Permittee shall implement a construction site inspection and control program at all construction sites, with followup and enforcement consistent with each Permittee's respective ERP, to prevent construction site discharges of pollutants into the storm drains. Inspections shall confirm implementation of appropriate and effective erosion and other construction pollutant controls by construction site operators/developers. Each Permittee shall in its reporting demonstrate the effectiveness of its inspections and enforcement activities to prevent polluted construction site discharges into storm drains.

C.6.a. Legal Authority for Effective Site Management

i. Task Description – Permittees shall have the ability to require effective stormwater pollutant controls to prevent discharge of pollutants into the storm drains, and implement progressively stricter enforcement to achieve expedient compliance and cleanup at all public and private construction sites.

ii. Implementation Level

(1) Permittees shall have the legal authority to require at all construction sites year-round effective erosion control, run-on and runoff control, sediment control, active treatment systems (as appropriate), good site management, and non-storm water management through all phases of construction (including, but not limited to, site grading, building, and finishing of lots) until the site is fully stabilized by landscaping or the installation of permanent erosion control measures.

(2) Permittees shall have the legal authority to oversee, inspect, and require expedient compliance and cleanup at all construction sites year-round.

C.6.b. Enforcement Response Plan (ERP)

i. Task Description – Each Permittee shall implement and update, as needed, its ERP – a reference document for inspection staff to take consistent actions to achieve timely and effective compliance at all public and private construction sites.

ii. Implementation Level – The ERP shall contain the following:

(1) Enforcement Procedures – A description of the Permittee's procedures from the discovery of the problems through the confirmation of implementation of corrective actions. This shall include guidance for appropriate enforcement actions, followup inspections, referrals to another agency, appropriate time periods for implementation of corrective actions, and the roles and responsibilities of staff responsible for implementing the ERP.

(2) Enforcement Tools and Field Scenarios – A discussion of the various, escalating enforcement tools for different field scenarios, including, but not limited to, potential discharges (e.g., housekeeping issues, evidence of actual discharges, lack of ERP, inadequate BMPs, and inappropriate

BMPs), actual discharges, non-compliance with previous enforcement actions, and sites with a history of potential and/or actual discharges.

(3) Timely Correction of Potential and Actual Discharges – A description of the Permittee's procedures for assigning due dates for corrective actions. Permittees shall require timely correction of all potential and actual discharges. Permittees shall require actual non-stormwater discharges to cease immediately. Corrective actions shall be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. If more than 10 business days are required for compliance, a rationale shall be recorded in the electronic database or equivalent tabular system.

C.6.c. Best Management Practices Categories

i. Task Description – Permittees shall require all construction sites to have site-specific, and seasonally and phase-appropriate, effective BMPS) in the following six categories:

- Erosion Control
- Run-on and Run-off Control
- Sediment Control
- Active Treatment Systems, as necessary
- Good Site Management
- Non-Stormwater Management.

ii. Implementation Level

The BMPs targeting specific construction site pollutants within the six categories listed in C.6.c.i. shall be site-specific. Site-specific BMPs targeting specific pollutants from the six categories listed in C.6.c.i. may be a combination of BMPs from:

- CASQA, BMP Handbook, Construction, January 2009.
- Caltrans Stormwater Quality Handbooks, Construction Site Best Management Practices Manual, March 2003, and addenda.
- New BMPs available since the release of these handbooks.
- Other BMPs shown to provide equivalent protection.

C.6.d. Plan Approval Process

i. Task Description – Permittees shall review erosion control plans for consistency with local requirements and the appropriateness and adequacy of proposed BMPs for each site before issuance of grading permits for projects. Permittees shall also verify that sites disturbing one acre or more of land have filed a Notice of Intent for permit coverage under the Construction General Permit.

ii. Implementation Level – Before approval and issuance of local grading permits, each Permittee shall perform the following:

(1) Review the site operator's/developer's erosion/pollution control plan or Stormwater Pollution Prevention Plan (SWPPP) to verify compliance with the Permittee's grading ordinance and other local requirements. Also review the site operator's/developer's erosion/pollution control plan or SWPPP to verify that seasonally appropriate and effective BMPs for the six categories listed in C.6.c.i. are planned;

(2) For sites disturbing one acre or more of soil, verify that the site operators/developers have filed a Notice of Intent for permit coverage under the Construction General Permit; and

(3) Provide construction stormwater management educational materials to site operators/developers, as appropriate.

C.6.e. Inspections

i. Task Description – Permittees shall conduct inspections to determine compliance with local ordinances (grading and stormwater) and determine the effectiveness of the BMPs in the six categories listed in C.6.c.i. in preventing the discharge of construction pollutants into the storm drain; and Permittees shall require timely corrections of all actual and potential discharges observed.

ii. Implementation Level

(1) **Wet Season Notification**

By September 1 of each year, each Permittee shall remind all site developers and/or owners disturbing one acre or more of soil, hillside projects, and high priority sites to prepare for the upcoming wet season.

(2) **Frequency of Inspections**

Inspections shall be conducted monthly during the wet season[12] at the following sites:

(a) All construction sites disturbing one or more acre of land;

(b) All hillside projects[13] (based on the Permittee's map of hillside development areas or criteria, or if the Permittee does not have a map of hillside development areas or criteria, those projects on sites with ≥15% slope) disturbing greater than or equal to 5,000 square feet; and

(c) High Priority Sites – Other sites determined by the Permittee or the Water Board as significant threats to water quality. In evaluating threat to water quality, the following factors shall be considered:

(i) Soil erosion potential or soil type;

(ii) Site slope;

[12] For the purpose of inspections, the wet season is defined as October through April, but sites need to implement seasonally appropriate BMPs in the six categories listed in C.6.c.i throughout the year.

[13] Effective July 1, 2016.

(iii) Project size and type;

(iv) Sensitivity or receiving waterbodies;

(v) Proximity to receiving waterbodies;

(vi) Non-stormwater discharges; and

(vii) Any other relevant factors as determined by the local agency or the Water Board.

(3) **Contents of Inspections**

Inspections shall focus on the adequacy and effectiveness of the site-specific BMPs implemented for the six categories listed in C.6.c.i. Permittees shall require timely corrections of all actual and potential problems observed. Inspections of construction sites shall include, but are not limited to, the following:

(a) Assessment of compliance with Permittee's ordinances and permits related to urban runoff, including the implementation and maintenance of the verified erosion/pollution control plan or SWPPP (from C.6.d.ii.(1));

(b) Assessment of the adequacy and effectiveness of the site-specific BMPs implemented for the six categories listed in C.6.c.i.;

(c) Visual observations for:

- actual discharges of sediment and/or construction related materials into storm drains and/or waterbodies.
- evidence of sediment and/or construction related materials discharges into storm drains and/or waterbodies.
- illicit connections, and
- potential illicit connections.

(d) Education on stormwater pollution prevention, as needed.

(4) **Tracking**

All inspections shall be recorded on a written or electronic inspection form. Inspectors shall follow the ERP for all actual and potential discharges discovered during the inspection.

Permittees shall track in an electronic database or tabular format all inspections. This electronic database or tabular format shall be made readily available during inspections and audits by the Water Board staff or its representatives. This electronic database or tabular format shall record the following information for each site inspection:

(a) Site name;

(b) Inspection date;

(c) Weather during inspection;

(d) Enforcement Response Level (Use ERP);

(e) Problem(s) observed using Illicit Discharge and the six BMP categories listed in C.6.c.i.;

(f) Resolution of Problems noted using the following three standardized categories: Problems Fixed, Need More Time, and Escalate Enforcement; and

(g) Comments, which shall include all Rationales for Longer Compliance Time, all escalation in enforcement discussions, and any other information that may be relevant to that site inspection.

iii. Reporting

(1) In the 2016 Annual Report, each Permittee shall certify the criteria it uses to determine hillside developments. If the Permittee is using maps of hillside developments areas or other written criteria, include a copy in the Annual Report.

(2) In the 2015-2016 Annual Report, each Permittee shall summarize the following information:

(a) Total number of active sites disturbing less than one acre of soil requiring inspection;

(b) Total number of active sites disturbing one acre or more of soil;

(c) Total number of inspections conducted;

(d) Number and percentage[14] of violations in each of the six categories listed in C.6.c.i.;

(e) Number and percentage[15] of each type of enforcement action taken as listed in each Permittee's ERP;

(f) Number of discharges, actual and those inferred through evidence, of sediment or other construction related materials;

(g) Number of sites with discharges, actual and those inferred through evidence, of sediment or other construction related materials;

(h) Number and percentage[16] of violations fully corrected prior to the next rain event but no longer than 10 business days after the violations are discovered or otherwise considered in a timely, though longer period; and

(i) Number and percentage[17] of violations not fully corrected 30 days after the violations are discovered.

(3) Beginning with the 2016-2017 Annual Report, each Permittee shall summarize the following information:

[14] Percentage shall be calculated as number of violations in each category divided by total number of violations in all six categories.

[15] Percentage shall be calculated as number of each type of enforcement action divided by the total number of enforcement actions.

[16] Percentage shall be calculated as follows: number of violations fully corrected prior to the goal of the next rain event but no later than 10 business days after the violations are discovered divided by the total number of violations for the reporting year.

[17] Percentage shall be calculated as follows: number of violations not fully corrected 30 days after the violations are discovered divided by the total number of violations for the reporting year.

(a) Total number of active hillside sites disturbing less than one acre of soil requiring inspection;

(b) Total number of active sites disturbing 1 acre or more of soil;

(c) Total number of active sites disturbing less than one acre of soil identified as High Priority sites in C.6.e.ii.(2)(c) requiring inspections;

(d) Total number of inspections conducted;

(e) Number of each type of enforcement action taken as listed in each Permittee's ERP;

(f) Number of illicit discharges, actual and those inferred through evidence, of sediment or other construction-related materials;

(g) Number of enforcement actions or discrete number of potential and actual discharges fully corrected prior to the next rain event, but no longer than 10 business days after the potential and actual discharges[18] are discovered or otherwise considered corrected in a timely, though longer period.

(4) In each Annual Report, each Permittee shall evaluate its respective electronic database or tabular format and the summaries produced in C.6.e.ii.(4) above. This evaluation shall include findings on the program's strength, comparison to previous years' results, as well as areas that need more focused education for site owners, operators, and developers the following year.

(5) The Executive Officer may require that the information recorded and tracked by C.6.e.ii.(4) be submitted electronically or in a tabular format. Permittees shall submit the information within 10 working days of the Executive Officer's requirement. Submittal of the information in tabular form for the reporting year is not required in each Annual Report, but it is encouraged.

C.6.f. Staff Training

i. Task Description – Permittees shall provide training or access to training for staff conducting construction stormwater inspections.

ii. Implementation Level – Permittees shall provide training at least every other year to municipal staff responsible for conducting construction site stormwater inspections. Training topics shall include information on correct uses of specific BMPs, proper installation and maintenance of BMPs, Permit requirements, local requirements, and the ERP.

iii. Reporting – Permittees shall include in each Annual Report the following information: training topics covered, dates of training, and the number of the Permittees' inspectors attending each training. If there was no training in that year, so state.

[18] Permittees who track by discrete potential and actual discharges shall report by discrete discharges. Permittees who track by enforcement actions shall report by enforcement actions.

C.7. Public Information and Outreach

Each Permittee shall increase the awareness of a broad spectrum of the community, including a diversity of socioeconomic groups and ethnic communities, regarding the impacts of stormwater pollution on receiving waters and potential solutions to mitigate the problems caused; positively influence the waste disposal and runoff pollution generation behavior of target audiences by encouraging implementation of appropriate solutions; and involve various citizens in mitigating the impacts of stormwater pollution. Outreach required in other provisions may be conducted under Provision C.7.

C.7.a. Storm Drain Inlet Marking

i. Task Description – Permittees shall mark and maintain municipally-maintained storm drain inlets with an appropriate stormwater pollution prevention message, such as "No dumping, drains to Bay" or equivalent. For newly-approved, privately maintained streets, Permittees shall require storm drain inlet markings with an appropriate stormwater pollution prevention message by the project developer upon construction and maintenance of markings through the development maintenance entity. Markings on the storm drain inlets shall be verified prior to acceptance of the project.

ii. Implementation Level

(1) Inspect and maintain storm drain inlet markings of at least 80 percent of municipality-maintained inlets to ensure they are legibly labeled with a no dumping message or equivalent once per permit term.

(2) Storm drain inlet markings of newly developed privately-maintained streets shall be verified prior to acceptance of the project. Permittees shall require maintenance of the storm drain inlet markings through the development maintenance entity.

iii. Reporting – In the 2020 Annual Report, each Permittee shall (1) state how many municipally-maintained storm drain inlets it has, (2) certify that at least 80 percent of municipality-maintained storm drain inlet markings are legibly labeled with an appropriate stormwater pollution prevention message during the permit term; (3) include a picture of a labeled municipality-maintained inlet; and (4) certify that all privately-maintained streets had storm drain inlet markings verified prior to acceptance of the project and were required to maintain the storm drain inlet markings through the development maintenance entity.

C.7.b. Outreach Campaigns

i. Task Description – Permittees shall continue to participate in or contribute to outreach campaigns, with the goal of significantly increasing overall awareness of stormwater runoff pollution prevention messages and behavior changes in target audiences.

ii. Implementation Level

(1) Target a broad audience with a minimum of one outreach campaign with specific stormwater runoff pollution prevention messages. The outreach

campaign(s) should utilize various electronic and print media, and paid and free media to best reach the different target audiences. The outreach campaign(s) may be coordinated regionally or county-wide.

(2) Permittees shall conduct a post-campaign effectiveness assessment/evaluation to identify and quantify the audiences' knowledge, trends, and attitudes and/or practices; and to measure the overall population's awareness of the messages and behavior changes achieved by the outreach campaigns. Effectiveness assessment/evaluation may be done regionally or county-wide.

iii. Reporting – In the Annual Report following the post-campaign effectiveness assessment/evaluation, each Permittee (or the Countywide Program, if the effectiveness assessment/evaluation was done county-wide or the regional program, if the effectiveness assessment/evaluation was done regionally) shall provide a report of the effectiveness assessment/evaluation completed, which, at minimum, shall include the following:

(1) A description of the outreach campaign.

(2) A summary of how the effectiveness assessment/evaluation was implemented.

(3) An analysis of the effectiveness assessment/evaluation results.

(4) A discussion of the measurable changes in awareness and behavior achieved.

(5) A discussion of the planned or future outreach campaigns to influence awareness and behavior changes regarding stormwater runoff pollution prevention messages.

C.7.c. Stormwater Pollution Prevention Education

i. Task Description – Permittees shall continue to maintain a point of contact to provide the public with stormwater pollution prevention information.

ii. Implementation Level

(1) Each Permittee shall maintain and publicize one point of contact for information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives. This point of contact can be maintained individually or collectively and Permittees may combine this function with the spill and dumping complaint central contact point required in C.5.

(2) Each Permittee shall place and maintain information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives on its website. In lieu of posting the detailed informational pages directly on their individual websites, Permittees may choose to provide links from their websites to the countywide program's and/or BASMAA's websites. Each Permittee shall publicize its website.

iii. Reporting – In the 2016 Annual Report, each Permittee shall list the point of contact, discuss how this point of contact and stormwater pollution website are publicized and maintained, and certify that it has a website dedicated to providing and maintaining information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives.

C.7.d. Public Outreach and Citizen Involvement Events

i. Task Description – Public outreach shall include a variety of pollution prevention message such as car washing; proper use, storage and disposal of vehicle waste fluids; household waste materials disposal; pesticide use; and trash. Public outreach events may include venues such as fairs, shows, and workshops. Citizen involvement events may include venues such as creek/shore clean-ups, adopt-an-inlet/creek/beach programs, volunteer monitoring, storm drain inlet marking, riparian restoration activities, community grants.

ii. Implementation Level – Each Permittee shall annually participate and/or host a mix of public outreach and citizen involvement events according to its population, as shown in the table below:

Table 7.1 Public Outreach and Citizen Involvement Events[19]

Permittee Population	Number of Events
< 10,000	2
10,001– 40,000	4
40,001 – 100,000	5
100,001 – 175,000	7
175,001 – 250,000	8
> 250,000	10
Non-population-based Permittees[20]	6

iii. Reporting – In each Annual Report, each Permittee shall list the events (name of event, event location, and event date) participated in; identity whether the event is public outreach or citizen involvement; and assess the effectiveness of efforts with appropriate measures (e.g., success at reaching a broad spectrum of the community, number of participants compared to previous years, post-event effectiveness assessment/evaluation results, quantity/volume of materials cleaned up and comparisons to previous efforts).

C.7.e. Watershed Stewardship Collaborative Efforts

i. Task Description – Permittees shall individually or collectively encourage and support watershed stewardship collaborative efforts of community groups such as the Contra Costa Watershed Forum, the Santa Clara Basin Watershed

[19] Permittees may claim individual credits for all events in which their Countywide Program or BASMAA participates, supports, and/or hosts, which are publicized to reach the Permittee's jurisdiction.

[20] Alameda County Flood Control and Water Conservation District, Contra Costa Flood Control and Water Conservation District, Santa Clara Valley Water District, Vallejo Sanitation and Flood Control District, and Zone 7 of the Alameda County Flood Control and Water Conservation District

Management Initiative, "friends of creek" groups, and other organizations that benefit the health of the watershed, such as the Bay-Friendly Landscaping and Gardening Coalition. If no such organizations exist, encourage and support development of grassroots watershed groups or engagement of an existing group, such as a neighborhood association, in watershed stewardship activities. Coordinate with existing groups to further stewardship efforts.

ii. Implementation Level – Annually demonstrate effort.

iii. Reporting – In each Annual Report, each Permittee shall state the level of effort, describe the support given, state what efforts were undertaken and the results of these efforts, and provide an evaluation of the effectiveness of these efforts.

C.7.f. School-Age Children Outreach

i. Task Description – Permittees shall individually or collectively implement outreach activities designed to increase awareness of stormwater and/or watershed message(s) in school-age children (K through 12).

ii. Implementation Level – Implement annually and demonstrate effectiveness of efforts through assessment.

iii. Reporting – In each Annual Report, each Permittee shall state the level of effort, spectrum of children reached, and methods used, and provide an evaluation of the effectiveness of these efforts.

C.7.g. Outreach to Municipal Officials

i. Task Description – Permittees shall conduct outreach to municipal officials. One alternative means of accomplishing this is through the use of the Nonpoint Education for Municipal Officials program (NEMO) to significantly increase overall awareness of stormwater and/or watershed message(s) among regional municipal officials.

ii. Implementation Level – At least once per permit cycle, or more often.

iii. Reporting – Permittees shall summarize efforts in the 2020 Annual Report.

C.8. Water Quality Monitoring

C.8.a. Compliance Options

All Permittees shall comply with all the monitoring requirements in this Provision. Permittees may choose any of the following mechanisms, or a combination of these mechanisms, to meet the monitoring requirements:

i. **Regional Collaboration.** Permittees are encouraged to continue contributing to the Regional Monitoring Collaborative (RMC), which coordinates water quality monitoring conducted by all the Permittees. Permittees are encouraged to consider and assign additional duties to the RMC for purposes of increased efficiencies, particularly, but not limited to, reporting duties.

ii. **Area-wide Stormwater Program.** Permittees may contribute to their countywide or area-wide Stormwater Program, so that the Stormwater Program conducts monitoring on behalf of its members.

iii. **Third-party Monitoring.** Permittees may use data collected by a third-party organization, such as the Water Board or Department of Pesticide Regulation, to fulfill a monitoring requirement, provided the data are demonstrated to meet the data quality objectives described in Provision C.8.b.

C.8.b. Monitoring Protocols and Data Quality

Where applicable, monitoring data must be Surface Water Ambient Monitoring Program (SWAMP) comparable. Minimum data quality shall be consistent with the latest version of the SWAMP Quality Assurance Project Plan (QAPrP) for applicable parameters, including data quality objectives, field and laboratory blanks, field duplicates, laboratory spikes, and clean techniques, using the most recent SWAMP Standard Operating Procedures.

C.8.c. San Francisco Estuary Receiving Water Monitoring

With limited exceptions, urban runoff from the Permittees' jurisdictions ultimately discharges to the San Francisco Estuary. Monitoring of the Estuary is intended to answer questions[21] such as:

- Are chemical concentrations in the Estuary potentially at levels of potential concern and are associated impacts likely?
- What are the concentrations and masses of contaminants in the Estuary and its segments?
- What are the sources, pathways, loadings, and processes leading to contaminant related impacts in the Estuary?
- Have the concentrations, masses, and associated impacts of contaminants in the Estuary increased or decreased?

[21] http://www.sfei.org/rmp/objectives (9/15/2014). While the stated objectives may change over time, the intent of this provision is for Permittees to continue contributing financially and as stakeholders in such a program as the RMP, which monitors the quality of San Francisco Bay.

- What are the projected concentrations, masses, and associated impacts of contaminants in the Estuary?

The Permittees shall participate in implementing an Estuary receiving water monitoring program, at a minimum equivalent to the San Francisco Estuary Regional Monitoring Program by contributing their fair-share financially on an annual basis.

C.8.d. Creek Status Monitoring

Creek status monitoring is intended to assess the chemical, physical, and biological impacts of urban runoff on receiving waters. In particular, the monitoring required by this provision is intended to answer the following questions:

- Are water quality objectives, both numeric and narrative, being met in local receiving waters, including creeks, rivers and tributaries?
- Are conditions in local receiving waters supportive of or likely to be supportive of beneficial uses?

i. Biological Assessment including Nutrients and General Water Quality Parameters

(1) Field and Laboratory Method – The Permittees shall conduct biological assessments (also referred to herein as bioassessments) in accordance with SWAMP Standard Operating Procedures[22,23,24] and shall include collection and reporting of in-stream biological and physical habitat data according to the *SWAMP Standard Operating Procedures for Bioassessment,*[3] including benthic algae, benthic macroinvertebrates, water chemistry, and full characterization of physical habitat. The bioassessment sampling method shall be multihabitat reach-wide. For algae, the assessment shall include all analytes in the protocol, including diatom and soft algae taxonomy, biomass (ash-free dry weight), chlorophyll a, pebble count algae information, and reach-wide algal percent cover. Physical Habitat (PHab) Assessment shall include the SWAMP full physical habitat characterization method.

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[22] Ode, P.R. 2007. *Standard Operating Procedures for Collecting Benthic Macroinvertebrate Samples and Associated Physical and Chemical Data for Ambient Bioassessments in California*, State Water Board Surface Water Ambient Monitoring Program (SWAMP), as subsequently revised [http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/swamp_sop_bio.pdf].

[23] Current methods are documented in (1) *SWAMP Standard Operating Procedure (SOP) and Interim Guidance on Quality Assurance for SWAMP Bioassessments, Memorandum to SWAMP Roundtable from Beverly H. van Buuren and Peter R. Ode, May 21, 2007*, and (2) *Amendment to SWAMP Interim Guidance on Quality Assurance for SWAMP Bioassessments, Memorandum to SWAMP Roundtable from Beverly H. van Buuren and Peter R. Ode, September 17, 2008* both available at http://www.waterboards.ca.gov/water_issues/programs/swamp/tools.shtml#methods.

[24] The Standard Operating Procedure for algae sampling and evaluation is available in the following: Fetscher, A. and K. McLaughlin, May 16, 2008. *Incorporating Bioassessment Using Freshwater Algae into California's Surface Water Ambient Monitoring Program (SWAMP).* Technical Report 563 and current SWAMP-approved updates to Standard Operating Procedures therein. Available at http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/reports/563_periphyton_bioassessment.pdf.

(2) The sampling crew shall be trained by a SWAMP-approved trainer and possess a Scientific Collection Permit from the California Department of Fish and Wildlife and participate in a SWAMP-approved inter-calibration exercise at least once in the Permit term. The Permittee may, but is not required to, modify its sampling procedures if these referenced procedures change during the Permit term. In such case, the Permittee shall notify the Water Board and follow the updated SWAMP procedures.

(3) Macroinvertebrates shall be identified and classified according to the *Standard Taxonomic Effort (STE) Level I of the Southwestern Association of Freshwater Invertebrate Taxonomists (SAFIT)*[25] (except Chironomids should be identified to subfamily) using a fixed count of 600 organisms per sample. The laboratory shall follow the *SWAMP Standard Operating Procedures for Laboratory Processing and Identification of Benthic Macroinvertebrates in California*.[26] Soft-bodied algae and diatom algae shall be identified to the species level. Algae identifications must be harmonized with the SWAMP master taxa list. All quality assurance and quality control steps specified in the *SWAMP Quality Assurance Program Plan*[1] shall be performed.

(4) The Permittees shall measure general water quality parameters using a sonde and collect nutrient samples at a site when biological samples are collected. The general water quality parameters shall include temperature, dissolved oxygen, pH, and specific conductance. Nutrients samples shall be analyzed for total ammonia, nitrate, nitrite, total Kjeldahl nitrogen, total nitrogen (calculated), dissolved orthophosphate and total phosphorous, silica, and chloride.

(5) In conducting the required bioassessment monitoring, the Permittees shall take precautions to prevent the introduction or spread of aquatic invasive species.

(6) Sample Design/Locations – The Permittees shall continue to use the probabilistic sample design developed in the previous Permit term to select sample locations. Also, Permittees shall continue to use the sampling site order and the rationale to exclude potential sites as previously defined by the sample design and reconnaissance standard operating procedures. After a statistically representative data set (i.e., approximately 30 samples) has been collected to address management questions related to condition of aquatic life, Permittees may select up to 20% of sample locations on a targeted basis to evaluate temporal trends in or other impacts to aquatic life condition.

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[25] The current SAFIT STEs (November 28, 2006) list requirements for both the Level I and Level II taxonomic effort, and are located at http://www.waterboards.ca.gov/water_issues/programs/swamp/safit.shtml. When new editions are published by SAFIT, they will supersede all previous editions. All editions will be posted at the State Water Board's SWAMP website.

[26] http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/bmi_lab_sop_final.pdf.

(7) Frequency, Timeframe and Number of Sites – Sampling shall occur once per year during the appropriate index period (April 15-June 30) with consideration of antecedent rainfall. Sampling is a one-time grab sample for biological communities, nutrients, and general water quality collected on the same day. The Permittees shall collect at least the minimum number of samples as shown below:

Sampling Agency	Minimum Number of Samples
Alameda Permittees	20 per year
Santa Clara Permittees	20 per year
Contra Costa Permittees	10 per year
San Mateo Permittees	10 per year
Fairfield-Suisun Permittees	8 per 5-year period
Vallejo Permittees	4 per 5-year period

(8) Followup – Sites scoring less than 0.795 according to the California Stream Condition Index[27] (CSCI) are appropriate for a Stressor Source Identification (SSID) project as defined in C.8.e. Such a score indicates a substantially degraded biological community relative to reference conditions. Sites where there is a substantial difference in CSCI score observed at a location relative to upstream or downstream sites are also appropriate for a SSID project. If many samples show a degraded biological condition, sites where water quality is most likely to cause and contribute to this degradation may be prioritized by the Permittee for a SSID project.

ii. Chlorine

(1) Field and Laboratory Method – Permittees shall collect a grab sample and analyze for free and total chlorine using methods specified in the BASMAA Regional Monitoring Coalition Creek Status Monitoring Program Standard Operating Procedures.

(2) Sample Design/Locations – Sample locations may be selected by the Permittees to monitor locations near known or suspected potable water line breaks; to coincide with bioassessment sites; to coincide with creek restoration sites; or to resample a location where chlorine has been found in the past.

(3) Frequency, Timeframe, and Number of Samples – Samples shall be collected in spring or summer. Vallejo and Fairfield-Suisun Permittees each shall collect their samples by the end of the second year of the permit term. The Permittees shall collect at least the minimum number of samples as shown below:

[27] Documentation for the CSCI and information on calculating scores can be found at http://www.swrcb.ca.gov/plans_policies/biological_objective.shtml.

Sampling Agency	Minimum Number of Locations Sampled
Alameda Permittees	20 per year
Santa Clara Permittees	20 per year
Contra Costa Permittees	10 per year
San Mateo Permittees	10 per year
Fairfield-Suisun Permittees	8 per 5-year period
Vallejo Permittees	4 per 5-year period

(4) Followup – The Permittees shall immediately resample if the chlorine concentration is greater than 0.1 mg/L. If the resample is still greater than 0.1 mg/L, then Permittees shall report the observation to the appropriate Permittee central contact point for illicit discharges so that the illicit discharge staff can investigate and abate the associated discharge in accordance with its Provision C.5.e - Spill and Dumping Complaint Response Program.

iii. Temperature

(1) Field Method – The Permittees shall monitor temperature of their streams using a digital temperature logger or equivalent.

(2) Sample Design/Locations – The Permittees shall monitor stream reaches that are documented to support cold water fisheries and where either past data or best professional judgment indicates that temperatures may negatively affect that beneficial use.

(3) Frequency, Timeframe and Number of Sites – Loggers shall be installed so that water temperatures are recorded at 60-minute intervals from April through September at the number of sites specified below. Vallejo and Fairfield-Suisun Permittees each shall collect their samples by the end of the second year of the permit term. The Permittees shall collect at least the minimum number of samples as shown below:

Sampling Agency	Minimum Number of Stream Reaches Sampled
Alameda Permittees	8 per year
Santa Clara Permittees	8 per year
Contra Costa Permittees	4 per year
San Mateo Permittees	4 per year
Fairfield-Suisun Permittees	2 per 5-year period
Vallejo Permittees	2 per 5-year period

(4) Followup – The Permittees shall identify a site for which results at one sampling station exceed the applicable temperature trigger or demonstrate a spike in temperature with no obvious natural explanation as a candidate SSID project. The temperature trigger is defined as when two or more weekly average temperatures exceed the Maximum Weekly Average Temperature of 17.0°C for a Steelhead stream, or when 20% of the results

at one sampling station exceed the instantaneous maximum of 24°C.[28] Permittees shall calculate the weekly average temperature by breaking the measurements into non-overlapping, 7-day periods.

iv. Continuous Monitoring of Dissolved Oxygen, Temperature, and pH

(1) Field and Laboratory Method – The Permittees shall monitor general water quality parameters of streams using a water quality sonde or equivalent. Parameters shall include dissolved oxygen (mg/L and % saturation), pH, specific conductance (µS), and temperature (°C).

(2) Sample Design/Locations – The Permittees shall monitor stream reaches that are documented to support cold water fisheries or where either past data or best professional judgment indicates that temperature may negatively affect the cold water beneficial use.

(3) Frequency, Timeframe, and Number of Sites – The Permittees shall install sondes so that parameters are recorded at 15-minute intervals over 1-2 weeks in the spring concurrent with bioassessment sampling and 1-2 weeks in summer at the same sites. The Permittees shall monitor at least the minimum number of sites as shown below:

Sampling Agency	Minimum Number of Sample Sites in Spring	Minimum # of Sample Sites in Summer
Alameda Permittees	3 per year	3 per year
Santa Clara Permittees	3 per year	3 per year
Contra Costa Permittees	2 per year	2 per year
San Mateo Permittees	2 per year	2 per year
Fairfield-Suisun Permittees	2 per permit term	2 per 5-year period
Vallejo Permittees	2 per permit term	2 per 5-year period

(4) Followup – When results at one sampling station exceed the applicable temperature or dissolved oxygen trigger or demonstrate a spike in temperature or drop in dissolved oxygen with no obvious natural explanation, the Permittees shall identify that sample site as a candidate SSID project. The Permittees shall calculate the weekly average temperature and dissolved oxygen by separating the measurements into non-overlapping, 7-day periods. The temperature trigger is defined as any of the following:

a. Maximum Weekly Average Temperature exceeds 17.0°C for a Steelhead stream, or 20 percent of the instantaneous results exceed 24°C[8];

[28] This maximum weekly average temperature trigger corresponds to a 10% reduction in growth as listed in Table 7.3 in Sullivan K., Martin, D.J., Cardwell, R.D., Toll, J.E., Duke, S. 2000. *An Analysis of the Effects of Temperature on Salmonids of the Pacific Northwest with Implications for Selecting Temperature Criteria, Sustainable Ecosystem Institute*). The 24° C acute lethal threshold is the more protective threshold cited on page 4-1 in Sullivan et al. (2000).

b. 20 percent of instantaneous pH results are < 6.5 or > 8.5;

c. 20 percent of the instantaneous specific conductance results are > 2000µS, or there is a spike in readings with no obvious natural explanation; or

d. 20 percent of instantaneous dissolved oxygen results are < 7 mg/L in a cold water fishery stream.

v. Pathogen Indicators

(1) Field and Laboratory Method – The Permittees shall collect and analyze samples for Enteroccoci and *E. coli* in accordance with the most recent U.S. EPA protocols.[29]

(2) Sample Design/Locations – The Permittees shall collect one or more samples in a creek and at an area where water-contact recreation is likely or at an opportunistic location where there is potential to detect leaking sewerage infrastructure.

(3) Frequency, Timeframe and Number of Sites – The Permittees shall collect samples in the dry season. Permittees shall collect at least the minimum number of samples as shown below:

Sampling Agency	Minimum Number of Sample Sites
Alameda Permittees	5 per year
Santa Clara Permittees	5 per year
Contra Costa Permittees	5 per year
San Mateo Permittees	5 per year
Fairfield-Suisun Permittees	3 per 5-year period
Vallejo Permittees	3 per 5-year period

(4) Followup – If U.S. EPA's statistical threshold value[30] for 36 per 1000 primary contact recreators is exceeded, the water body reach shall be identified as a candidate SSID project.

C.8.e. Stressor/Source Identification (SSID) Projects

When any monitoring result triggers a candidate for a SSID project followup as indicated within the provisions of C.8.d and C.8.g, the Permittees shall take the following actions, as also required by Provision C.1. If the trigger stressor or source is already known, the Permittee(s) shall take appropriate followup action to reduce the water quality stressor or source and count this action as a completed SSID Project.

SSID projects are intended to be oriented toward taking action(s) to alleviate stressors and reduce sources of pollutants; thus the Permittees shall attempt to

[29] U.S. EPA protocols available at http://water.epa.gov/scitech/methods/cwa/methods_index.cfm. Analytical methods listed here are also acceptable: http://water.epa.gov/grants_funding/beachgrants/chapter4.cfm

[30] U.S. EPA. 2012. *Recreational Water Quality Criteria*. Office of Water 820-F-12-058. Table 4.

complete all steps for half their required SSID projects, at a minimum, during the permit term.

i. Review monitoring (C.8.d and C.8.g) results annually and maintain a list of all results exceeding thresholds described therein. Pollutant of Concern Monitoring (C.8.f) results may be included on the list as appropriate.

ii. Select followup SSID projects from the list developed in C.8.e.i. based on criteria such as magnitude of threshold exceedance; parameter (for a variety of parameters); likelihood stormwater management action(s) could address the exceedance; and similar priorities.

(1) Permittees who conduct SSID projects through a regional collaborative shall collectively initiate a minimum of eight new SSID projects (minimum of one for toxicity) during the Permit term. Because these SSID projects are being conducted through a regional collaborative, all SSID project reports shall be presented in a unified, regional-level report when submitted to the Water Board. In the case that no sample exhibits toxicity, as defined within the method required in this section, during the permit term, a SSID project for toxicity is not required.

(2) If conducted through a countywide Stormwater Program, the Santa Clara and Alameda Permittees each shall be required to initiate five (minimum of one for toxicity) SSID projects; the Contra Costa and San Mateo Permittees each shall be required to initiate three SSID (one for toxicity) projects; and the Fairfield-Suisun and Vallejo Permittees each shall be required to initiate one SSID project(s) during the Permit term. In the case that no sample exhibits toxicity, as defined within the method required in this section, within a countywide program area during the permit term, a SSID project for toxicity is not required.

iii. The Permittees shall conduct site specific SSID project(s) (or non-site specific if the problem is wide-spread) in the stepwise process described below:

(1) Step 1: The Permittees shall develop a work plan for each SSID project and submit the work plans with the Urban Creeks Monitoring Report (UCMR) such that a minimum of half the required number of SSID projects are started (at a minimum, have a workplan) by the third year of the permit term, with the goal of completing Step 2, at a minimum, for half the required SSID projects within the permit term. The work plan shall:

(a) Define the problem (e.g., magnitude and temporal and geographic extent) to the extent known;

(b) Describe the SSID project objectives, including the management context within which the results of the investigation will be used;

(c) Consider the problem within a watershed context and look at multiple types of related indicators, where possible (e.g., basic water quality data and biological assessment results);

(d) List candidate causes of the problem (e.g., biological stressors, pollutant sources, and physical stressors);

(e) Establish a schedule for investigating the cause(s) of the trigger stressor/source to begin upon completion of the workplan. Investigations may include evaluation of existing data, desktop analyses of land uses and management actions, and/or collection of new data.

(f) Conduct a site specific study (or non-site specific if the problem is wide-spread) in a stepwise process to identify and isolate the cause(s) of the trigger stressor/source. This study should follow guidance for Toxicity Reduction Evaluations (TRE) or Toxicity Identification Evaluations (TIE)[18]. A TRE, as adapted for urban stormwater, allows Permittees to use other sources of information (such as industrial facility stormwater monitoring reports) in attempting to determine the trigger cause, potentially eliminating the need for a TIE. If a TRE does not result in identification of the stressor/source, Permittees shall conduct a TIE. For toxicity studies where there is no chemical pollutant associated with the creek status monitoring sample exhibiting toxicity, a TIE should be conducted. Where chemical data indicate a pollutant, such as fipronil or a pyrethroid, is present at adverse effects levels in the sample location, it is not necessary to conduct a TIE, and the SSID project would be considered complete;

(g) For physical habitat, physiochemical pollutants (dissolved oxygen, pH, conductivity, temperature), nutrients, metals, and other stressors, the investigation shall generally follow Step 5 (Identify Probably Causes) of the Causal Analysis/Diagnosis Decision Information System (CADDIS); [31]

(h) For pathogen indicators, the study shall generally follow the California Microbial Source Identification Manual: A Tiered Approach to Identifying Fecal Pollution Sources to Beaches (2013) or equivalent process or method;[32] and

(i) The Permittees may modify the SSID Work Plan in subsequent years of the Permit term in order to address new Creek Status (or POC) results that exceed applicable thresholds and are of a higher priority based on the criteria in C.8.e.ii.

(2) Step 2: The Permittees shall conduct SSID investigations according to the schedule in each SSID project work plan and shall report on the status of SSID investigations annually in the UCMR. Local stormwater Permittees shall be advised of the SSID project and consulted regarding

[31] http://www.epa.gov/caddis/si_step5_overview.html

[32] http://www.swrcb.ca.gov/water_issues/programs/beaches/cbi_projects/docs/sipp_manual.pdf

possible local sources and potential management actions during the work plan phase and periodically throughout the SSID project.

(3) Step 3: Follow-up actions.

(a) When a Permittee(s) determines that discharges to its stormwater collection system(s) contribute to an exceedance of a water quality standard or an exceedance of a trigger threshold such that the water body's beneficial uses are not supported, the Permittee(s) shall submit a report in the UCMR that describes BMPs that are currently being implemented, and the current level of implementation, and additional BMPs that will be implemented, and/or an increased level of implementation, to prevent or reduce the discharge of pollutants that are causing or contributing to the exceedance of WQS. The report shall include an implementation schedule.

(b) If a Permittee(s) determines that discharges from its (their) stormwater collection system(s) are not contributing to an exceedance of a water quality standard, the Permittee(s) may end the SSID project. The Executive Officer must concur in writing before an SSID project is determined to be completed.

In cases where SSID investigations prove inconclusive (e.g., the trigger threshold exceedance is episodic or reasonable methods do not reveal a stressor/source), the Permittee(s) may request that the Executive Officer consider the SSID project complete.

(c) Reporting: The Permittees shall submit an SSID status report in each UCMR which summarizes the actions taken in C.8.e.i-iii above. The SSID status report shall include a running summary of all SSID projects (C.8.e.ii), including start date, brief problem definition, and schedule for each project. As projects progress, the SSID report shall describe findings and monitoring results and outline steps for the upcoming year for each ongoing project. The Permittees shall submit the SSID status report with each UCMR.

iv. As long as Permittees have complied with the procedures set forth above, they do not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed to do so by the Water Board.

C.8.f. Pollutants of Concern Monitoring

Pollutants of Concern (POC) monitoring is intended to assess inputs of POCs to the Bay from local tributaries and urban runoff, provide information to support implementation of TMDLs and other pollutant control strategies, assess progress toward achieving wasteload allocations for TMDLs and help resolve uncertainties associated with loading estimates and impairments associated with these pollutants.

In particular, monitoring required by this provision must be directed toward addressing the following five priority POC management information needs:

1. **Source Identification** - identifying which sources or watershed source areas provide the greatest opportunities for reductions of POCs in urban stormwater runoff;
2. **Contributions to Bay Impairment** - identifying which watershed source areas contribute most to the impairment of San Francisco Bay beneficial uses (due to source intensity and sensitivity of discharge location);
3. **Management Action Effectiveness** - providing support for planning future management actions or evaluating the effectiveness or impacts of existing management actions;
4. **Loads and Status** - providing information on POC loads, concentrations, and presence in local tributaries or urban stormwater discharges; and
5. **Trends** - evaluating trends in POC loading to the Bay and POC concentrations in urban stormwater discharges or local tributaries over time.

Not all information needs apply to all POCs (see Table 8.2 below for details).

i. Sampling Methods – The Permittees shall implement or cause to be implemented the monitoring components shown in Table 8.1 in order to address each of the five POC management information needs.

Table 8.1 POC Monitoring Methods

Monitoring Type	Information Need	Monitoring Methods
1	Identify Source Areas	Monitoring methods to identify watershed sources of POCs should include: • Collection and analysis of POCs on sediments in urban stormwater runoff that are transported through MS4s or receiving waters during stormwater runoff events; or • Collection and analysis of POCs on bedded sediments deposited in MS4s or receiving waters; or • Collection and analysis of POCs in stormwater runoff or bedded sediments on source area properties (e.g. private property); or, • Other monitoring methods designed to identify specific sources or uses of POCs (e.g., caulk in roadways or building materials) or watershed source areas.
2	Identify watershed areas contributing most to Bay impairment	Monitoring methods to identify watershed areas contributing most to Bay impairment should include: • Methods described for Monitoring Type #1; or • Collection of small fish tissue (or equivalent indicator) near tributary confluences with the Bay and analysis for POCs; or • Collection of bedded sediments near tributary confluences with the Bay and analysis for POCs.
3	Provide support for future or existing management actions	Monitoring methods to support future or existing management actions should include: • Methods described for Monitoring Type #1, with a focus on monitoring the effectiveness of specific management actions in reducing or avoiding POCs in MS4 discharges.
4	Provide information on POC loads, concentrations, or presence / absence	Monitoring methods to provide information on POC loads, concentrations or presence/absence should include: • Methods described for Monitoring Type #1, in combination with quantitative modeling associated with quantifying POC loads from MS4s or small tributaries to the Bay.
5	Evaluate POC trends	Monitoring methods to provide information on trends in POC loads and concentrations overtime may include: Methods described for Monitoring Type #1 or #2.

ii. Parameters and Monitoring Frequency – The Permittees shall conduct POC monitoring consistent with the monitoring intensity and frequency specified in Table 8.2. Monitoring frequencies are described as the total and minimum number of samples that Permittees within a countywide Stormwater Program shall collectively collect and analyze in a Water Year (October 1 – September 30). Minimum number of samples that Permittees within a countywide Stormwater Program shall collect by the end of the Permit term to address each monitoring type are also specified.

Table 8.2 POC Monitoring Parameters, Effort and Type

Pollutant of Concern	**Total Samples[a] Collected /Analyzed (yearly minimum) for each Countywide Program: Alameda, Contra Costa, Santa Clara, and San Mateo**	**Minimum Number of Samples for each Monitoring Type[b]**
Polychlorinated Biphenyls (PCBs)	80 (8)	8 samples minimum for monitoring types 1-5
Total Mercury	80 (8)	8 samples minimum for monitoring types 1-5
Copper	20 (2)	4 samples minimum for monitoring types 4-5
Emerging Contaminants[c]: Must include but not limited to: Perfluorooctane Sulfonates (PFOS, in sediment) Perfluoroalkyl sulfonates (PFAS, in sediment) Alternative flame retardants	See footnote c	See footnote c
Ancillary Parameters[d]: Total organic carbon Suspended sediments (SSC) Hardness	as necessary to address management questions for other POCs – see footnote d	
Nutrients: Ammonium, Nitrate, Nitrite, Total Kjeldahl Nitrogen, Orthophosphate, Total Phosphorus (all nutrients collected together for each sample)	20 (2) for each nutrient species	20 samples for monitoring type 4 for each nutrient species.

[a] This column indicates the total number of samples, across all applicable monitoring types (i.e., monitoring types 1-5 from Table 8.1), that must be collected during the permit term. The number in parentheses indicates the minimum number of samples that must be collected, across all applicable monitoring types, during each of the five years of the permit. For example, 80 total samples must be collected for both total PCBs and mercury by each set of Santa Clara County, San Mateo County, Alameda County, and Contra Costa County Permittees during the term of the permit. Permittees must collect a minimum of 8 PCBs samples every year of the permit term, including the final year.

[b] This column indicates the monitoring types from Table 8.1 that are applicable to this POC along with the minimum number of samples that shall be collected by each set of Permittees (i.e., Santa Clara County, San Mateo County, Alameda County, and Contra Costa County) by the end of year four of the permit. The applicable monitoring type(s) is also stated to illustrate the management information need(s) motivating the collected data. For example, each set of Permittees (i.e., the Countywide Programs for Santa Clara, San Mateo, Alameda, and Contra Costa counties) must collect and analyze at least 8 samples to address monitoring types 1-5 in Table 8.1 for both total PCBs and total mercury. Some collected samples may address multiple management questions.

[c] The Permittees shall conduct or cause to be conducted a special study that addresses relevant management information needs for emerging contaminants. The special study must account for relevant CECs in stormwater and would address at least PFOS, PFAS, and alternative flame retardants being used to replace PBDEs.

[d] Total Organic Carbon (TOC) data are not used independently. Rather, TOC can be useful for normalizing PCBs data collected in water and sediment. TOC shall be collected concurrently with PCBs data that should be normalized to TOC. Similarly, suspended sediment concentrations (SSC) samples should be collected and analyzed when water samples are collected that will be used to assess loads, loading trends, or BMP effectiveness for PCBs and Mercury. Hardness data are used in conjunction with copper concentrations collected in fresh water.

iii. POC Parameters and Analytical Methods – Samples collected consistent with Table 8.2 shall be analyzed for parameters listed in Table 8.3. Where no laboratory method is listed in Table 8.3, Permittees shall use U.S. EPA or SWAMP-approved methods.

Table 8.3 POC Analytes and Analytical Methods

Pollutant of Concern	Matrix	Analyte(s) or Test Species	Laboratory Analytical Methods
Polychlorinated Biphenyls (PCBs)	Water	Total PCBs	U.S. EPA 1668 (RMP 40)
		Total Organic Carbon	
		Suspended sediments (SSC)	
	Bedded Sediment	Total PCBs	As appropriate to address the management information need: U.S. EPA 1668 (RMP 40), 8082A, or 8270D modified by Method 1625
		Total organic carbon	
Mercury	Water	Total Mercury	
	Bedded Sediment	Total Mercury	
Copper	Water	Total Copper	
		Dissolved Copper	
		Hardness	
Nutrients	Water	Ammonium	
		Nitrate	
		Nitrite	
		Total Kjeldahl Nitrogen	
		Orthophosphate	
		Total Phosphorus	

C.8.g. Pesticides and Toxicity Monitoring

The Permittees shall conduct wet weather and dry weather monitoring of pesticides and toxicity in urban creeks. If a statewide coordinated pesticides and pesticides-related toxicity monitoring program begins collecting data on an ongoing basis during the Permit term, Permittees may request the Executive Officer modify, reduce or eliminate this monitoring requirement, provided the resultant change, viewed in context of the statewide program, would result in overall improvement of pesticide monitoring data collection.

i. Toxicity in Water Column - Dry Weather

(1) Field and Laboratory Method – The Permittees shall collect grab samples of receiving water using applicable SWAMP comparable methodology. These samples shall be analyzed for the test organisms listed, and by the methods described, on Table 8.4.

Toxicity shall be evaluated using the Test of Significant Toxicity (TST) statistical approach.[33] Each sample shall be subject to determination of "Pass" or "Fail" and shall indicate "Percent Effect" from toxicity using nondiluted samples. The TST null hypothesis shall be "mean sample response $\leq 0.75 \times$ mean control response." A test result that rejects this null hypothesis shall be reported as "Pass." A test result that does not reject this null hypothesis shall be reported as "Fail." The relative "Percent Effect" of the sample is defined and reported as: ((Mean control response – Mean sample response) ÷ Mean control response)) × 100.

Table 8.4 Water Column Aquatic Toxicity Analytical Procedures

Test Species	Test Endpoint(s)	Units	U.S. EPA Method
Pimephales promelas (Fathead Minnow)	Larval Survival and Growth	Pass or Fail using TST, % Effect	EPA-821-R-02-013[34] EPA 833-R-10-003[35]
Ceriodaphnia dubia (Freshwater Crustacean)	Survival[a]	Pass or Fail, % Effect <25% Passes, >25% Fails	EPA-821-R-02-013 EPA 833-R-10-003
Ceriodaphnia dubia (Freshwater Crustacean)	Reproduction	Pass or Fail using TST, % Effect	EPA-821-R-02-013 EPA 833-R-10-003
Selenastrum capricornutum (Green Algae)	Growth	Pass or Fail using TST, % Effect	EPA-821-R-02-013 EPA 833-R-10-003
Hyalella azteca (Freshwater Amphipod)	Survival	Pass or Fail using TST, % Effect[b]	EPA-821-R-02-012[36] EPA 833-R-10-003
Chironomus dilutus (midge)	Survival	Pass or Fail using TST, % Effect[b]	EPA-821-R-02-012 EPA 833-R-10-003

[33] National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document (EPA 833-R-10-003, 2010), Appendix A, Figure A-1, and Table A-1.

[34] *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms.* EPA/821/R-02/013, 2002; Table IA, 40 CFR Part 136.

[35] *National Pollutant Discharge Elimination System Test of Significant Toxicity Implementation Document* (EPA 833-R-10-003) 2010.

[36] *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA/821/R-02/012, 2002; Table IA, 40 CFR Part 136). See Appendix B, page 238, for *H.azteca* and *C.dilutus* methods.

[a] The *Ceriodaphnia dubia* chronic toxicity test design for the survival endpoint is not amenable to the TST, Welch's t-test so the survival endpoint will be determined as a percent effect using the TST approach. A percent effect less than 25 percent will be considered a "pass," and a percent effect equal to or greater than 25 percent will be considered a "fail."
[b] For *Hyalella* and *Chironomus* acute toxicity test methods, the test result will be considered a "pass," regardless of a TST determination of "fail" if the percent survival in the receiving water is equal to or greater than 90 percent.

(2) Sample Design/Locations – Sample locations may be selected by the Permittees to monitor locations where toxicity could be likely; to coincide with bioassessment sites; to coincide with creek restoration sites; or to resample a location where toxicity has been found in the past.

(3) Frequency, Timeframe and Number of Sites – The Permittees shall collect samples annually in the dry season. Vallejo and Fairfield-Suisun Permittees each shall collect their sample by the end of the second water year of the permit term. The Permittees shall collect at least the minimum number of samples as shown below:

Sampling Agency	Minimum Number of Sample Sites
Alameda Permittees	2 per year
Santa Clara Permittees	2 per year
Contra Costa Permittees	1 per year
San Mateo Permittees	1 per year
Fairfield-Suisun & Vallejo Permittees collectively	1 per 5-year period

ii. Toxicity, Pesticides and Other Pollutants in Sediment - Dry Weather

(1) Field and Laboratory Method – The Permittees shall collect grab samples of creek sediment using applicable SWAMP comparable methodology. These samples shall be analyzed for the pollutants and organisms listed and by the methods described on Table 8.5. Where no laboratory method is listed in Table 8.5, Permittees shall use U.S. EPA or SWAMP-approved methods.

Table 8.5 Sediment Toxicity & Pollutants Analytical Procedures

Test Species or Pollutant	Units	Laboratory Method
Hyalella azteca and *Chironomus dilutus survival*[a]	Pass/Fail using TST, % Effect[a]	EPA-600/R-99-064[37]
Pyrethroids: bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin		EPA 3540C followed by EPA 8270D by NCI-GCMS
Carbaryl		
Fipronil		
Total PAHs		
Arsenic, Cadmium, Chromium, Copper, Lead, Nickel, Zinc		
Total organic carbon		
Grain size		

[37] *Methods for Measuring the Toxicity and Bioaccumulation of Sediment-associated Contaminants with Freshwater Invertebrates* (EPA 600/R-99-064) Second Edition. March 2000.

[a] For *Hyalella* and *Chironomus* acute toxicity test methods, the test result will be considered a "pass," regardless of a TST determination of "fail" if the percent survival in the receiving water is equal to or greater than 90 percent. The false positive rate (beta error) is 0.05 and the negative rate (alpha error) is 0.25 for these test methods.

(2) Sample Design/Locations – Samples shall be collected at fine-grained depositional locations. Such sample locations may be selected by the Permittees to monitor locations where toxicity could be likely, to coincide with bioassessment sites, or to resample a location where toxicity has been found in the past, for example.

(3) Frequency, Timeframe, and Number of Sites – The Permittees shall collect samples annually during the dry season. Vallejo and Fairfield-Suisun Permittees each shall collect their sample by the end of the second year of the permit term. Permittees shall collect at least the minimum number of samples as shown below:

Sampling Agency	Minimum Number of Sample Sites
Alameda Permittees	2 per year
Santa Clara Permittees	2 per year
Contra Costa Permittees	1 per year
San Mateo Permittees	1 per year
Fairfield-Suisun & Vallejo Permittees collectively	1 per 5-year period

iii. Wet Weather Pesticides and Toxicity Monitoring

(1) Field and Laboratory Method – The Permittees shall collect water column samples and analyze them for the following parameters using the methods specified in Tables 8.4 and 8.5. For imidacloprid, Permittees shall specify an analytical method that achieves a reporting level as close to 0.05 ppb as possible, but in no case exceeds 0.1 ppb).

- Pyrethroids: bifenthrin, cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin
- Imidacloprid
- Indoxacarb[38]
- Fipronil
- Toxicity

(2) Sample Design/Locations – The Permittees shall collect samples annually during storm events. Sample locations shall be representative of urban watersheds (i.e., bottom of watershed locations).

(3) Frequency, Timeframe, and Number of Sites – If this (C.8.g.iii) sampling is conducted by the RMC on behalf of all Permittees, a total of ten (10) samples shall be collected over the Permit term, with a minimum of six (6) samples collected by the end of the third water year of the permit term. If this (C.8.g.iii)

[38] Indoxacarb shall be a required analyte in the water year following notification by the Executive Officer that an analytical method with appropriate quality assurance and sensitivity is available. At the time of Permit issuance, an analytical method has not been developed.

sampling is conducted by Countywide Stormwater Programs, Permittees shall collect at least the minimum number of samples as shown below:

Sampling Agency	Minimum Number of Sample Sites
Alameda Permittees	1 per year
Santa Clara Permittees	1 per year
Contra Costa Permittees	1 per year
San Mateo Permittees	1 per year
Fairfield-Suisun & Vallejo Permittees collectively	1 per 5-year period

iv. Followup – The Permittees shall identify a site as a candidate SSID project when analytical results indicate any of the following:

(1) A toxicity test of growth, reproduction, or survival of any test organism is reported as "fail" in both the initial sampling and a second, followup sampling, and both have ≥ 50% Percent Effect;

(2) A pollutant is present at a concentration exceeding its water quality objective in the Basin Plan;

(3) For pollutants without WQOs, results exceed Probable Effects Concentrations or Threshold Effects Concentrations.[39]

C.8.h. Reporting

i. Water Quality Standard Exceedence – When data collected pursuant to C.8.a.- C.8.g. indicate that discharges are causing or contributing to an exceedance of an applicable water quality standard, the Permittees shall notify the Water Board within no more than 30 days of such a determination and submit a followup report in accordance with Provision C.1 requirements. This reporting requirement shall not apply to continuing or recurring exceedances of water quality standards previously reported to the Water Board or to exceedances of pollutants that are to be addressed pursuant to Provisions C.9 through C.14 of this Order, consistent with Provision C.1.

ii. Electronic Reporting – The Permittees shall submit to the California Environmental Data Exchange Network (CEDEN) all results from monitoring conducted pursuant to Provisions C.8.d. Creek Status, C.8.e. SSID Projects (as applicable), C.8.f. Pollutants of Concern and C.8.g. Pesticides and Toxicity. Data that CEDEN cannot accept are exempt from this requirement.

(1) Data shall be submitted in SWAMP formats and with the quality controls required by CEDEN.

[39] TEC and PEC are found in MacDonald, D.D., G.G. Ingersoll, and T.A. Berger. 2000. Development and Evaluation of Consensus-based Sediment Quality Guidelines for Freshwater Ecosystems. *Archives of Environ. Contamination and Toxicology* 39(1):20–31. More recent TECs and PECs may be used if lower than stated in MacDonald 2000.

(2) Data collected during the previous October 1–September 30 period shall be submitted by March 31 of each year.

iii. Urban Creeks Monitoring Report – The Permittees shall submit a comprehensive Urban Creeks Monitoring Report no later than March 31 of each year, reporting on all data collected during the foregoing October 1–September 30 period. Each Urban Creeks Monitoring Report shall contain summaries of Creek Status, SSID Projects, and Pollutants of Concern Monitoring including, as appropriate, the following:

(1) Immediately following the Table of Contents, a completed Water Year Summary Table that lists each Program's monitoring sites, with a row for each site. The table columns contain: Site ID; creek name; land use; latitude; longitude; bioassessment, nutrient; chlorine; water column toxicity; sediment toxicity and chemistry; pathogens; temperature loggers; and general water quality (sonde data). For each site, list the site information and check the parameters sampled at that site. This will provide a summary of all Creek Status Monitoring conducted that water year.

(2) An SSID status report pursuant to Provision C.8.e.iv.

(3) For all data, a statement of the data quality.

(4) An analysis of the data, which shall include the following:

(a) Identification and analysis of any trends in stormwater or receiving water quality which shall include:

- Calculations of CSCI scores and physical habitat endpoints;
- Comparison of CSCI scores to:
  - Each other;
  - Any applicable, available reference site(s); and
  - Physical habitat endpoints.

(b) A discussion of the data for each monitoring program component, which shall:

- Discuss monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Basin Plan, the Ocean Plan, or the California Toxics Rule or other applicable water quality control plans;
- Where appropriate, develop hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness;
- Identify and prioritize water quality problems;
- Identify potential sources of water quality problems;
- Describe followup actions;
- Evaluate the effectiveness of existing control measures; and
- Identify management actions needed to address water quality problems.

iv. Pollutants of Concern Monitoring Reports – By October 15 of each year of the permit (beginning in 2016), the Permittees shall submit a report describing the allocation of sampling effort for POC monitoring for the forthcoming year (i.e., the water year that began October 1 of that year) and what was accomplished for POC monitoring during the preceding water year. The report shall include (for preceding year and projected for forthcoming year): monitoring locations, number and types of samples collected, purpose of sampling (management question addressed), and analytes measured. Any data not reportable to CEDEN should be included in the following Urban Creeks Monitoring Report due annually on March 31.

v. Integrated Monitoring Report – No later than March 31 of the fifth year of the Permit term, Permittees shall submit an Integrated Monitoring Report in lieu of the annual Urban Creeks Monitoring Report. This report will be part of the next Report of Waste Discharge for the reissuance of this Permit. The Integrated Monitoring Report shall report on all the data collected since the previous Integrated Monitoring Report and shall contain the following:

(1) The Water Year Summary Table, as described in Provision C.8.h.iii, containing information pertaining to the fourth year monitoring data;

(2) A comprehensive analysis of all data collected pursuant to Provision C.8. since the previous Integrated Monitoring Report, and may include other pertinent studies;

(3) For POCs, the report shall include methods, data, calculations, load estimates, and source estimates for each POC parameter, as applicable; and

(4) The Integrated Monitoring Report shall include a budget summary for each monitoring requirement and recommendations for future monitoring.

vi. Standard Report Content – All monitoring reports shall include the following:

(1) The purpose of the monitoring and briefly describe the study design rationale;

(2) Quality Assurance/Quality Control summaries for sample collection and analytical methods, including a discussion of any limitations of the data;

(3) Brief descriptions of sampling protocols and analytical methods;

(4) Sample location description, including water body name and segment and latitude and longitude coordinates;

(5) Sample ID, collection date (and time if relevant), media (e.g., water, filtered water, bed sediment, tissue);

(6) Concentrations detected, measurement units, and detection limits;

(7) Assessment, analysis, and interpretation of the data for each monitoring program component;

(8) A listing of volunteer and other non-Permittee entities whose data are included in the report; and

(9) Assessment of compliance with applicable water quality standards.

C.9. Pesticides Toxicity Control

To prevent the impairment of urban streams by pesticide-related toxicity, the Permittees shall implement a pesticide toxicity control program that addresses, within their jurisdictions, their own and others' use of pesticides that pose a threat to water quality and that have the potential to enter the municipal conveyance system.

This provision implements requirements of the TMDL for Diazinon and Pesticide-Related Toxicity for Urban Creeks in the region. The TMDL includes urban runoff allocations for Diazinon of 100 ng/l and for pesticide-related toxicity of 1.0 Acute Toxicity Units (TUa) and 1.0 Chronic Toxicity Units (TUc) to be met in urban creek waters. U.S. EPA phased out urban uses of diazinon in the mid-2000s, and diazinon is no longer detected in urban creeks in the region. Pesticide-related toxicity continues to occur, because State and federal pesticide regulatory programs, as currently implemented, allow pesticides to be used in ways that cause or contribute to aquatic toxicity. In adopting the TMDL implementation plan, the Water Board recognized that (1) Permittees must control their own use of pesticides, but Permittees are not solely responsible for attaining the allocations, because their authority to regulate others' pesticide use is constrained by federal and State law; and (2) because a realistic date for achieving allocations cannot be discerned given the current framework for pesticide regulation, reviewing the implementation strategy every five years, at permit reissuance, is the appropriate timeline. Accordingly, the Permittees' requirements for addressing the allocations are set forth in the TMDL implementation plan and are included in this provision.

Urban-use pesticides of concern to water quality include: diamides (chlorantraniliprole and cyantraniliprole); diuron, fipronil and its degradates; indoxacarb; organophosphorous insecticides (chlorpyrifos, diazinon, and malathion); pyrethroids (metofluthrin, bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, and permethrin); and carbamates (e.g., carbaryl and aldicarb).

C.9.a. Maintain and Implement an Integrated Pest Management (IPM) Policy or Ordinance and Standard Operating Procedures

All Permittees have developed a pesticide toxicity control program for use of pesticides in municipal operations and on municipal property based on the concepts of IPM[40] and have adopted an IPM policy or ordinance and standard operating procedures to implement the policy or ordinance.

[40] IPM is an ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties. Pesticides are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing only the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment. IPM techniques could include biological controls (e.g., ladybugs and other natural enemies or predators); physical or mechanical controls (e.g., hand labor or mowing, caulking entry points to buildings); cultural controls (e.g., mulching, alternative plant type selection, and enhanced cleaning and containment of food sources in buildings); and reduced risk chemical controls (e.g., soaps or oils).

i. Task Description – The Permittees shall implement their IPM policies or ordinances and standard operating procedures and update their IPM policies or ordinances and standard operating procedures as needed to ensure their use of pesticides do not cause or contribute to pesticide-caused toxicity in receiving waters.

ii. Implementation - Each Permittee shall require municipal employees and contractors to adhere to its IPM policy or ordinance and standard operating procedures in all the Permittee's municipal operations and on all municipal property.

iii. Reporting

(1) In their Annual Reports, the Permittees shall certify they are implementing their IPM policy or ordinance and standard operating procedures, report trends in quantities and types of pesticide active ingredients used, and explain any increases in use of pesticides of concern to water quality as listed in the introduction section of this Provision. Trends and quantities of pesticide active ingredient usage shall be reported beginning with the September 2017 Annual Report.

(2) In their Annual Reports, the Permittees shall provide a brief description (e.g., one or two sentences) of two IPM tactics or strategies implemented in the reporting year. Examples could include non-chemical strategies such as monitoring, mowing weeds, mulching, and redesign of problematic landscapes; preventive actions such as sealing holes and gaps in structures, improving sanitation, and outreach to employees about how their actions contribute to pest presence; and examples of integration of several strategies into a cohesive whole, such as tackling a rat problem by educating building occupants, improving sanitation, trimming trees away from buildings, sealing holes in the structure, and trapping rodents. To the extent possible, different IPM actions should be described each year, so that a range of IPM actions is described over the permit term.

(3) IPM policies or ordinances and IPM standard operating procedures shall be submitted to the Water Board upon request.

C.9.b. Train Municipal Employees

i. Task Description– The Permittees shall ensure that all municipal employees who, within the scope of their duties, apply or use pesticides are trained in IPM practices and the Permittee's IPM policy or ordinance and standard operating procedures. This training may also include other training opportunities such as Bay-Friendly Landscape Maintenance Training & Qualification Program, provided both structural and landscape pest control training are provided.

ii. Reporting

(1) In their Annual Reports, the Permittees shall report the percentage of municipal employees who apply pesticides who have received training in their IPM policy or ordinance and IPM standard operating procedures

within the last year. This report shall briefly describe the nature of the training, such as tailgate training provided by a Permittee's IPM coordinator, IPM training through the Pesticide Applicators Professional Association, etc.

(2) The Permittees shall submit training materials (e.g., course outline, date, and list of attendees) upon request.

C.9.c. Require Contractors to Implement IPM

i. Task Description – The Permittees shall hire IPM-certified contractors or include contract specifications requiring contractors to implement IPM, so that all contractors practice IPM on municipal properties. The Permittees shall observe contractor pesticide applications to verify that contractors implement their contract specifications in accordance with the Permittee's IPM policies or ordinance and standard operating procedures. Permittees shall note that contractor certification as a pest control advisor (PCA) alone is not evidence of IPM implementation. Similarly, IPM certifications awarded to a pest control company may not guarantee an individual employee will always use IPM strategies. Thus, periodic Permittee observation of contractor performance is necessary.

ii. Implementation – Permittees shall periodically monitor their contractors' activities to verify full implementation of IPM techniques. This shall include, at a minimum, evaluation of lists of pesticides and amounts of active ingredient used.

iii. Reporting – In their Annual Reports, the Permittees shall state how they verified contractor compliance with IPM policies and any actions taken or needed to correct contractor performance.

C.9.d. Interface with County Agricultural Commissioners

i. Task Description – The Permittees shall maintain communications with county agricultural commissioners to (a) get input and assistance on urban pest management practices and use of pesticides, (b) inform them of water quality issues related to pesticides, and (c) report any observed or citizen-reported violations of pesticide regulations (e.g., illegal handling and applications of pesticides) associated with stormwater management, particularly the California Department of Pesticide Regulation (DPR) surface water protection regulations for outdoor, nonagricultural use of pyrethroid pesticides by any person performing pest control for hire (http://www.cdpr.ca.gov/docs/legbills/rulepkgs/11-004/text_final.pdf).

ii. Reporting – In their Annual Reports, the Permittees shall briefly describe the communications they have had with county agricultural commissioners and report followup actions to correct violations of pesticide regulations.

C.9.e. Public Outreach

i. Task Description – Permittees shall undertake outreach programs to (a) encourage communities within the Permittee's jurisdiction to reduce their reliance on pesticides that threaten water quality; (b) encourage public and private landscape irrigation management that minimizes pesticide runoff; and (c) promote appropriate disposal of unused pesticides.

ii. Implementation – The Permittees shall conduct each of the following:

(1) **Point of Purchase Outreach**: The Permittees shall:

- Conduct outreach to consumers at the point of purchase;
- Provide targeted information on proper pesticide use and disposal, potential adverse impacts on water quality, and less toxic methods of pest prevention and control; and
- Participate in and provide resources for the "Our Water, Our World" program or a functionally-equivalent pesticide use reduction outreach program.

(2) **Pest Control Contracting Outreach:** The Permittees shall conduct outreach to residents who use or contract for structural pest control and landscape professionals by (a) explaining the links between pesticide usage and water quality; and (b) providing information about IPM in structural pest management certification programs and landscape professional trainings; and (c) disseminating tips for hiring structural pest control operators and landscape professionals, such as the tips prepared by the University of California Extension IPM Program (UC-IPM).

(3) **Outreach to Pest Control Professionals:** The Permittees shall conduct outreach to pest control operators, urging them to promote IPM services to customers and to become IPM-certified by Ecowise Certified or a functionally-equivalent certification program. Permittees are encouraged to work with the Pesticide Applicators Professional Association; the California Association of Pest Control Advisors; DPR; county agricultural commissioners; UC-IPM; BASMAA; EcoWise Certified Program (or functionally equivalent certification program); Bio-integral Resource Center and others to promote IPM to pest control operators.

iii. Reporting – In each Annual Report, Permittees shall describe their actions taken in the three outreach categories above. Outreach conducted at the county or regional level shall be described in Annual Reports prepared at that respective level; reiteration in individual Permittee reports is discouraged. Reports shall include a brief description of outreach conducted in each of the three categories, including level of effort, messages and target audience. (The effectiveness of outreach efforts shall be evaluated only once in the Permit term, as required in Provision C.9.f.).

C.9.f. Track and Participate in Relevant Regulatory Processes

i. Task Description – The Permittees shall conduct the following activities, which may be done at a county, regional, or state wide level:

(1) The Permittees shall track U.S. EPA pesticide evaluation and registration activities as they relate to surface water quality and, when necessary, encourage U.S. EPA to coordinate implementation of the Federal Insecticide, Fungicide, and Rodenticide Act and the CWA and to accommodate water quality concerns within its pesticide registration process;

(2) The Permittees shall track DPR pesticide evaluation activities as they relate to surface water quality and, when necessary, encourage DPR to coordinate implementation of the California Food and Agriculture Code with the California Water Code and to accommodate water quality concerns within its pesticide evaluation process;

(3) The Permittees shall assemble and submit information (such as monitoring data) as needed to assist DPR and county agricultural commissioners in ensuring that pesticide applications comply with WQS; and

(4) As appropriate, the Permittees shall submit comment letters on U.S. EPA and DPR re-registration, re-evaluation, and other actions relating to pesticides of concern for water quality.

ii. Reporting – In their Annual Reports, the Permittees shall summarize participation efforts, information submitted, and how regulatory actions were affected. Permittees who contribute to a county, regional, or state wide effort shall submit one report at the county or regional level. Duplicate reporting is discouraged.

C.9.g. Evaluate Implementation of Pesticide Source Control Actions

i. Task Description – This task is necessary to gauge how effective the implementation actions taken by Permittees are in (a) achieving TMDL targets and (b) avoiding future pesticide-related toxicity in urban creeks. Once during the permit term, Permittees shall conduct a thoughtful evaluation of their IPM efforts, how effective these efforts appear to be, and how they could be improved.

ii. Implementation – The Permittees shall evaluate the effectiveness of the pesticide control measures implemented by their staff and contractors, evaluate attainment of pesticide concentration and toxicity targets for water and sediment from monitoring data (collected by Permittees, research agencies, and/or State agencies), and identify additions and/or improvements to existing control measures needed to attain targets, with an implementation time schedule.

iii. Reporting – In their 2019 Annual Reports, the Permittees shall submit this evaluation, which shall include an assessment of the effectiveness of their IPM efforts required in Provisions C.9.a-e and g; a discussion of any improvements

made in these efforts in the preceding five years; and any changes in water quality regarding pesticide toxicity in urban creeks. This evaluation shall also include a brief description of one or more pesticide-related area(s) the Permittee will focus on enhancing during the subsequent permit term. Work conducted at the county or regional level shall be evaluated at that respective level; reiteration in individual Permittee evaluation reports is discouraged.

C.10. Trash Load Reduction

The Permittees shall demonstrate compliance with Discharge Prohibition A.1, for trash discharges, Discharge Prohibition A.2, and trash-related Receiving Water Limitations through the timely implementation of control measures and other actions to reduce trash loads from municipal separate storm sewer systems in accordance with the requirements of this provision. Flood management agencies are not subject to these trash reduction requirements except for continued implementation of requirements for trash full capture systems and Trash Hot Spot cleanups, as specified in subsections C.10.b.i and C.10.c.

C.10.a. Trash Reduction Requirements

Permittees shall implement trash load reduction control actions in accordance with the following schedule and trash generation area management requirements, including mandatory minimum full trash capture systems, to meet the goal of 100 percent trash load reduction or no adverse impact to receiving waters from trash by July 1, 2022.

i. Schedule – Permittees shall reduce trash discharges from 2009 levels, described below, to receiving waters in accordance with the following schedule:

a. 70 percent by July 1, 2017; and
b. 80 percent by July 1, 2019.

In addition, Permittees should achieve 60 percent reduction by July 1, 2016. This is not a mandatory deadline; rather, it shall be used as a performance guideline to meet the mandatory July 1, 2017 deadline. Permittees that do not attain the 60 percent performance guideline shall submit documentation of a plan and schedule of implementation of additional trash load reduction control actions that will attain the July 1, 2017 deadline.

ii. Trash Generation Area Management – Permittees shall demonstrate attainment of the C.10.a.i trash discharges percentage-reduction requirements by management of mapped trash generation areas within their jurisdictions delineated on Trash Generation Area Maps included with their Long Term Trash Reduction Plans, submitted in February 2014, in accordance with the requirements and accounting set forth in this provision. The February 2014 maps provide the 2009 trash levels and delineate trash generation areas within Permittees' jurisdictions into the following trash generation rate categories

Low = less than 5 gal/acre/yr;
Moderate = 5-10 gal/acre/yr;
High = 10-50 gal/acre/yr; and
Very High = greater than 50 gal/acre/yr.

Permittees also designated trash management areas on their February 2014 maps encompassing one or more trash generation areas, within which they will implement trash control actions. Permittees shall have an opportunity to correct and/or revise, based on improved information, the 2009 trash levels and trash generation areas in their February 2014 maps by submitting the correction and/or revision no later than the 2016 Annual Report deadline.

a. Permittees shall implement trash prevention and control actions, including full trash capture systems or other trash management actions, or combinations of actions, with trash discharge control equivalent to or better than full trash capture systems, to reduce trash generation to a Low trash generation rate or better. Actions equivalent to full trash capture means actions that send no more trash down the storm drain system than a full trash capture device would allow, which is essentially no trash discharge except in very large storm flows. The C.10.a.i percent reductions shall be demonstrated by percent of 2009 Very High, High, and Moderate trash generation areas reduced to lower trash generation categories or Low trash generation by the C.10.a.i mandatory deadlines.

b. Permittees shall ensure that lands that they do not own or operate, but that are plumbed directly to their storm drain systems in Very High, High, and Moderate trash generation areas are equipped with full trash capture systems or are managed with trash discharge control actions equivalent to or better than full trash capture systems. The efficacy of the latter shall be assessed with visual assessments in accordance with C.10.b.ii. If there is a full trash capture device downstream of these lands, no other trash control is required. Permittees shall map the location, or otherwise record the location, of all such lands greater than 10,000 ft^2 that are plumbed directly to their storm drain systems by July 1, 2018, including the trash control status of these areas. This information shall be retained by the Permittees for inspection upon request.

iii. Mandatory Minimum Full Trash Capture Systems - Permittees shall install and maintain a mandatory minimum number of full trash capture devices, to treat runoff from an area equivalent to 30 percent of retail/wholesale land area, as documented by the Association of Bay Area Governments, which drains to the storm drain system within their jurisdictions. A city Permittee with a population less than 12,000 and retail/wholesale land less than 40 acres, or a population less than 2,000, is exempt from this full trash capture requirement. Table 2 in Attachment E contains the minimum amount of drainage areas that must be treated with full trash capture devices by each city or county Permittee, and the minimum number of trash capture devices required to be installed and maintained by flood management agency Permittees.

A full capture system is any single device or series of devices that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate resulting from a one-year, one-hour, storm in the sub-drainage area or designed to carry at least the same flow as the storm drain connected to the inlet. The device(s) must also have a trash reservoir large enough to contain a reasonable amount of trash safely without overflowing trash into the overflow outlet between maintenance events. Types of systems certified by the State Water Resources Control Board are deemed full capture systems. A stormwater treatment facility implemented in accordance with Provision C.3 is also deemed a full capture system if the facility, including its maintenance prevents the discharge of trash to the downstream MS4 and receiving waters

and discharge points from the facility, including overflows, are appropriately screened or otherwise configured to meet the full trash capture screening specification for storm flows up to the full trash capture one year, one hour storm hydraulic specification (C.10.a.iii.).

C.10.b. Demonstration of Trash Reduction Outcomes

i. Full Trash Capture Systems – Permittees shall maintain, and provide for inspection and review upon request, documentation of the design, operation, and maintenance of each of their full trash capture systems, including the mapped location and drainage area served by each system.

a. **Maintenance** – The maintenance of each full capture device shall be adequate to prevent plugging, including plugging of the 5 mm screen leading to trash overflow and bypass, flooding, or a full condition of the device's trash reservoir causing bypassing of trash. All full trash capture devices shall be inspected and maintained at least once per year. All such devices in high or very high trash generation areas shall be inspected at least two times per year, with the inspections spaced at least three months or more apart. If this frequency of inspection is found excessive after two inspections, the inspection frequency can be reduced to once per year.

If any such device is found to have a plugged or blinded screen or is greater than 50 percent full of trash during a maintenance event, the maintenance frequency shall be increased so that the device is neither plugged nor more than half full of trash at the next maintenance event.

b. **Maintenance Records** – Permittees shall retain device specific maintenance records, including, at a minimum: the date(s) of maintenance, the capacity condition of the device at the time of maintenance (full and overflowing or with storage capacity remaining), any special problems such as flooding, screen blinding or plugging from leaves, plastic bags, or other debris causing overflow, damage reducing function, or other negative conditions. A summary of this information shall be reported in each Annual Report which may be limited to the number of full capture devices maintained that exhibited a plugged, full or overflowing condition upon maintenance.

c. **Certification** – Permittees shall certify annually that each of their full trash capture systems is operated and maintained to meet full trash capture system requirements. Drainage areas served by an adequately maintained full trash capture system will be considered equivalent to or better than a Low trash generation area.

ii. Other Trash Management Actions – Permittees shall maintain, and provide for inspection and review upon request, documentation of non-full trash capture system trash control actions that verifies implementation of each action. Permittees shall also conduct assessment of the action that verifies effectiveness of the action or combination of actions and maintain, and provide for inspection and review upon request, documentation of assessments.

a. **Implementation Documentation** – Permittees shall maintain documentation of trash control actions that describes each action or combination of actions, the level of implementation, the timing and frequency of implementation, standard operating procedures if applicable, location(s) of implementation actions including mapped location(s) and drainage area(s) affected or description of areal extent, tracking and enforcement procedures if applicable, and other information relevant to effective implementation of the action or combination of actions.

b. **Visual Assessment of Outcomes of Other Trash Management Actions** – Permittees shall conduct visual on-land assessment, including photo documentation, or other acceptable assessment method (see C.10.b.ii.b.(iv.)), of each trash generation area within which it is implementing other trash management actions or combination of actions other than full trash capture, to determine or verify the effectiveness of the action or combination of actions. Permittees may assess and account for one or more trash generation areas in a single trash management area within which a control action or combination of control actions is implemented. The visual on-land assessment method used shall meet or exceed the following criteria:

(i) Conduct observations within a trash management area of the sidewalk, curb and gutter, or locations associated with trash generation sources.

(ii) Conduct observations at randomly selected locations covering at least ten percent of a trash management area's street miles; or conduct observations at strategic locations with justification they are representative of trash generation in the management area and they will represent the effectiveness of the control action(s) implemented or planned in the management area.

(iii) Conduct observations at a frequency consistent with known or estimated trash generation rate(s) within a trash management area and the time frequency of implementation of the control action(s) implemented or planned in the management area. Conduct observations for effectiveness approximately at the halfway point of the interval between instances of recurring trash control actions such as street sweeping and on-land cleanup.

(iv) Permittees may put forth substantive and credible evidence that certain management actions or sets of management actions when performed to a specified performance standard yield a certain trash reduction outcome reliably. Such a proposal shall be made to the Executive Officer as a submittal separate from any other submittals or reports. If this evidence is accepted by the Executive Officer, the Permittees may claim a similar trash reduction outcome by demonstrating that they have performed these trash reduction actions within certain trash management areas to the same performance standard accepted by the Executive Officer.

iii. Percentage Discharge Reduction – Percentage discharge reduction from 2009 from Very High generation areas reduced to High, Moderate, and Low, High

generation areas reduced to Moderate and Low, and Moderate trash generation areas reduced to Low trash generation category to meet the required total percent reduction ($\%_{Reduction}$) shall be calculated based on the following formula:

$$\% \text{ Reduction} = 100\ [(12A_{VH(2009)} + 4A_{H(2009)} + A_{M(2009)}) - (12A_{VH} + 4A_{H} + A_{M})] / (12A_{VH2009} + 4A_{H2009} + A_{M2009})$$

where:

$A_{VH(2009)}$	=	total amount of the 2009 very high trash generation category jurisdictional area
$A_{H(2009)}$	=	total amount of the 2009 high trash generation category jurisdictional area
$A_{M(2009)}$	=	total amount of the 2009 moderate trash generation category jurisdictional area
A_{VH}	=	total amount of very high trash generation category jurisdictional area in the reporting year
A_{H}	=	total amount of high trash generation category jurisdictional area in the reporting year
A_{M}	=	total amount of moderate trash generation category jurisdictional area in the reporting year
12	=	Very High to Moderate weighing ratio
4	=	High to Moderate weighing ratio
100	=	fraction to percentage conversion factor

iv. Source Control – Permittee jurisdiction-wide actions to reduce trash at the source, particularly persistent trash items, may be valued toward trash load reduction compliance by up to ten percent load reduction total for all such actions. To claim a load percentage reduction value, Permittees must provide substantive and credible evidence that these actions reduce trash by the claimed value. A Permittee may reference studies in other jurisdictions if it provides evidence that the implementation of source control in its jurisdiction is similarly implemented as the source control assessed in the reference studies.

v. Receiving Water Monitoring – Permittees shall conduct receiving water monitoring and develop receiving water monitoring tools and protocols and a monitoring program designed, to the extent possible, to answer the following questions:

- Have a Permittee's trash control actions effectively prevented trash within a Permittee's jurisdiction from discharging into receiving water(s)?
- Is trash present in receiving water(s), including transport from one receiving water to another, e.g., from a creek to a San Francisco Bay segment, at levels that may cause adverse water quality impacts?
- Are trash discharges from a Permittee's jurisdiction causing or contributing to adverse trash impacts in receiving water(s)?
- Are there sources outside of a Permittee's jurisdiction that are causing or contributing to adverse trash impacts in receiving water(s)?

The monitoring tools and protocols shall include direct measurements and/or observations of trash in receiving water(s), or in scenarios where direct measurements or observations are not feasible, surrogates for trash in receiving waters, such as measurement or observations of trash on stream banks or shorelines.

a. **Development and Testing Plan** – Permittees shall submit a plan acceptable to the Executive Officer by July 1, 2017, to develop and test a proposed receiving water monitoring program that includes the following:
   (i) Description of the tools and protocols;
   (ii) Description of discharge and receiving water scenarios, which will be considered, that accounts for the various receiving waters and watershed, community, and drainage characteristics within Permittees' jurisdictions that affect the discharge of trash and its fate and effect in receiving water(s);
   (iii) Description of factors, in addition to those in C.10.b.v.a.(ii), that will be considered and evaluated to determine scenarios and spatial and temporal representativeness;
   (iv) Identification of sites, representative of all the Permittees and discharge and receiving water scenarios, that will be monitored during this permit term;
   (v) Development of a system to manage and access monitoring results;
   (vi) Opportunity for input and participation by interested parties;
   (vii) Scientific peer review of the tools and protocols and testing results; and
   (viii) Schedule for development and testing; with monitoring at representative sites starting no later than October 2017.

   If the Permittees conduct this work through an independent third party, approved by the Executive Officer, the Plan may be submitted by July 2018, with monitoring to begin no later than October 2018.

b. **Report and Proposed Monitoring Program** – Permittees shall report progress in the 2018 Annual Report, and submit a preliminary report by July 1, 2019 and a final report by July 1, 2020 on the proposed trash receiving water monitoring program. The progress report is not required if the Permittees conduct this work through an independent third party, approved by the Executive Officer, that provides input and participation by interested parties and scientific peer review of the tools and protocols and testing results and proposed receiving monitoring program.

C.10.c. Trash Hot Spot Selection and Cleanup

Trash Hot Spots in receiving waters shall be cleaned annually to achieve the multiple benefits of abatement of impacts and to learn more about the sources and transport routes of trash loading.

i. Trash Hot Spot Cleanup and Definition – The Permittees shall clean selected Trash Hot Spots to a level of "no visual impact" at least one time per year for the

term of the permit. Trash Hot Spots shall be sections of creek or shoreline significantly impacted by trash of at least 100 yards of creek length or 200 yards of shoreline length.

ii. Trash Hot Spot Selection – Permittees shall maintain the same number of trash hot spots identified in the previous permit term, which are included in Attachment E. Permittees may select new trash hot spot locations if past locations are no longer trash hotspots or if other locations may better align with trash management areas.

iii. Trash Hot Spot Assessments – The Permittees shall quantify the volume of material removed from each Trash Hot Spot cleanup and attempt to identify sources to the extent readily feasible. Documentation of the cleanup activity to be retained by the Permittee shall include the trash condition before and after cleanup of the entire hot spot using photo documentation with a minimum of one photo per 100 feet of hot spot length and the total volume of trash and litter removed from the hot spot. Permittees shall report the volume removed for the most recent five years of hot spot cleanup in each Annual Report, or if a new trash hot spot location is selected, Permittees shall report the volume removed for the years of cleanup of that hotspot.

C.10.d. Trash Load Reduction Plans

Each Permittee shall maintain, and provide for inspection and review upon request, a Trash Load Reduction Plan, including an implementation schedule to meet the C.10.a Trash Load Reduction requirements. A summary of any new revisions to the Plan shall be included in the Annual Report. The Plan shall describe trash load reduction control actions being implemented or planned and the trash generation areas or trash management areas where the actions are or will be implemented, including jurisdiction-wide actions, such as source control ordinances

The Plans may include actions to control sources outside of the Permittee's jurisdiction that are causing or contributing to adverse trash impacts in the receiving water(s). Permittees who choose to implement such control actions may account for them towards meeting the C.10.a Trash Load Reduction requirements as long as they can demonstrate the controls will be sustained and they quantify the sustained load reduction benefit relative to control actions in the trash generation areas or trash management areas in their jurisdiction that drained to the affected receiving water.

C.10.e. Optional Trash Load Reduction Offset Opportunities

i. Additional Creek and Shoreline Cleanup – A Permittee may offset part of its provision C.10.a trash load percent reduction requirement by conducting additional cleanup of creek and shoreline areas beyond trash hot spot cleanups required by C.10.c if the additional cleanup efforts are conducted at a frequency of at least twice per year and sufficient to demonstrate sustained improvement of the creek or shoreline area. The maximum offset that may be claimed is ten percent.

A Permittee may claim a load reduction offset of one percent for each total of trash volume removed from additional cleanups that is three and a third percent

for the 2016 performance guideline and 2017 mandatory trash load reduction deadline, and ten percent for the 2019 mandatory trash load reduction deadline, of the Permittee's 2009 trash load volume estimates, based on its trash generation maps and average categorical trash generation rates (see C.10.a.ii), in accordance with the following formula:

1% Reduction Offset (Volume) = $(12\ A_{VH(2009)} + 4\ A_{H(2009)} + A_{M(2009)})$ OF

where:

$A_{VH(2009)}$	=	total amount of 2009 very high trash generation category jurisdictional area
$A_{H(2009)}$	=	total amount of 2009 high trash generation category jurisdictional area
$A_{M(2009)}$	=	total amount of 2009 moderate trash generation category jurisdictional area
12	=	Very High to Moderate weighing ratio
4	=	High to Moderate weighing ratio
OF	=	offset factor equal to (7.5 x 0.033) for the 2016 performance guideline and 2017 mandatory trash load reduction deadline, where 7.5 is the conversion from acres to gallons based on trash generation rates and 0.033 is the three to one offset ratio, or (7.5 x 0.1) for the 2019 mandatory trash load reduction deadline, where 7.5 is the conversion from acres to gallons based on trash generation rates and 0.1 is the ten to one offset ratio.

ii. Direct Trash Discharge Controls – A Permittee may offset an additional part of its provision C.10.a trash load percent reduction requirement by implementing a comprehensive plan approved by the Executive Officer for control of direct discharges of trash to receiving waters from non-storm drain system sources. The maximum offset that may be claimed is fifteen percent using the C.10.e.i formula. The plan shall be submitted not later than February 1 of the first year in which the offset will be reported in the following Annual Report and shall include the following:

a. description of sources of the directly discharged trash;
b. description of control actions that will be implemented during the permit term to prevent or reduce direct discharge trash loads in a systematic and comprehensive manner;
c. map of the affected receiving water area and associated watershed; and
d. description of how effectiveness of controls will be assessed, including documentation of controls, quantification of trash volume controlled, and assessment of resulting improvements to receiving water conditions.

C.10.f. Reporting

Each Permittee shall provide the following in each Annual Report:

i. A summary of trash control actions within each trash management area, including the types of actions, levels of implementation, areal extent of implementation, and whether the actions are ongoing or new, including initiation date.

ii. Upon request by the Executive Officer, an updated trash generation area map or maps, which include trash management areas, including the locations and associated drainage areas and of full trash capture systems and other trash control actions, and the location of Trash Hot Spots, with highlight or other indication of any revisions or changes from the previous year map(s). These maps can be used to illustrate progress toward achieving the trash reduction requirements in C.10.a.i.

iii. Should a Permittee correct and/or revise its 2009 trash generation map submitted in February 2014, the corrected or revised 2009 trash generation map shall be submitted in the 2016 Annual Report, if the Permittee has not already submitted the corrected or revised map. Certification that each of its full trash capture systems is operated and maintained to meet full trash capture system requirements; a description of any systems that did not meet full trash capture system requirements (e.g., due to plugging or overflowing); and any corrective actions taken.

iv. An accounting of its non-full trash capture system trash control actions assessments by providing a summary description of assessments in each of its trash management areas, including the number and dates of observations.

v. An accounting of progress toward or attainment of C.10.a.i trash discharge reduction performance guidelines and mandatory deadlines using the C.10.a.ii trash generation area mapping methodology and formula.

a. If a Permittee cannot demonstrate attainment of the 2016 performance guideline, it shall submit a detailed plan and schedule of implementation of additional trash load reduction control actions that will attain the 2017 mandatory deadline.

b. If a Permittee cannot demonstrate attainment of the 2017 or 2019 mandatory trash load reduction deadline, it shall submit a report of non-compliance with the associated Annual Report, or in advance of the Annual Report, that describes actions to comply with the mandatory reduction deadline in a timely manner. The report shall include a plan and schedule for implementation of full trash capture systems sufficient to attain the required reduction. A Permittee may submit a plan and schedule for implementation of other trash management actions to attain the required reduction in an area where implementation of a full trash capture system is not feasible. In such cases, the report shall include identification of the area and documentation of the basis of the Permittee's determination that implementation of a full trash capture system is not feasible.

vi. In the 2018 Annual Report, progress on development and testing of the receiving water monitoring program.

vii. The volume removed for the most recent five years of hot spot cleanup for each of its trash hot spots, or for the years of cleanup if a new trash hot spot location has been selected.

viii. For Permittees claiming a C.10.e.i offset, based on additional cleanup of creek and shoreline areas, a summary description of the additional cleanup actions.

ix. For Permittees claiming a C.10.e.ii offset, based on non-storm drain system trash controls, a summary description of control actions receiving water assessment results, quantification of trash volume controlled, and assessment of resulting improvements in receiving water condition, the claimed offset and documentation of information used in the C.10.e.i formula.

C.11. Mercury Controls

The Permittees shall implement the following control program for mercury. The Permittees shall perform the control measures (source control, treatment control, and pollution prevention strategies) and report on those control measures according to the provisions below. The provisions implement the urban runoff requirements of the San Francisco Bay and Guadalupe River Watershed mercury TMDLs and reduce mercury loads to make substantial progress toward achieving the urban runoff mercury load allocations established for the TMDLs. The aggregate, regionwide, urban runoff wasteload allocation from the San Francisco Bay mercury TMDL is 82 kg/yr. The TMDL implementation plan calls for attainment of the allocation by February 2028 and, as a way to measure progress, attainment of an interim loading milestone by February 2018 of 120 kg/yr, halfway between the 2003 estimated load, 160 kg/yr, and the aggregate allocation. The Permittees may comply with any requirement of this provision through a collaborative effort.

C.11.a. Implement Control Measures to Achieve Mercury Load Reductions

i. Task Description – Permittees shall implement mercury source and treatment control measures and pollution prevention strategies to reduce mercury loads throughout the area covered by this Permit (permit-area).

ii. Implementation level – To comply with this provision element, Permittees shall:

(1) Identify the watersheds or portions of watersheds (management areas) in which mercury control measures are currently being implemented and those in which new control measures will be implemented during the term of this Permit (many or most may be the same watersheds as those identified for C.12.a.ii(1));

(2) Identify the control measures that are currently being implemented and those that will be implemented in each watershed and management area (may be the same as those identified for C.12.a.ii(2));

(3) Submit a schedule of control measure implementation; and

(4) Implement mercury source and treatment control measures and pollution prevention strategies and quantify mercury load reductions achieved by using the accounting methods established according to provision C.11.b.

iii. Reporting

(1) The Permittees shall report by April 1, 2016, progress toward developing a list of the watersheds and management areas where mercury control measures are currently being implemented and those in which control measures will be implemented (C.11.a.ii(1)) during the term of this Permit as well as the monitoring data and other information used to select these watersheds and management areas.

(2) The Permittees shall report in their 2016 Annual Report the list of watersheds and management areas where control measures are currently being implemented or will be implemented during the term of the Permit (C.11.a.ii(1)) along with the specific control measures (C.11.a.ii(2)) that are currently being implemented and those that will be implemented in these watersheds and management areas and an implementation schedule (C.11.a.ii(3)) for these control measures. In addition to the list of watersheds and management areas, this report shall include:

a. The number, type, and locations and/or frequency (if applicable) of control measures;

b. The description, scope, and start date of pollution prevention measures;

c. For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural BMPs or other relevant implementation milestones for structural and non-structural BMPs) and a schedule for milestone achievement; and

d. Clear statements of the roles and responsibilities of each participating Permittee for implementation of pollution prevention or control measures identified under C.11.a.ii(2).

(3) Beginning with the 2017 Annual Report and continuing in all Annual Reports, Permittees shall update all the information required under C.11.a.iii(2) as necessary to account for new control measures implemented, but not described, in the 2016 Annual Report.

C.11.b. Assess Mercury Load Reductions from Stormwater

i. Task Description – The Permittees shall develop and implement an assessment methodology and data collection program to quantify in a technically sound manner mercury loads reduced through implementation of pollution prevention, source control, and treatment control measures, including mercury source control, stormwater treatment, green infrastructure, and other measures. The Permittees shall use the assessment methodology to demonstrate progress toward achieving the load reductions required in this Permit term and the program area wasteload allocations.

A reasonable and technically sound load reduction accounting system is described in the Fact Sheet and is based on information submitted by the Permittees in the January 2014 Integrated Monitoring Report. This task consists of documenting the method described in the Fact Sheet or any alternative methodology, updating and refining the accounting system to account for new information, justifying assumptions, analytical methods, sampling schemes and parameters used to quantify the load reduction for each type of control measure, and indicating what information will be collected and submitted to confirm the calculated load reduction for each control measure implemented.

ii. Implementation Level – The Permittees shall adequately quantify the mercury load reductions achieved through implementing pollution prevention, source control, and treatment control efforts.

iii. Reporting

(1) In their 2016 Annual Report the Permittees shall submit, for Executive Officer approval, the assessment methodology and data collection program required in C.11.b.i.

(2) Beginning with the 2017 Annual Report, Permittees shall report annually the loads reduced using the default (from Fact Sheet) or alternative approved assessment methodology to demonstrate cumulative mercury load reduced from each control measure implemented since the beginning of the Permit term. Permittees shall submit all supporting data and information necessary to substantiate the load reduction estimates, including appropriate reference to the control measures described in the reporting required under C.11.a.

(3) In their 2018 and subsequent Annual Reports, the Permittees shall submit, for Executive Officer approval, any refinements, if necessary, to the measurement and estimation methodologies to assess mercury load reductions in the subsequent permit.

C.11.c. Plan and Implement Green Infrastructure to reduce mercury loads

i. Task Description – Permittees shall implement green infrastructure projects during the term of the Permit to achieve the mercury load reductions performance criteria in Table 11.1. Green infrastructure projects on both public and private land can serve to achieve this load reduction requirement. Additionally, Permittees shall prepare a reasonable assurance analysis (see below and Fact Sheet) to demonstrate quantitatively that mercury load reductions of at least 10 kg/yr will be achieved by 2040 through implementation of green infrastructure throughout the permit-area.

ii. Implementation Level

(1) The Permittees shall implement sufficient green infrastructure projects so that mercury loads are collectively reduced by 48 g/yr by June 30, 2020, which shall be extended to December 31, 2020, if the Permittees provide documentation that control measures that will attain the load reduction will be implemented by December 31, 2020. Permittees shall demonstrate achievement of these load reductions by using the accounting methods approved under provision C.11.b.iii(1). Load reductions from green infrastructure projects implemented prior to the effective date of this Permit may be counted toward the required green infrastructure reductions of this Permit term if these projects were established and implemented during the Previous Permit term, but load reductions from the activity were not realized or credited during the Previous Permit term.

The Permittees may meet the load reduction as a group. The load reduction requirements summed over all Permittees within each county are set forth in Table 11.1. If neither the permit-area-wide total load reduction nor the county-specific load reduction is achieved, Permittees shall achieve load reductions consistent with their share of the county total. The individual Permittee share of the county load reduction is the proportion of county population in each municipality.

If all the Permittees in a county wish to use an alternative method of distributing the county load reductions, these Permittees shall report through their countywide stormwater programs on their alternative method (if different from default population-based method) for assigning Permittee-specific load fractions in the 2017 Annual Report. This can be determined by the Permittees within the counties and may be different from one county to the next, but all Permittees within a county shall use the same method of distributing the county load reductions. Any acceptable alternative load reduction criteria must be approved through an amendment of this Permit.

Table 11.1 Mercury Load Reduction Performance Criteria via Green Infrastructure Implementation by County

County Permittees	**Mercury Load Reduction (g/yr) by June 30, 2020, through green infrastructure**
Alameda Permittees	15
Contra Costa Permittees	9
San Mateo Permittees	6
Santa Clara Permittees	16
Solano Permittees: Suisun City, Vallejo, Fairfield	2
Totals	**48**

(2) Permittees shall prepare a reasonable assurance analysis of future mercury load reductions by doing the following:

a. Quantify the relationship between areal extent of green infrastructure implementation and mercury load reductions. This quantification should take into consideration the scale of contamination of the treated area as well as the pollutant removal effectiveness of likely green infrastructure strategies.

b. Estimate the amount and characteristics of land area that will be treated through green infrastructure by 2020, 2030, and 2040.

c. Estimate the amount of mercury load reductions that will result from green infrastructure implementation by 2020, 2030, and 2040.

d. Quantitatively demonstrate that mercury reductions of at least 10 kg/yr will be realized by 2040 through implementation of green infrastructure projects.
e. Ensure that the calculation methods, models, model inputs, and modeling assumptions used to fulfill C.11.c.ii(2)(a-d) have been validated through a peer review process.

iii. Reporting

(1) The Permittees shall submit in their 2018 Annual Report, as part of reporting for C.11.b.iii(2), the quantitative relationship between green infrastructure implementation and mercury load reductions. This submittal shall include all data used and a full description of models and model inputs relied on to establish this relationship.

(2) The Permittees shall submit in their 2020 Annual Report an estimate of the amount and characteristics of land area that will be treated through green infrastructure implementation by 2020, 2030, and 2040. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.

(3) The Permittees shall submit in their 2020 Annual Report a reasonable assurance analysis to demonstrate quantitatively that mercury reductions of at least 10 kg/yr will be realized by 2040 through implementation of green infrastructure projects. This submittal shall include all data used and a full description of models and model inputs relied on to make the demonstration and documentation of peer review of the reasonable assurance analysis.

(4) The Permittees shall submit as part of reporting for C.11.b.iii(2), beginning with their 2019 Annual Report, an estimate of the amount of mercury load reductions resulting from green infrastructure implementation during the term of the Permit. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.

(5) All Permittees in a county may submit, in the 2017 Annual Report, an alternative (different from the population-based default described in C.11.c.ii(1)) and supporting information to derive Permittee-specific proportions of load reduction criteria.

C.11.d. Prepare Implementation Plan and Schedule to Achieve TMDL Allocations

i. Task Description – Permittees shall prepare a plan and schedule for mercury control measure implementation and reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the mercury TMDL wasteload allocations by 2028. This plan may share many elements of a similar plan developed for PCBs according to Provision C.12.d.

ii. Implementation level – Permittees shall prepare a mercury control measure implementation plan and corresponding reasonable assurance analysis that demonstrates quantitatively that the plan will result in mercury load reductions sufficient to attain the mercury TMDL wasteload allocations by 2028. The plan must:

(1) Identify all technically and economically feasible mercury control measures (including green infrastructure projects) to be implemented;

(2) Include a schedule according to which these technically and economically feasible control measures will be fully implemented; and

(3) Provide an evaluation and quantification of the mercury load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.

iii. Reporting

Permittees shall submit the plan and schedule in the 2020 Annual Report.

C.11.e. Implement a Risk Reduction Program

i. Task Description – The Permittees shall conduct an ongoing risk reduction program to address public health impacts of mercury in San Francisco Bay/Delta fish. The fish risk reduction program shall take actions to reduce actual and potential health risks in those people and communities most likely to consume San Francisco Bay-caught fish, such as subsistence fishers and their families. The risk reduction framework developed in the Previous Permit term, which funded community-based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach.

ii. Implementation Level

(1) At a minimum, Permittees shall conduct or cause to be conducted an ongoing risk reduction program with the potential to reach 3000 individuals annually who are likely consumers of San Francisco Bay-caught fish. Permittees are encouraged to collaborate with San Francisco Bay industrial and wastewater discharger agencies in meeting this requirement.

(2) In year four of the permit term, Permittees shall evaluate the effectiveness of their risk reduction program.

iii. Reporting – The Permittees shall report on the status of the risk reduction program in each of their Annual Reports, including a brief description of actions taken, an estimate of the number of people reached, and why these people are deemed likely to consume Bay fish. The Permittees shall report the findings of the effectiveness evaluation of their risk reduction program in their 2020 Annual Report.

C.12. Polychlorinated Biphenyls (PCBs) Controls

The Permittees shall implement the following control program for PCBs. The Permittees shall implement PCBs control measures (source control, treatment control, and pollution prevention strategies) in areas where benefits are most likely to accrue (focused implementation) and report on those control measures according to the provisions below. The provisions implement the urban runoff requirements of the PCBs TMDL. Permittees shall reduce PCBs loads by a specified amount during the term of the Permit, thereby making substantial progress toward achieving the urban runoff PCBs wasteload allocation in the Basin Plan. The allocation, on an aggregate and regionwide basis, is 2 kg/yr (1.6 kg/yr allocated to Permittees) to be achieved by March 2030. This wasteload allocation represents a load reduction from all urban runoff sources to the Bay of approximately 18 kg/yr (14.4 kg/yr from Permittees) compared to loads estimated using data collected in 2003. The Permittees may comply with any requirement of this Provision through a collaborative effort.

C.12.a. Implement Control Measures to Achieve PCBs Load Reductions.

i. Task Description – Permittees shall implement PCBs source and treatment control measures and pollution prevention strategies to achieve PCBs load reductions in Table 12.1 throughout the area covered by this Permit (permit-area).

ii. Implementation level –To comply with this provision element, Permittees shall:

(1) Identify the watersheds or portions of watersheds (management areas) in which PCBs control measures are currently being implemented and those in which new control measures will be implemented during the term of this permit;

(2) Identify the control measures that are currently being implemented and those that will be implemented in each watershed and management area;

(3) Submit a schedule of control measure implementation; and

(4) Implement sufficient control measures to achieve the permit-area-wide reduction stated below or the county-specific load reduction performance criteria shown in Table 12.1. The Permittees shall demonstrate achievement of these load reductions as required in provision C.12.b. Load reductions from control measures implemented prior to the effective date of this Permit may be counted toward the required reductions of this Permit term if these control measures were established or implemented during the Previous Permit term, but load reductions from the activity were not realized or credited during the Previous Permit term (e.g., they were implemented after the 2014 Integrated Monitoring Report was submitted).

For all Permittees combined, these county-specific average annual PCBs load reduction performance criteria shall total 0.5 kg/yr by June 30, 2018, and 3.0 kg/yr by June 30, 2020. The June 30, 2020, deadline shall be extended to December 31, 2020, if the Permittees provide documentation that control measures that will attain the load reduction will be implemented by December 31, 2020. The Fact Sheet describes the amount of PCBs load reduction benefit associated with implementing a number of control measures.

The Permittees may meet the load reductions as a group. The load reduction requirements summed over all Permittees within each county are set forth in Table 12.1. If neither the permit-area-wide total load reduction criteria nor the county-specific load reduction criterion is achieved, Permittees shall achieve load reductions consistent with their share of the county total. The individual Permittee share of the county load reduction performance criteria is the proportion of county population in each municipality.

If all the Permittees in a county wish to use an alternative method of distributing the county load reductions, these Permittees shall report through their countywide stormwater programs on their alternative method (if different from default population-based method) for assigning Permittee-specific load fractions in the 2017 Annual Report. This can be determined by the Permittees within the counties and may be different from one county to the next, but all Permittees within a county shall use the same method of distributing the county load reductions. Any acceptable alternative load reduction criteria must be approved through an amendment of this Permit.

Table 12.1 PCBs Load Reductions Performance Criteria by County

County	**PCBs load reduction (g/yr) by June 30, 2018**	**PCBs Load Reduction (g/yr) by June 30, 2020**
Alameda Permittees	160	940
Contra Costa Permittees	90	560
San Mateo Permittees	60	370
Santa Clara Permittees	160	940
Solano Permittees: Suisun City, Vallejo, Fairfield	30	190
Totals	**500**	**3000**

iii. Reporting

(1) The Permittees shall report by April 1, 2016, progress toward developing a list of the watersheds and management areas where PCBs control measures are currently being implemented and those in which control measures will be implemented (C.12.a.ii(1)) during the term of this Permit as well as the monitoring data and other information used to select these watersheds and management areas. This list should include watersheds containing contaminated sites referred to the Water Board as well.

(2) The Permittees shall report in their 2016 Annual Report the list of watersheds and management areas where control measures are currently being implemented or will be implemented during the term of the Permit (C.12.a.ii(1)) along with the specific control measures (C.12.a.ii(2)) that are currently being implemented and those that will be implemented in these watersheds and management areas

and an implementation schedule (C.12.a.ii(3)) for these control measures. In addition to the list of watersheds and management areas, this report shall include:

a. The number, type, and locations and/or frequency (if applicable) of control measures;
b. A cumulative listing of all potentially PCB-contaminated sites Permittees have discovered and referred to the Water Board to date, with a brief summary description of each site and where to obtain further information;
c. The description, scope, and start date, of PCBs control measures;
d. For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural controls or other relevant implementation milestones for structural controls and non-structural BMPs) and a schedule for milestone achievement; and
e. Clear statements of the roles and responsibilities of each participating Permittee for implementation of pollution prevention or control measures identified under C.12.a.ii(2).

(3) Beginning with the 2017 Annual Report and continuing in all Annual Reports, Permittees shall update all the information required under C.12.a.iii(2) as necessary to account for new control measures implemented but not described in the 2016 Annual Report.

(4) All Permittees in a county may submit, in the 2017 Annual Report, an alternative (different from the default described in C.12.a.ii(4)) and supporting information to derive Permittee-specific proportions of load reduction criteria.

C.12.b. Assess PCBs Load Reductions from Stormwater

i. Task Description – The Permittees shall develop, document, and implement an assessment methodology and data collection program to quantify in a technically sound manner PCBs loads reduced through implementation of pollution prevention, source control, and treatment control measures, including PCBs source control, stormwater treatment, green infrastructure and other measures. The Permittees shall use the assessment methodology to demonstrate progress toward achieving the load reductions required in this Permit term and the program area wasteload allocations.

A reasonable and technically sound load reduction accounting system is described in the Fact Sheet and is based on information submitted by Permittees in the January 2014 Integrated Monitoring Report. This task consists of documenting the method described in the Fact Sheet or any alternative methodology, updating and refining the accounting system to account for new information, justifying assumptions, analytical methods, sampling schemes and parameters used to quantify the load reduction for each type of control measure, and indicating what information will be collected and submitted to confirm the calculated load reduction for each unit of activity.

ii. Implementation Level – The Permittees shall adequately quantify the PCBs load reductions achieved through all the pollution prevention, source control, and

treatment control measures Permittees will implement in this Permit term, except for measures to manage PCB-containing materials and wastes during building demolitions (C.12.f).

For this Permit term, the Permittees will receive a total of 2000 g/yr (2 kg/yr) PCBs load reduction value if they have developed and implemented effective protocols for managing PCB-containing materials during demolition so that PCBs do not drain into the MS4 as required in provision C.12.f. The 2000 g/yr PCBs load reduction value shall be in furtherance of meeting the June 30, 2020, 3000 g/yr requirement in Table 12.1.

The Permittee-specific portion of the 2000 g/yr PCBs load reduction value shall be based on the proportion of county population in each municipality. If all the Permittees in a county wish to use an alternative method of distributing the county load reductions for managing PCB-containing materials during demolition, these Permittees shall report through their countywide stormwater programs on their alternative method (if different from default population-based method) for assigning Permittee-specific load fractions in the 2019 Annual Report. This can be determined by the Permittees within the counties and may be different from one county to the next, but all Permittees within a county shall use the same method of distributing the county load reductions. Any acceptable alternative load reduction criteria must be approved through an amendment of this Permit.

iii. Reporting

(1) In their 2016 Annual Report the Permittees shall submit for approval by the Executive Officer the assessment methodology and data collection program required in C.12.b.i. and described in C.12.b.ii.

(2) Beginning with the 2017 Annual Report, Permittees shall report annually the loads reduced using the default (from the Fact Sheet) or alternative approved assessment methodology to demonstrate cumulative PCBs load reduced from each control measure implemented since the beginning of the Permit term. Permittees shall submit all supporting data and information necessary to substantiate the load reduction estimates, including appropriate reference to the control measures described in the reporting required under C.12.a.

(3) In their 2018 and subsequent Annual Reports, the Permittees shall submit, for Executive Officer approval, any refinements, if necessary, to the measurement and estimation methodologies to assess PCBs load reductions in the subsequent Permit.

(4) All Permittees in a county may submit, in the 2019 Annual Report, an alternative (different from the default population-based method) and supporting information to derive Permittee-specific shares of load reduction value associated with implementation of C.12.f.

C.12.c. Plan and Implement Green Infrastructure to reduce PCBs loads

i. Task Description – Permittees shall implement green infrastructure projects during the term of the Permit to achieve PCBs load reduction performance criteria in Table

12.2 in furtherance of meeting the 3000 g/year load reduction criteria required in C.12.a.ii.(4) and Table 12.1. Green infrastructure projects on both public and private land can serve to achieve this load reduction requirement. Additionally, Permittees shall prepare a reasonable assurance analysis (see below and the Fact Sheet) to demonstrate quantitatively that PCBs load reductions of at least 3 kg/yr will be achieved by 2040 through implementation of green infrastructure throughout the permit-area.

Table 12.2 PCBs Load Reduction Performance Criteria via Green Infrastructure Implementation by County

County Permittees	PCBs Load Reduction (g/yr) by June 30, 2020, through green infrastructure
Alameda Permittees	37
Contra Costa Permittees	23
San Mateo Permittees	15
Santa Clara Permittees	37
Solano Permittees: Suisun City, Vallejo, Fairfield	8
Totals	**120**

ii. Implementation Level

(1) The Permittees shall implement green infrastructure projects so that PCBs loads are collectively reduced by 120 g/yr by June 30, 2020, which shall be extended to December 31, 2020, if the Permittees provide documentation that control measures that will attain the load reduction will be implemented by December 31, 2020. Permittees shall demonstrate achievement of these load reductions by using the accounting methods approved under provision C.12.b.iii(1). Load reductions from green infrastructure projects implemented prior to the effective date of this Permit may be counted toward the required green infrastructure reductions of this Permit term if these projects were established and implemented during the Previous Permit term, but load reductions from the activity were not realized or credited during the Previous Permit term.

The Permittees may meet the load reduction as a group. The load reduction requirements summed over all Permittees within each county are set forth in Table 12.2. If neither the permit-area-wide total load reduction nor the county-specific load reduction is achieved, Permittees shall achieve load reductions consistent with their share of the county total under provision C.12.a.ii(4).

(2) Permittees shall prepare a reasonable assurance analysis that demonstrates how green infrastructure will be implemented in order to achieve a PCBs load reduction of 3 kg/yr across the permit-area by 2040. This analysis shall include the following:

a. Quantify the relationship between areal extent of green infrastructure implementation and PCBs load reductions, taking into consideration the scale of contamination of the treated area as well as the pollutant removal effectiveness of likely green infrastructure strategies;

b. Estimate the amount and characteristics of land area that will be treated through green infrastructure by 2020, 2030, and 2040;

c. Estimate the amount of PCBs load reductions that will result from green infrastructure implementation by 2020, 2030, and 2040;

d. Quantitatively demonstrate that PCBs reductions of at least 3 kg/yr will be realized by 2040 through implementation of green infrastructure projects; and

e. Ensure that the calculation methods, models, model inputs and modeling assumptions used to fulfill C.12.c.ii(2)a-d have been validated through a peer review process.

iii. Reporting

(1) The Permittees shall submit in their 2018 Annual Report, as part of reporting for C.12.b.iii(3), the quantitative relationship between green infrastructure implementation and PCBs load reductions. This submittal shall include all data used and a full description of models and model inputs relied on to establish this relationship.

(2) The Permittees shall submit in their 2020 Annual Report an estimate of the amount and characteristics of land area that will be treated through green infrastructure implementation by 2020, 2030, and 2040. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.

(3) The Permittees shall submit in their 2020 Annual Report a reasonable assurance analysis to demonstrate quantitatively that PCBs reductions of at least 3 kg/yr will be realized by 2040 through implementation of green infrastructure projects. This submittal shall include all data used and a full description of models and model inputs relied on to make the demonstration and documentation of peer review of the reasonable assurance analysis.

(4) The Permittees shall submit as part of reporting for C.12.b.iii(4), beginning with their 2019 Annual Report an estimate of the amount of PCBs load reductions resulting from green infrastructure implementation during the term of the Permit. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.

C.12.d. Prepare Implementation Plan and Schedule to Achieve TMDL Wasteload Allocations

i. Task Description – Permittees shall prepare a plan and schedule for PCBs control measure implementation and reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030.

ii. Implementation level – Permittees shall prepare a PCBs control measures implementation plan and corresponding reasonable assurance analysis that demonstrates quantitatively that the plan will result in PCBs load reductions sufficient to attain the PCBs TMDL wasteload allocations by 2030. The plan must:

(1) Identify all technically and economically feasible PCBs control measures to be implemented (including green infrastructure projects); and

(2) Include a schedule according to which these technically and economically feasible control measures will be fully implemented; and

(3) Provide an evaluation and quantification of the PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.

iii. Reporting

Permittees shall submit the plan and schedule in the 2020 Annual Report.

C.12.e. Evaluate PCBs Presence in Caulks/Sealants Used in Storm Drain or Roadway Infrastructure in Public Rights-of-Way

i. Task Description –Permittees shall collect samples of caulk and other sealants used in storm drains and between concrete curbs and street pavement and investigate whether PCBs are present in such material and in what concentrations. PCBs are most likely present in material applied during the 1970s, so the focus of the investigations should be on structures installed during this era.

ii. Implementation Level

Permittees shall collect at least 20 composite samples (throughout the permit-area) of the caulks and sealants used in storm drains or roadway infrastructure in public rights-of-way and analyze this material for PCBs in such a way as to be able to detect a minimum PCBs concentration of 200 parts per billion. This sampling and analysis will count toward partial fulfillment of the monitoring effort aimed at finding PCBs sources (see management information need in C.8.f).

iii. Reporting

Permittees shall report on the results (including all data gathered) of this investigation no later than the 2018 Annual Report.

C.12.f. Manage PCB-Containing Materials and Wastes During Building Demolition Activities So That PCBs Do Not Enter Municipal Storm Drains

i. Task Description – Permittees shall develop and implement or cause to be developed and implemented an effective protocol for managing materials with PCBs concentrations of 50 ppm or greater in applicable structures at the time such structures undergo demolition so that PCBs do not enter MS4s. PCBs from these structures can enter storm drains during and/or after demolition through vehicle track-out, airborne releases, soil erosion, or stormwater runoff.

Applicable structures include, at a minimum, commercial, public, institutional and industrial structures constructed or remodeled between the years 1950 and 1980 with building materials with PCBs concentrations of 50 ppm or greater. Single-family residential and wood frame structures are exempt.

A Permittee is exempt from this requirement if it provides evidence acceptable to the Executive Officer that the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures.

ii. Implementation Level

(1) The Permittees shall develop a protocol by June 30, 2019, that includes each of the following components, at a minimum:

a. The necessary authority to ensure that PCBs do not enter MS4s from PCB-containing materials in applicable structures at the time such structures undergo demolition;

b. A method for identifying applicable structures prior to their demolition; and

c. Method(s) for ensuring PCBs are not discharged to the storm drain from demolition of applicable structures.

(2) By July 1, 2019, and thereafter, the Permittees shall implement or cause to be implemented the PCBs management protocol for ensuring PCBs are not discharged to MS4s from demolition of applicable structures via vehicle track-out, airborne releases, soil erosion, or stormwater runoff.

(3) By July 1, 2019, Permittees shall develop an assessment methodology and data collection program to quantify in a technically sound manner PCBs loads reduced through implementation of the protocol for controlling PCBs during demolition of applicable structures.

iii. Reporting

(1) In their 2016, 2017, and 2018 Annual Reports, the Permittees shall summarize the steps they have taken to begin implementing this requirement, which could include working with State and local agencies on inter-agency coordination regarding building demolitions, developing ordinances or policies, obtaining information materials, updating or supplementing permit application materials, developing a tracking tool for potential PCB-containing structures, and training relevant staff as needed to comply with this sub-provision.

(2) Each Permittee seeking exemption from C.12.f requirements must submit in its 2017 Annual Report documentation, such as historic maps or other historic records, that clearly demonstrates that the only structures that existed pre-1980 within its jurisdiction were single-family residential and/or wood-frame structures.

(3) In their 2020 Annual Report, the Permittees shall provide documentation demonstrating implementation with each of the minimum requirements in C.12.f.ii(1)(a)-(c).

(4) In their 2020 Annual Report and thereafter, the Permittees shall provide documentation of each of the following items:

a. The number of applicable structures that applied for a demolition permit during the reporting year; and
b. A running list of the applicable structures that applied for a demolition permit (since the date the PCBs control protocol was implemented) that had material(s) with PCBs at 50 ppm or greater, with the address, demolition date, and brief description of PCBs control method(s) used.

(5) In their 2020 Annual Report, Permittees shall submit an assessment methodology and data collection program to quantify PCBs loads reduced through implementation of the protocol for controlling PCBs during building demolition. This should be reported at the regional level on behalf of all Permittees.

C.12.g. Fate and Transport Study of PCBs: Urban Runoff Impact on San Francisco Bay Margins

i. Task Description – The Permittees shall conduct or cause to be conducted studies concerning the fate, transport, and biological uptake of PCBs discharged from urban runoff to San Francisco Bay margin areas.

ii. Implementation Level – The specific information needs include understanding the in-Bay transport of PCBs discharged in urban runoff, the sediment and food web PCBs concentrations in margin areas receiving urban runoff, the influence of urban runoff on the patterns of food web PCBs accumulation, especially in Bay margins, and the identification of drainages where urban runoff PCBs are particularly important in food web accumulation.

iii. Reporting – The Permittees shall submit in their 2017 Annual Report a workplan describing the specific manner in which these information needs will be accomplished and describing the studies to be performed with a preliminary schedule. The Permittees shall report on status of the studies in their 2018 Annual Report. The Permittees shall report in the March 15, 2020, Integrated Monitoring Report the findings and results of the studies completed, planned, or in progress as well as implications of studies on potential control measures to be investigated, piloted or implemented in future permit cycles.

C.12.h. Implement a Risk Reduction Program

i. Task Description – The Permittees shall conduct an ongoing risk reduction program to address public health impacts of PCBs in San Francisco Bay/Delta fish. The fish risk reduction program shall take actions to reduce actual and potential health risks in those people and communities most likely to consume San Francisco Bay-caught fish, such as subsistence fishers and their families. The risk reduction framework developed in the Previous Permit term, which funded community-based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach. Permittees should work with local health departments, the Bay Area Clean Water Agencies, and the Western States Petroleum Association to leverage resources for this program and to appropriately target at-risk populations.

ii. Implementation Level

(1) At a minimum, Permittees shall conduct or cause to be conducted an ongoing risk reduction program with the potential to reach 3,000 individuals annually who are likely consumers of San Francisco Bay-caught fish. Permittees are encouraged to collaborate with San Francisco Bay industrial and wastewater discharger agencies in meeting this requirement.

(2) In year four of the Permit term, Permittees shall evaluate the effectiveness of their risk reduction program.

iii. Reporting – The Permittees shall report on the status of the risk reduction program in each of their Annual Reports, including a brief description of actions taken, an estimate of the number of people reached, and why these people are deemed likely to consume Bay fish. The Permittees shall report the findings of the effectiveness evaluation of their risk reduction program in their 2020 Annual Report.

C.13. Copper Controls

The Permittees shall implement the following control program for copper. The Permittees shall implement the control measures and accomplish the reporting on those control measures according to the provisions below. The purpose of these provisions is to implement the control measures identified in the Basin Plan amendment necessary to support the copper site-specific objectives in San Francisco Bay. The Permittees may comply with any requirement of C.13 Provisions through a collaborative effort.

C.13.a. Manage Waste Generated from Cleaning and Treating of Copper Architectural Features, Including Copper Roofs, during Construction and Post-Construction.

i. Task Description – The Permittees shall prohibit the discharge of wastewater to storm drains generated from the installation, cleaning, treating, and washing of the surface of copper architectural features, including copper roofs.

ii. Implementation Level

(1) The Permittees shall require, when issuing building permits, use of appropriate BMPs for managing waste during and post-construction.

(2) The Permittees shall educate installers and operators on appropriate BMPs for managing copper-containing wastes.

(3) The Permittees shall enforce against noncompliance.

iii. Reporting

(1) In the 2016 Annual Report, the Permittees shall certify that legal authority currently exists to prohibit the discharge of wastewater to storm drains generated from the installation, cleaning, treating, and washing of copper architectural features, including copper roofs.

(2) In the 2016 Annual Report, the Permittees shall report how copper architectural features are addressed through the issuance of building permits.

(3) The Permittees shall report annually permitting and enforcement activities.

C.13.b. Manage Discharges from Pools, Spas, and Fountains that Contain Copper-Based Chemicals

i. Task Description – Permittees shall prohibit discharges to storm drains from pools, spas, and fountains that contain copper-based chemicals.

ii. Implementation Level – The Permittees shall either: 1) require installation of a sanitary sewer discharge connection for pools, spas, and fountains, including connection for filter backwash, with a proper permit from the POTWs; or 2) require diversion of discharge for use in landscaping or irrigation.

iii. Reporting

(1) In the 2016 Annual Report, the Permittees shall certify that legal authority currently exists to prohibit the discharges to storm drains of water containing copper-based chemicals from pools, spas, and fountains.

(2) In the 2016 Annual Report, the Permittees shall report how copper-containing discharges from pools, spas, and fountains are addressed to accomplish the prohibition of the discharge.

(3) The Permittees shall report annually on any enforcement activities.

C.13.c. Industrial Sources

i. Task Description – The Permittees shall ensure industrial facilities do not discharge elevated levels of copper to storm drains by ensuring, through industrial facility inspections, that proper BMPs are in place.

ii. Implementation Level

(1) As part of industrial site controls required by Provision C.4, the Permittees shall identify facilities likely to use copper or have sources of copper (e.g., plating facilities, metal finishers, auto dismantlers) and include them in their inspection program plans.

(2) The Permittees shall educate industrial inspectors on industrial facilities likely to use copper or have sources of copper and proper BMPs for them.

(3) As part of the industrial inspection, inspectors shall ensure that proper BMPs are in place at such facilities to minimize discharge of copper to storm drains, including consideration of roof runoff that might accumulate copper deposits from ventilation systems on site.

iii. Reporting

The Permittees shall highlight copper reduction results in the industrial inspection component in the C.13 portion of each Annual Report.

C.14. City of Pacifica and San Mateo County Fecal Indicator Bacteria Controls

The City of Pacifica (City) and San Mateo County (County) Permittees shall implement Provision C.14 for fecal indicator bacteria. The City and County shall implement fecal indicator bacteria control measures in areas where benefits are most likely to accrue (focused implementation) and report on those control measures according to this provision. The goal of this provision is to implement the urban runoff (stormwater runoff and dry weather flows) requirements of the San Pedro Creek (Creek) and Pacifica State Beach (Beach) Indicator Bacteria TMDL (TMDL) and reduce exceedances of the bacterial water quality objectives for the water contact recreation beneficial use during the term of the Permit, thereby making substantial progress toward achieving the TMDL wasteload allocations. The wasteload allocations and the dates they must be attained by are listed in Table 14.1 below. The City and County may comply with any requirement of this provision through a collaborative effort.

Table 14.1. Numeric Targets, TMDLs, and Allocations Based on Allowable Exceedances of Single-Sample Bacteria Objectives for San Pedro Creek and Pacifica State Beach

	San Pedro Creek		Pacifica State Beach		
	Dry Weather	Wet Weather	Summer Dry Weather (Apr. 1 to Oct. 31)	Winter Dry Weather (Nov. 1 to Mar. 31)	Wet Weather[4]
Allowable Exceedances of Single-Sample Objectives (assuming daily sampling is conducted) [1,2,]	4	26	0	2	30
Allowable Exceedances of Single-Sample Objectives (assuming weekly sampling is conducted) [3]	1	4	0	1	5
Attainment Date	August 1, 2028	August 1, 2028	August 1, 2021	August 1, 2021	August 1, 2021

1. Allowable exceedances are calculated by multiplying exceedance rates observed in the Reference System(s) by the Number of Days during each respective period in the reference year (1994).
2. To end up with whole numbers, where the fractional remainder for the calculated allowable exceedance days exceeds 0.1, the number of days is rounded up.
3. To determine the allowable number of exceedance events given a weekly sampling regime, as practiced for monitoring San Pedro Creek and Pacifica State Beach, the number of exceedance days was adjusted by solving for "X" in the following equation: X = (exceedance days x 52 weeks) / 365 days.
4. Wet weather is defined as any day with 0.1 inches of rain or more and the following three days.

C.14.a. Implement Control Measures to Achieve Indicator Bacteria Wasteload Allocations.

i. Task Description – The City and County shall implement bacteria control measures and pollution prevention strategies to prevent or reduce discharges of bacteria from their storm drain systems to meet the stormwater TMDL

wasteload allocations in the San Pedro Creek watershed and Pacifica State Beach Indicator Bacteria TMDL (TMDL Project Area).

ii. Implementation Level – In order to comply with this provision element:

(1) The County shall effectively prohibit potential illicit discharges into its storm sewer system from sanitary sewer overflows or the sanitary sewer lines within its jurisdiction.

(2) The County shall address bacteria discharges from the existing and future commercial horse and dog kennel facilities (facilities) into its storm sewer sytem within its jurisdiction as follows:

(a) Conduct annual site inspections of each facility for code compliance by June 30 of each year, beginning in 2016.

(b) Conduct an annual compliance review of each facility's current manure, stormwater, and drainage management plans by June 30 of each year, beginning in 2016.

(c) Enforcement actions for noncompliant facilities will be in line with the County's Confined Animal Ordinance.

(3) The City shall address bacteria discharges from the existing and future commercial horse facilities (facilities) within its jurisdiction as follows:

(a) Review each facility's compliance with the City's Administrative Policy on "Standards for Keeping Animals."

(b) Review each facility's compliance with the City's Municipal Code on "Animal Excreta."

(c) Conduct annual compliance review and inspection of each facility by June 30 of each year, beginning in 2016.

(d) Take progressive enforcement action(s), as needed, to bring noncompliant facilities into compliance with the City's Administrative Policy on "Standards for Keeping Animals" and Municipal Code on "Animal Excreta."

(4) The City shall install new dog waste clean-up signs, waste bag dispensers, and trash cans at a minimum of 10 (ten) high priority locations within the TMDL Project Area (each site to receive all three elements: sign, bag dispenser, and trash can, unless some of the elements are already in place) by June 30, 2016. The high priority sites for these installations shall be determined via visual inspections of popular dog walking areas and their potential to discharge improperly deposited dog waste to the Creek or Beach.

(5) The City shall develop and implement a visual inspection and cleanup plan for high dog waste accumulation areas along San Pedro Creek and its tributaries by June 30, 2016. From April 1 through October 31, inspections and cleanups shall, at a minimum, be conducted on a quarterly basis (e.g., once each in April, July, and October). From November 1 through March 31, inspections and cleanups shall be conducted prior to forecast rain

events with a forecast rainfall depth of 0.2 inches or more (as measured at Half Moon Bay Airport (KHAF) Meteorological Station), and at a frequency of no less than once a month.

(6) The City shall develop and implement an enhanced pet waste public outreach and education campaign by June 30, 2016, that, at a minimum, includes all the following:

(a) Explore the possibility of establishing a new public pet waste management stakeholder group (e.g., formal or informal dog owners club).

(b) Prepare and implement public service announcements regarding pet waste management and associated impacts to the Creek and Beach to play on the local television station and to include in print ads in the Pacifica Tribune.

(c) Distribute a mailer with an informational brochure to residents and businesses describing proper pet waste management, the linkage of the watershed to the Creek and Beach, and the adverse impact on those water bodies and those recreating in them from improper pet waste management.

(d) Add a new web page to the City website with information on the TMDL and the water quality monitoring and BMP implementation activities, as well as information about proper pet waste management and the impact of improperly deposited waste on water quality of the Creek and Beach and public health.

(e) Create and implement a pre-rain pet waste cleanup email alert to residents, reminding them to cleanup accumulated pet waste in their yards that could otherwise get washed into the Creek and Beach.

(f) Participate in local events and festivals to distribute pet waste management materials (educational fliers, dog waste bags, etc.).

(7) The City and County, based on the results of the source characterization and BMP effectiveness, and wasteload allocation attainment analyses described in sections C.14.b-c, shall modify or refocus control measure implementation efforts as appropriate, at a frequency of no less than every two years.

iii. Reporting

(1) No later than March 15 of each year, the City and County shall submit a comprehensive TMDL Status and Monitoring Report, reporting on the specific control measures (as listed in section C.14.a.ii above) that have been implemented in the TMDL Project Area during the forgoing October 1 through September 30 period. This report shall include:

(a) The number, type, and locations and/or frequency (if applicable) of control measures;

(b) The description, scope, and start date of pollution prevention measures; and

(c) Clear statements of the responsibilities of each participating Permittee for implementation of pollution prevention or control measures.

(2) Beginning with the 2017 TMDL Status and Monitoring Report and continuing in all TMDL Status and Monitoring Reports, the City and County shall update all the information as necessary to account for new control measures implemented, but not described in the 2016 TMDL Status and Monitoring Report or revisions to control measures.

C.14.b. Conduct Water Quality Monitoring to Assess Attainment of Wasteload Allocations

i. Task Description - The purpose of the attainment monitoring is to determine whether or not the TMDL wasteload allocations are attained.

ii. Implementation Level - In order to comply with this provision element, the City and County shall conduct attainment water quality monitoring activities as follows:

(1) Sample Locations – Two stations shall be monitored to assess attainment of wasteload allocations for stormwater runoff and dry weather flows: the mouth of San Pedro Creek (Creek Mouth) and Pacifica State Beach (Linda Mar #5).

(2) Sampling Frequency – The two attainment stations shall be monitored weekly on an ongoing basis for fecal indicator bacteria. The weekly sampling shall occur year-round regardless of weather conditions, provided the conditions are safe for field staff to collect the samples.

(3) Constituents –Fecal indicator bacteria species measured in freshwater samples collected from the Creek Mouth shall include E. coli and total coliform. Fecal indicator bacteria species measured in ocean water samples collected from Linda Mar #5 station shall include enterococci, fecal coliform, and total coliform.

iii. Reporting

(1) In their Annual TMDL Status and Monitoring Reports submitted on March 15 each year, the City and County shall analyze, summarize, and report the results of the ongoing attainment monitoring, as follows:

(a) The City and County shall complete a data evaluation, which shall focus on determining whether the TMDL wasteload allocations are being attained in San Pedro Creek and at Pacifica State Beach.

(b) The indicator bacteria results from the attainment monitoring stations (Creek Mouth and Linda Mar #5 stations) shall be compared to applicable bacterial water quality objectives and the allowable exceedances of those objectives as specified in the TMDL (Table 14.1).

(c) The data evaluation shall include tabulation and review of local rainfall data to determine whether the weekly attainment monitoring sampling events occurred during dry weather or wet weather.

(d) An ongoing quantitative analysis of trends in bacteria densities and exceedances of applicable water quality objectives at the two attainment stations shall be conducted and reported annually.

(e) A detailed and comprehensive assessment of wasteload allocation attainment by the end of year 4 of the Permit term shall be completed. If wasteload allocations are not achieved by the end of the Permit term, no later than 180 days prior to Permit expiration, the City and County shall submit a plan in their Report Of Waste Discharge, acceptable to the Executive Officer, that describes additional control measures or increased levels of existing control measures that will be implemented to prevent or reduce discharges of bacteria to storm drain systems to attain wasteload allocations. The plan shall include implementation methods, an implementation schedule, and proposed milestones.

C.14.c. Conduct Water Quality Monitoring to Characterize Sources of Bacteria in The Project Area and to Assess BMP Effectiveness

i. Task Description – The purpose of characterization monitoring is to better characterize indicator bacteria contributions from specific sources and to evaluate control measure effectiveness. The characterization monitoring shall provide data to:

(1) Characterize indicator bacteria densities in subwatersheds, storm drain outfalls, and pump stations that have not been sampled in the past. Results of the investigation may be used to drive future control measure actions.

(2) Establish baseline (or current) conditions against which future monitoring results can be compared following new or ongoing control measure implementation.

Characterization monitoring shall be conducted every other year on a water year basis (i.e., October 1 through September 30) beginning with Water Year 2016 (WY2016) (i.e., October 1, 2015 – September 30, 2016). WY2016 characterization monitoring shall assess *E. coli* densities throughout the San Pedro Creek watershed, with a focus on the culverted branches of the North Fork. The City and County may elect to focus on other areas with potential or suspected bacteria sources during subsequent years. In WY2016, human-, horse-, and dog-specific genetic markers shall be analyzed for a subset of the samples to investigate whether these species contribute fecal contamination to the Creek. The characterization monitoring shall be iterative in nature and allow for flexibility of design and details in future years. Subsequent years of characterization monitoring, at a minimum, shall have the same level of effort as WY2016; however, in future years, based on the results of the WY2016 monitoring, alternative sampling stations may be targeted, sampling intensities may be modified, sampling frequencies may be adjusted, and/or the species-specific genetic marker sampling may be revised.

ii. Implementation Level – The City and County shall conduct characterization monitoring activities as follows:

(1) Sample Locations – in WY2016, a minimum of twelve sampling stations shall be monitored. The selected sampling stations for the WY2016 characterization monitoring are divided into three separate categories, as follows:

(a) Subwatersheds – Four subwatersheds shall be targeted in WY2016: the North Fork (three stations), Middle Fork (one station), Sanchez Fork (one station), and Main Stem (three stations);

(b) Pump stations – The Linda Mar and Anza pump stations shall be sampled during wet weather discharge events to the Beach (during dry weather, flows entering these stations are pumped to a wastewater treatment facility and do not discharge to the Creek or Beach);

(c) Stormwater outfalls – The Crespi Canal, which is an engineered and concrete-lined drainage ditch, shall be sampled if it has flowing water.

In addition to the above stations, the Creek mouth shall be also sampled during events when species-specific genetic marker samples are collected (see section C.14.c.ii.3).

In monitoring years subsequent to the WY2016 monitoring year, based on the results of the WY2016 monitoring, the sample locations and quantity may be modified. However, in each subsequent monitoring year, a minimum of one hundred ten (110) fecal indicator bacteria samples shall be collected.

(2) Sampling Frequency – in WY2016, the characterization stations shall be sampled a minimum of ten times over the course of the water year, as follows:

(a) Characterization monitoring shall begin in WY2016 with the first sample collected in Winter 2016;

(b) Wet season – Five sampling events shall be conducted during each of the wet season months (November through March). To the extent possible, wet season sampling events shall occur during wet weather, which as defined in the TMDL is any day with 0.1 inch of rain or more and the following three days;

(c) Dry season – Five sampling events shall be conducted during the dry season on a monthly basis from May through September.

In subsequent monitoring years, based on the results of the WY2016 monitoring, the sampling frequency may be modified. However, in each subsequent monitoring year, a minimum of one hundred ten (110) fecal indicator bacteria samples shall be collected.

(3) Constituents – All samples shall be analyzed for *E. coli*. In addition, during each monitoring year (i.e., WY2016, and every other water year thereafter), at a minimum, samples collected at four stations during four sampling events (two wet season, two dry season) shall be analyzed for

human-, horse-, and dog-specific genetic markers to assess whether the targeted host species contribute fecal contamination to the Creek and Beach.

(4) Monitoring Protocols and Data Quality – Where applicable, monitoring data must be SWAMP comparable. Minimum data quality shall be consistent with the latest version of the SWAMP Quality Assurance Project Plan (QAPP) for applicable parameters, including data quality objectives, field and laboratory blanks, field duplicates, laboratory spikes, and clean techniques, using the most recent SWAMP Standard Operating Procedures.

(5) Future Revisions – Any and all changes to the characterization monitoring plan in subsequent years (e.g., WY2018, WY2020, etc.) shall be submitted to the Executive Officer for review and acceptance no later than 90 days prior to implementation.

iii. Reporting

(1) In their Annual TMDL Status and Monitoring Reports beginning with the 2016 report submitted on March 15, 2017, and every other year's report thereafter, the City and County shall submit a comprehensive Characterization Monitoring Report reporting on all data collected during the preceding October 1 through September monitoring period.

(2) Data evaluation shall focus on addressing the following questions:
   (a) Which land uses and/or sources contribute most to bacteria impairments in San Pedro Creek watershed?
   (b) Are controllable sources of fecal contamination (e.g., human, horses, and dogs) present in the San Pedro Creek watershed?
   (c) What are the multi-year indicator bacteria density trends in the Creek and at the Beach (i.e., do control measures appear to be reducing bacteria)?

(3) As appropriate, the Report shall include the following:
   (a) Immediately following the Table of Contents, a Data Tables section that includes all the data collected pursuant to Provision C.14.d. and contains the following information pertaining to the foregoing monitoring period:
      (i) A map showing all monitoring locations;
      (ii) Immediately following the map, a single completed Locations and Parameters Table containing the following columns or rows for each location sampled: numeric site identifier, a short-hand site name such as "Creek Mouth," latitude, longitude, and parameters assessed;
      (iii) Immediately following the Locations and Parameters Table, a single completed Results Table containing the following columns or rows for each location sampled: the short-hand site name and

datum/result for each constituent analyzed. Constituents that exceed applicable water quality objectives shall be highlighted.

(b) For all data, a statement of the data quality.

(c) An analysis of the data, which includes the following:

(i) Basic descriptive statistics using indicator bacteria data;

(ii) Identification and evaluation of any controllable sources of fecal contamination (e.g., human, horses, and dogs) present in the San Pedro Creek watershed;

(iii) Identification and analysis of any trends in stormwater or receiving water quality; and

(iv) Consideration of variability in the data sets.

(d) A discussion of the data, which shall:

(i) Discuss monitoring data relative to prior conditions, beneficial uses and applicable water quality standards as described in the Basin or the Ocean plans;

(ii) Where appropriate, develop hypotheses to investigate regarding pollutant sources, trends, and BMP effectiveness;

(iii) Identify and prioritize water quality problems;

(iv) Identify potential sources of water quality problems;

(v) Describe followup actions;

(vi) Evaluate the effectiveness of existing control measures; and

(vii) Identify management actions needed to address water quality problems.

C.15. Exempted and Conditionally Exempted Discharges

The objective of this provision is to exempt unpolluted non-stormwater discharges from Discharge Prohibition A.1 and to conditionally exempt non-stormwater discharges that are potential sources of pollutants. In order for non-stormwater discharges to be conditionally exempted from Discharge Prohibition A.1, the Permittees must identify appropriate BMPs, monitor the non-stormwater discharges where necessary, and ensure implementation of effective control measures – as listed below – to eliminate adverse impacts to waters of the State consistent with the discharge prohibitions of the Order.

C.15.a. Exempted Non-Stormwater Discharges (Exempted Discharges):

i. Discharge Type – In carrying out Discharge Prohibition A.1, the following unpolluted discharges are exempted from prohibition of non-stormwater discharges:

(1) Flows from riparian habitats or wetlands;

(2) Diverted stream flows;

(3) Flows from natural springs;

(4) Rising ground waters;

(5) Uncontaminated and unpolluted groundwater infiltration;

(6) Single family homes' pumped groundwater, foundation drains, and water from crawl space pumps and footing drains;

(7) Pumped groundwater from drinking water aquifers (excludes well development); and

(8) NPDES permitted discharges (individual or general permits).

ii. Implementation Level – The non-stormwater discharges listed in Provision C.15.a.i above are exempted unless they are identified by the Permittees or the Executive Officer as sources of pollutants to receiving waters. If any of the above categories of discharges, or sources of such discharges, are identified as sources of pollutants to receiving waters, such categories or sources shall be addressed as conditionally exempted discharges in accordance with Provision C.15.b below.

C.15.b. Conditionally Exempted Non-Stormwater Discharges:

The following non-stormwater discharges are also exempt from Discharge Prohibition A.1 if they are either identified by the Permittees or the Executive Officer as not being sources of pollutants to receiving waters, or if appropriate control measures to eliminate adverse impacts of such sources are developed and implemented in accordance with the tasks and implementation levels of each category of Provision C.15.b.i-vi below.

i. Discharge Type – Pumped Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains

(1) **Pumped Groundwater from Non-Drinking Water Aquifers**

Groundwater pumped from a monitoring well, used for groundwater basin management, which is owned and/or operated by a Permittee is allowed if the following requirements are met:

(a) **Implementation Level** – Twice a year (once during the wet season and once during the dry season), representative samples shall be taken from each aquifer that potentially will discharge or has discharged into a storm drain. Samples collected and analyzed for compliance in accordance with self-monitoring requirements of other NPDES permits or sample data collected for drinking water regulatory compliance may be submitted to comply with this requirement as long as they meet the following criteria:

(i) The water samples shall meet water quality standards consistent with the existing effluent limitations or pollutant triggers in the Water Board's NPDES Groundwater General Permit, NPDES No. CAG912002.

(ii) The water samples shall be analyzed using approved U.S. EPA methods: (a) U.S. EPA Method 8015 Modified for total petroleum hydrocarbons; (b) U.S. EPA Method 8260B and 8270C or equivalent for volatile and semi-volatile organic compounds; and (c) approved U.S. EPA methods to meet the triggers for the metals listed in the general permit discussed in C.15.(b)i.(1)(a)(i) above.

(iii) The water samples shall be analyzed for pH and turbidity.

If a Permittee is unable to comply with the above criteria, the Permittee shall notify the Water Board upon becoming aware of the compliance issue.

(b) **Required BMPs and Monitoring** – When greater than 2,500 gallons per day of uncontaminated (meeting the criteria in C.15.b.i.(1)(a)(i)) groundwater is discharged from these monitoring wells, the following shall be implemented:

(i) Test the receiving water, upstream and downstream of the discharge point, to determine ambient turbidity and pH prior to discharging. Receiving water monitoring is not required if the discharge infiltrates into a dry creek immediately downstream.

(ii) Test water samples for turbidity and pH on the first two consecutive days of dewatering.

(iii) Maintain proper control of the discharge at the discharge point to prevent erosion, scouring of banks, nuisance, contamination, and excess sedimentation in the receiving waters.

(iv) Maintain proper control of the flowrate and total flow during discharge so that it will not have a negative impact on the receiving waters.

(v) Appropriate BMPs shall be implemented to remove total suspended solids and silt to allowable discharge levels. Appropriate BMPs may include filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small scale peroxide addition, or other minor treatment.

(vi) Turbidity of the discharged groundwater shall be maintained below 50 NTU for discharges to dry creeks, 110 percent of the ambient stream turbidity for a flowing stream with turbidities greater than 50 NTU, or 5 NTU above ambient turbidity for flowing streams with turbidities less than or equal to 50 NTU.

(vii) The pH of the discharged groundwater shall be maintained within the range of 6.5 to 8.5 and shall not vary from normal ambient pH by more than 0.5 pH units.

(c) If the Permittee is unable to comply with the criteria in Provision C.15.b.i.(1)(b)(i)-(vii), discharge shall cease immediately and the Permittee shall employ treatment to meet the above criteria, use other means of disposal, or apply for coverage under the Water Board's NPDES Groundwater General Permits.

(d) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.

(2) **Pumped[41] Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains**

(a) Proposed new discharges of uncontaminated groundwater at flows of 10,000 gallons/day or more and all new discharges of potentially contaminated groundwater shall be reported to the Water Board so that they can be subject to NPDES permitting requirements. Proposed new discharges of uncontaminated groundwater at flows of less than 10,000 gallons/day shall be encouraged to discharge to a landscaped area or bioretention unit that is large enough to accommodate the volume.

(b) If the groundwater cannot be discharged to a landscaped area or bioretention unit and the discharge is greater than 2,500 gallons per day, it can only be considered for discharge once the following sampling is done to verify that the discharge is uncontaminated:

(i) The discharge shall meet WQS consistent with the existing effluent limitations or pollutant triggers in theWater Board's NPDES Groundwater General Permit, NPDES No. CAG912002.

[41] Pumped groundwater not exempted in C.15.a or conditionally exempted in C.15.b.i.(1).

(ii) The Permittees shall require that water samples from these discharge types be analyzed using the following approved U.S. EPA methods:

- U.S. EPA Method 8015 Modified for total petroleum hydrocarbons, and U.S. EPA Method 8260B and 8270C or equivalent for volatile and semi-volatile organic compounds.
- The approved U.S. EPA Methods for the metals listed below that meet the corresponding Reporting Limits:

Metal	**Reporting Limit**
Antimony	6 µg/l
Arsenic	10 µg/l
Beryllium	4 µg/l
Cadmium	1.1 µg/l
Chromium VI	11 µg/l
Copper[42]	5.9 µg/l
Copper[43]	3.4 µg/l
Copper[44]	4.7 µg/l
Lead	3.2 µg/l
Mercury	0.025 µg/l
Nickel	19 µg/l
Selenium	5 µg/l
Silver	2.2 µg/l
Thallium	1.7 µg/l
Zinc	86 µg/l
Cyanide	2.9 µg/l

(c) **Monitoring and Required BMPs** – When the discharge has been verified as uncontaminated per sampling completed in C.15.b.i.(2)(b) above, the Permittees shall require the following:

(i) Test the receiving water, upstream and downstream of the discharge point, to determine ambient turbidity and pH prior to discharging. Receiving water monitoring is not required if the discharge infiltrates into a dry creek immediately downstream or if accessing the sampling points poses safety to personnel.

(ii) Test water samples for turbidity and pH on the first two consecutive days of dewatering.

(iii) Maintain proper control of the discharge at the discharge point to prevent erosion, scouring of bank, nuisance, contamination, and excess sedimentation in the receiving waters.

[42] Applicable to Suisun Bay and San Pablo Bay segments of San Francisco Bay.

[43] Applicable to Central Bay and Lower Bay segments of San Francisco Bay.

[44] Applicable to South San Francisco Bay segments of San Francisco Bay.

(iv) Maintain proper control of the flow rate and total flow during discharge so that it will not have a negative impact on the receiving waters.

(v) Appropriate BMPs to render pumped groundwater free of pollutants and therefore exempted from prohibition may include the following: filtration, settling, coagulant application with no residual coagulant discharge, minor odor or color removal with activated carbon, small scale peroxide addition, or other minor treatment.

(vi) Turbidity of discharged groundwater shall be maintained below 50 NTU for discharges to dry creeks, 110 percent of the ambient stream turbidity for a flowing stream with turbidities greater than 50 NTU, or 5 NTU above ambient turbidity for a flowing stream with turbidities less than or equal to 50 NTU.

(vii) The pH of discharged water shall be maintained within the range of 6.5 to 8.5 and shall not vary from normal ambient pH by more than 0.5 pH units.

(d) If a Permittee determines that a discharger or a project proponent is unable to comply with the criteria in C.15.b.i.(2)(c)(i)-(vii), the Permittee shall require the discharge to cease immediately and require that the discharger employ treatment to meet the above criteria, use other means of disposal, or apply for coverage under the Water Board's NPDES Groundwater General Permit.

(e) **Reporting** – The Permittees shall maintain records of these discharges, BMPs implemented, and any monitoring data collected.

ii. Discharge Type – Air Conditioning Condensate

Required BMPs – Condensate from air conditioning units shall be reused or directed to landscaped areas or the ground. Discharge to a storm drain system may be allowed if discharge to landscaped areas or the ground is not feasible.

iii. Discharge Type – Emergency Discharges of Potable Water

(1) **Emergency Discharges** –Discharges resulting from firefighting activities.

(2) Required BMPs

(a) The Permittees shall implement or require firefighting personnel to implement BMPs for emergency discharges. However, the BMPs should not interfere with immediate emergency response operations or impact public health and safety. BMPs may include, but are not limited to, the plugging of the storm drain collection system for temporary storage, the proper disposal of water according to jurisdictional requirements, and the use of foam where there may be toxic substances on the property the fire is located.

(b) During emergency situations, priority of efforts shall be directed toward life, property, and the environment (in descending order). The

Permittees or firefighting personnel shall control the pollution threat from their activities to the extent that time and resources allow.

(3) **Reporting Requirements** – Reporting requirements will be determined by Water Board staff on a case-by-case basis, such as for fire incidents at chemical plants.

iv. Discharge Type – Individual Residential Car Washing

Required BMPs

(1) The Permittees shall discourage through outreach efforts individual residential car washing within their jurisdictional areas that discharge directly into their storm drain systems.

(2) The Permittees shall encourage individuals to direct car wash waters to landscaped areas, use as little detergent as necessary, or wash cars at commercial car wash facilities.

v. Discharge Type – Swimming Pool, Hot Tub, Spa, and Fountain Water Discharges

(1) **Required BMPs**

(a) The Permittees shall prohibit discharge of water that contains chlorine residual, copper algaecide, filter backwash or other pollutants to storm drains or to waterbodies. Such polluted discharges from pools, hot tubs, spas, and fountains shall be directed to the sanitary sewer (with the local sanitary sewer agency's approval) or to landscaped areas that can accommodate the volume.

(b) Discharges from swimming pools, hot tubs, spas and fountains shall be allowed into storm drain collection systems only if there are no other feasible disposal alternatives (e.g., disposal to sanitary sewer or landscaped areas) and if the discharge is properly dechlorinated to non-detectable levels of chlorine consistent with water quality standards.

(c) The Permittees shall require that new or rebuilt swimming pools, hot tubs, spas and fountains within their jurisdictions have a connection[45] to the sanitary sewer to facilitate draining events. The Permittees shall coordinate with local sanitary sewer agencies to determine the standards and requirements necessary for the installation of a sanitary sewer discharge location to allow draining events for pools, hot tubs, spas, and fountains to occur with the proper permits from the local sanitary sewer agency.

(d) The Permittees shall improve their public outreach and educational efforts and ensure implementation of the required BMPs and compliance in commercial, municipal, and residential facilities.

[45] This connection could be a drain in the pool to the sanitary sewer or a sanitary sewer clean out located close enough to the pool so that a hose can readily direct the pool discharge into the sanitary sewer clean out.

(e) The Permittees shall implement the Illicit Discharge Enforcement Response Plan from C.5.b for polluted (contains chlorine, copper algaecide, filter backwash, or other pollutants) swimming pool, hot tub, spa, or fountain waters that get discharged into the storm drain.

(2) **Reporting** – The Permittees shall keep records of the authorized major discharges of dechlorinated pool, hot tubs, spa, and fountain water to the storm drain, including BMPs employed; such records shall be available for inspection by the Water Board.

vi. Discharge Type – Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering

(1) **Required BMPs** – The Permittees shall promote measures that minimize runoff and pollutant loading from excess irrigation via the following:

(a) Promoting and/or working with potable water purveyors to promote conservation programs that minimize discharges from lawn watering and landscape irrigation practices;

(b) Promoting outreach messages regarding the use of less toxic options for pest control and landscape management;

(c) Promoting and/or working with potable water purveyors to promote the use of drought tolerant, native vegetation to minimize landscape irrigation demands;

(d) Promoting and/or working with potable water purveyors to promote outreach messages that encourage appropriate applications of water needed for irrigation and other watering practices; and

(e) Implementing the Illicit Discharge Enforcement Response Plan from C.5.b, as necessary, for ongoing, large-volume landscape irrigation runoff to their storm drain systems.

(2) **Reporting** – The Permittees shall provide implementation summaries in their Annual Report.

C.16. Discharges to Areas of Special Biological Significance

This Provision applies to stormwater discharges from the County of San Mateo into James V. Fitzgerald Marine Reserve Area of Special Biological Significance (ASBS). As set forth in the Fact Sheet, the State Water Board granted an exception to the ASBS discharge prohibition (ASBS Exception) in the Ocean Plan to applicants including the County of San Mateo for their existing stormwater discharges into ASBSs, provided they receive authorization to discharge by an NPDES permit; the discharges comply with all applicable terms, prohibitions, and special conditions of Attachment B - Special Protections (Special Protections) attached to and part of the ASBS Exception; and the discharges are essential for flood control or slope stability, designed to prevent soil erosion, occur only during wet weather, and are composed of only stormwater runoff. This Provision serves as the authorization for the County of San Mateo to discharge stormwater into the ASBS in accordance with the requirements below.

C.16.a. Discharges to the James V. Fitzgerald Marine Reserve ASBS

i. If the County of San Mateo meets all of the conditions set forth in Provision C.16.a.i. and C.16.a.ii., its stormwater discharges into the James V. Fitzgerald Marine Reserve ASBS from MS4 outfalls that were constructed or were under construction prior to January 1, 2005, are permitted for those discharges that:

(1) Are essential for flood control or slope stability, including roof, landscape, road, and parking lot drainage;

(2) Are designed to prevent soil erosion;

(3) Occur only during wet weather; and

(4) Are composed only of stormwater runoff.

ii. The County of San Mateo shall comply with all of the applicable terms, prohibitions, and special conditions of the Special Protections of the ASBS Exception set forth in State Water Board Resolution No. 2012-0012, as amended by State Water Board Resolution No. 2012-0031, including monitoring requirements, as they apply to stormwater. The Special Protections are hereby incorporated by reference into this Order and attached hereto as Attachment F. Notwithstanding anything to the contrary in this Order, the County of San Mateo shall not alter the natural ocean quality of the ASBS; shall not discharge trash into the ASBS; and shall not discharge non-stormwater into the ASBS except as provided in the Special Protections. As required by the Special Protections, the County of San Mateo shall address the preceding requirements (other than trash) in an ASBS Compliance Plan to be approved by the State Water Board Executive Director or the Regional Water Board Executive Officer and comply with the compliance schedule set forth in the Special Protections.

iii. Reporting – In addition to the monitoring requirements of the Special Restrictions, the County of San Mateo shall submit, upon approval by the State Water Board Executive Director, a copy of its approved ASBS Compliance Plan.

C.17. Annual Reports

C.17.a. The Permittees shall submit Annual Reports electronically in all cases by September 30 of each year. Each Annual Report shall report on the previous fiscal year beginning July 1 and ending June 30. The annual reporting requirements are set forth in Provisions C.1 – C.16. A paper copy of each Annual Report shall be submitted by October 15 of each year. The Permittees shall retain documentation as necessary to support their Annual Report. The Permittees shall make this supporting information available upon request within a timely manner, generally no more than ten business days unless otherwise agreed to by the Executive Officer.

C.17.b. The Permittees shall collaboratively develop a common annual reporting format for acceptance by the Executive Officer by April 1, 2016. The resulting Annual Report Form, once approved, shall be used by all Permittees. The Annual Report Form may be changed by April 1 of each year for the following Annual Report, to more accurately reflect the reporting requirements of Provisions C.1 – C.16, with the agreement of the Permittees and by the approval of the Executive Officer.

C.17.c. The Permittees shall certify in each Annual Report that they are in compliance with all requirements of the Order. If a Permittee is unable to certify compliance with a requirement, it must submit, in the cover letter of the Annual Report, the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance.

C.18. Modifications to this Order

This Order may be modified, or alternatively, revoked or reissued, before the expiration date as follows:

C.18.a. To address significant changed conditions identified in the technical or Annual Reports required by the Water Board, or through other means or communication, that were unknown at the time of the issuance of this Order;

C.18.b. To incorporate applicable requirements of statewide water quality control plans adopted by the State Water Board or amendments to the Basin Plan approved by the State Water Board;

C.18.c. To comply with any applicable requirements, guidelines, or regulations issued or approved under section 402(p) of the CWA, if the requirement, guideline, or regulation so issued or approved contains different conditions or additional requirements not provided for in this Order. The Order as modified or reissued under this paragraph shall also contain any other requirements of the CWA then applicable; or

C.18.d. To approve and incorporate an alternative method or methods of distributing the county load reductions for mercury or PCBs on a Permittee-specific basis, as allowed by Provisions C.11 and C.12.

C.19. Standard Provisions

Each Permittee shall comply with all parts of the Standard Provisions contained in Attachment G of this Order.

C.20. Expiration Date

This Order expires on December 31, 2020, five years from the effective date of this Order. The Permittees must file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of such date as application for reissuance of waste discharge requirements.

C.21. Rescission of Old Order

Order No. R2-2009-0074 is hereby rescinded on the effective date of this Order, which shall be January 1, 2016, provided that the Regional Administrator of U.S. EPA, Region IX, does not object.

C.22. Effective Date

The Effective Date of this Order and Permit shall be January 1, 2016, provided that the Regional Administrator of U.S. EPA, Region IX, does not object**.**

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on November 19, 2015.

Bruce H. Wolfe
Executive Officer

Attachment A: Municipal Regional Stormwater Permit Fact Sheet
Attachment B: Provision C.3.b. Sample Reporting Table
Attachment C: Provision C.3.g. Hydromodification Applicability Maps
Attachment D: Provision C.8. Standard Monitoring Provisions
Attachment E: Provision C.10. Supporting Information
Attachment F: Provision C.16. ASBS Special Protection Zone
Attachment G: Standard NPDES Stormwater Permit Provisions

ACRONYMS & ABBREVIATIONS

ACCWP	Alameda Countywide Clean Water Program
BAHM	Bay Area Hydrology Model
Basin Plan	Water Quality Control Plan for the San Francisco Bay Basin
BASMAA	Bay Area Stormwater Management Agencies Association
BMPs	Best Management Practices
CASQA	California Stormwater Quality Association
CCC	California Coastal Commission
CCCWP	Contra Costa Clean Water Program
CDFW	California Department of Fish and **W**ildlife
CEDEN	California Environmental Data Exchange Network
CEQA	California Environmental Quality Act
CFR	Code of Federal Regulations
CSBP	California Stream Bioassessment Procedures
CSCI	California Stream Condition Index
CWA	Federal Clean Water Act
CWC or Water Code	California Water Code
DCIA	Directly Connected Impervious Area
DPR	California Department of Pesticide Regulation
ERP	Enforcement Response Plan
FR	Federal Register
GIS	Geographic information System
HBANC	Homebuilders Association of Northern California
HM	Hydromodification Management
HMP	Hydromodification Management Plan
IC/ID	Illicit Connections and Illicit Discharges
IPM	Integrated Pest Management
LID	Low Impact Development
MEP	Maximum Extent Practicable

MRP	Municipal Stormwater Regional Permit
MS4	Municipal Separate Storm Sewer System
MTC	Metropolitan Transportation Commission
NAFSMA	National Association of Flood & Stormwater Management Agencies
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRDC	Natural Resources Defense Council
O&M	Operation and Maintenance
PAHs	Polynuclear Aromatic Hydrocarbons
PBDE	Polybrominated Diphenyl Ether
PCA	Pest Control Advisor
PCBs	Polychlorinated Biphenyls
PHAB	Physical Habitat (e.g., of streams)
POTW	Publicly Owned Treatment Works
QAPP	Quality Assurance Project Plan
RAA	Reasonable Assurance Analysis
RCRA	Federal Resource Conservation and Recovery Act
RMC	Regional Monitoring Coalition
RMP	Regional Monitoring Program
ROWD	Report of Waste Discharge
RTA	Rapid Trash Assessment
SARA	Federal Superfund Amendments and Reauthorization Act
SCURTA	Santa Clara Urban Rapid Trash Assessment
SCVURPPP	Santa Clara Valley Urban Runoff Pollution Prevention Program
SIC	Standard Industrial Classification
SMWPPP	San Mateo Countywide Water Pollution Prevention Program
SSID	Stressor Source Identification
SOP	Standard Operating Procedure
SWAMP	Surface Water Ambient Monitoring Program
SWPPP	Stormwater Pollution Prevention Plan

State Water Board	State Water Resources Control Board
TIE	Toxicity Identification Evaluation
TMDLs	Total Maximum Daily Loads
TSCA	Federal Toxic Substances Control Act
TST	Test of Significant Toxicity
TU	Toxicity Units
UCMR	Urban Creeks Monitoring Report
U.S. EPA	Unites States Environmental Protection Agency
Water Board	San Francisco Bay Regional Water Quality Control Board
WLAs	Wasteload Allocations
WQS	Water Quality Standards

GLOSSARY

Arterial Roads	Freeways, multilane highways, and other important roadways that supplement the Interstate System. Arterial roads connect, as directly as practicable, principal urbanized areas, cities, and industrial centers.
Beneficial Uses	The uses of water of the State protected against degradation, such as domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation and preservation of fish and wildlife, and other aquatic resources or preserves.
Collector Roads	Major and minor roads that connect local roads with arterial roads. Collector roads provide less mobility than arterial roads at lower speeds and for shorter distances.
Commercial Development	Development or redevelopment to be used for commercial purposes, such as office buildings, retail or wholesale facilities, restaurants, shopping centers, hotels, and warehouses.
Construction Site	Any project, including projects requiring coverage under the General Construction Permit, that involves soil disturbing activities including, but not limited to, clearing, grading, paving, disturbances to ground such as stockpiling, and excavation. Construction sites are all sites with disturbed or graded land area not protected by vegetation, or pavement, that are subject to a building or grading permit.
Conditionally Exempted Non-Stormwater Discharge	Non-stormwater discharges that are prohibited by A.1. of this Permit, unless such discharges are authorized by a separate NPDES permit or are not in violation of WQS because appropriate BMPs have been implemented to reduce pollutants to the maximum extent practicable, consistent with Provision C.15.
Discharger	Any responsible party or site owner or operator within the Permittees' jurisdiction whose site discharges stormwater runoff~~,~~ or a non-stormwater discharge.
Detached Single-family Home Project	The building of one single new house or the addition and/or replacement of impervious surface associated with one single existing house, which is not part of a larger plan of development.
Development	Construction, rehabilitation, redevelopment, or reconstruction of any public or private residential project (whether single-family, multi-unit, or planned unit development); or industrial, commercial, retail or other nonresidential project, including public agency projects.
Estate Residential Development	Development zoned for a minimum 1 acre lot size.
Emerging Pollutants	Pollutants in water that either: (1) May not have been thoroughly studied to date but are suspected by the scientific community to be a source of impairment of beneficial uses and/or present a health risk; or (2) Are not yet part of a monitoring program.

Erosion	The diminishing or wearing away of land due to wind, or water. Often the eroded debris (silt or sediment) becomes a pollutant via stormwater runoff. Erosion occurs naturally, but can be intensified by land disturbing and grading activities such as farming, development, road building, and timber harvesting.
Floor Area Ratio	The ratio of the total floor area on all floors of all buildings at a project site (except structures or floors dedicated to parking) to the total project site area.
Full Trash Capture Device	Full trash capture systems are defined as "any device or series of devices that traps all particles retained by a 5mm mesh screen and has a design treatment capacity of not less than the peak flow rate resulting from a one-year, one-hour, storm in the tributary drainage catchment area." Trash collection booms and sea curtains do not meet this definition, but are effective for removal of floating trash if properly maintained. Because these devices do not meet the Full Trash Capture Device definition, only ¼ of the catchment area treated by these measures is credited toward meeting the trash management area requirement of C.10.a.
General Permits	Waste Discharge Requirements or NPDES Permits containing requirements that are applicable to a class or category of dischargers. The State has general stormwater permits for construction sites that disturb soil of 1 acre or more; industrial facilities; `Phase II smaller municipalities (including nontraditional Small MS4s, which are governmental facilities, such as military bases, public campuses, and prison and hospital complexes); and small linear underground/overhead projects disturbing at least 1 acre, but less than 5 acres (including trenching and staging areas).
Grading	The cutting and/or filling of the land surface to a slope or elevation.
Green Infrastructure	Infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments. At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water.
Gross Density	The total number of residential units divided by the acreage of the entire site area, including land occupied by public right-of-ways, recreational, civic, commercial and other non-residential uses.
Hydrologic source control measures	Site design techniques that minimize and/or slow the rate of stormwater runoff from the site.
Hydromodification	The modification of a stream's hydrograph, caused in general by increases in flows and durations that result when land is developed (e.g., made more impervious). The effects of hydromodification include, but are not limited to, increased bed and bank erosion, loss of habitat, increased sediment transport and deposition, and increased flooding.

Illicit Discharge	Any discharge to a municipal separate storm sewer (storm drain) system (MS4) that is prohibited under local, State, or federal statutes, ordinances, codes, or regulations. The term *illicit discharge* includes all non-stormwater discharges not composed entirely of stormwater and discharges that are identified under Section A. (Discharge Prohibitions) of this Permit. The term illicit discharge does not include discharges that are regulated by an NPDES permit (other than the NPDES permit for discharges from the MS4) or authorized by the Executive Officer.
Impervious Surface	A surface covering or pavement of a developed parcel of land that prevents the land's natural ability to absorb and infiltrate rainfall/stormwater. Impervious surfaces include, but are not limited to, roof tops; walkways; patios; driveways; parking lots; storage areas; impervious concrete and asphalt; and any other continuous watertight pavement or covering. Landscaped soil and pervious pavement, including pavers with pervious openings and seams, underlain with pervious soil or pervious storage material, such as a gravel layer sufficient to hold at least the C.3.d volume of rainfall runoff are not impervious surfaces. Open, uncovered retention/detention facilities shall not be considered as impervious surfaces for purposes of determining whether a project is a Regulated Project under Provisions C.3.b. and C.3.g. Open, uncovered retention/detention facilities shall be considered impervious surfaces for purposes of runoff modeling and meeting the Hydromodification Standard.
Industrial Development	Development or redevelopment of property to be used for industrial purposes, such as factories; manufacturing buildings; and research and development parks.
Infill Site	A site in an urbanized area where the immediately adjacent parcels are developed with one or more qualified urban uses or at least 75% of the perimeter of the site adjoins parcels that are developed with qualified urban uses and the remaining 25% of the site adjoins parcels that have previously been developed for qualified urban uses and no parcel within the site has been created within the past 10 years.
Infiltration Device	Any structure that is deeper than wide and designed to infiltrate stormwater into the subsurface, and, as designed, bypass the natural groundwater protection afforded by surface soil. These devices include dry wells, injection wells, and infiltration trenches (includes french drains).
Joint Stormwater Treatment Facility	A stormwater treatment facility built to treat the combined runoff from two or more Regulated Projects located adjacent to each other.
Local Roads	Roads that provide limited mobility and are the primary access to residential areas, businesses, farms, and other local areas. Local roads offer the lowest level of mobility and usually contain no bus routes. Service to through traffic movement usually is deliberately discouraged in local roads.

Maximum Extent Practicable (MEP)	A standard for implementation of stormwater management actions to reduce pollutants in stormwater. CWA 402(p)(3)(B)(iii) requires that municipal stormwater permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the state determines appropriate for the control of such pollutants." Also see State Water Board Order WQ 2000-11.
Mixed-use Development or Redevelopment	Development or redevelopment of property to be used for two or more different uses, all intended to be harmonious and complementary. An example is a high-rise building with retail shops on the first 2 floors, office space on floors 3 through 10, apartments on the next 10 floors, and a restaurant on the top floor.
Municipal Separate Storm Sewer System (MS4)	A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains), as defined in 40 CFR 122.26(b)(8): (1) Owned or operated by a state, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to state law...including special districts under state law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization or a designated and approved management agency under section 208 of the CWA) that discharges into waters of the United States; (2) Designed or used for collecting or conveying stormwater; (3) Which is not a combined sewer; and (4) Which is not part of a Publicly Owned Treatment Works (POTW), as defined in 40 CFR 122.2.
Municipal Corporation Yards, Vehicle Maintenance/Material Storage Facilities/	Any Permittee-owned or -operated facility, or portion thereof, that: (1) Conducts industrial activity, operates or stores equipment, and materials; (2) Performs fleet vehicle service/maintenance including repair, maintenance, washing, or fueling; and/or (3) Performs maintenance and/or repair of machinery/equipment;
National Pollutant Discharge Elimination System (NPDES)	A national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of the CWA.
Notice of Intent (NOI)	The application form by which dischargers seek coverage under General Permits, unless the General Permit requires otherwise.
Parking Lot	Land area or facility for the parking or storage of motor vehicles used for business, commerce, industry, or personal use.
Permittee/Permittees	Municipal agency/agencies that are named in and subject to the requirements of this Permit.
Permit Effective Date	The date at least 45 days after Permit adoption, provided the Regional Administrator of U.S. EPA Region 9 has no objection, whichever is later.

Pervious Pavement	Pavement that stores and infiltrates rainfall at a rate equal to immediately surrounding unpaved, landscaped areas, or that stores and infiltrates the rainfall runoff volume described in C.3.d.
Point Source	Any discernible, confined, and discrete conveyance including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operations, landfill leachate collection systems, vessel, or other floating craft, from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural stormwater runoff.
Pollutants of Concern	Pollutants that impair waterbodies listed under CWA section 303(d), pollutants associated with the land use type of a development, including pollutants commonly associated with urban runoff. Pollutants commonly associated with stormwater runoff include, but are not limited to, total suspended solids; sediment; pathogens (e.g., bacteria, viruses, protozoa); heavy metals (e.g., copper, lead, zinc, and cadmium); petroleum products and PAHs; synthetic organics (e.g., pesticides, herbicides, and PCBs); nutrients (e.g., nitrogen and phosphorus fertilizers); oxygen-demanding substances (e.g., decaying vegetation and animal waste); and trash.
Potable Water	Water that is safe for domestic use, drinking, and cooking.
Pre-Project Runoff Conditions	Stormwater runoff conditions that exist onsite immediately before development activities occur. This definition is not intended to be interpreted as that period before any human-induced land activities occurred. This definition pertains to redevelopment as well as initial development.
Public Development	Any construction, rehabilitation, redevelopment or reconstruction of any public agency project, including but not limited to, libraries, office buildings, roads, and highways.
Redevelopment	Land-disturbing activity that results in the creation, addition, or replacement of exterior impervious surface area on a site on which some past development has occurred.
Regional Monitoring Program (RMP)	A monitoring program aimed at determining San Francisco Bay Region receiving water conditions. The program was established in 1993 through an agreement among the Water Board, wastewater discharger agencies, dredgers, Municipal Stormwater Permittees and the San Francisco Estuary Institute to provide regular sampling of Bay sediments, water, and organisms for pollutants. The program is funded by the dischargers and managed by the San Francisco Estuary Institute.
Regional Project	A regional or municipal stormwater treatment facility that discharges into the same watershed that the Regulated Project does.
Regulated Projects	Development projects as defined in Provision C.3.b.ii.
Residential Housing Subdivision	Any property development of multiple single-family homes or of dwelling units intended for multiple families/households (e.g., apartments, condominiums, and town homes).

Retrofitting	Installing improved pollution control devices at existing facilities to attain water quality objectives.
Sediments	Soil, sand, and minerals washed from land into water, usually after rain.
Solid Waste	All putrescible and nonputrescible solid, semisolid, and liquid wastes as defined by California Government Code Section 68055.1 (h).
Source Control BMPs	Land use or site planning practices, or structural or nonstructural measures, that aim to prevent runoff pollution by reducing the potential for contact with rainfall runoff at the source of pollution. Source control BMPs minimize the contact between pollutants and urban runoff.
Standard Industrial Classification (SIC)	A federal system for classifying establishments by the type of activity in which they are engaged using a four-digit code.
Stormwater Pumping Station	Mechanical device (or pump) that is installed in MS4s or pipelines to discharge stormwater runoff and prevent flooding.
Stormwater Treatment System	Any engineered system designed to remove pollutants from stormwater runoff by settling, filtration, biological degradation, plant uptake, media absorption/adsorption or other physical, biological, or chemical process. This includes landscape-based systems such as grassy swales and bioretention units as well as proprietary systems.
Surface Water Ambient Monitoring Program (SWAMP)	The State Water Board's program to monitor surface water quality; coordinate consistent scientific methods; and design strategies for improving water quality monitoring, assessment, and reporting.
Total Maximum Daily Loads (TMDLs)	The maximum amount of a pollutant that can be discharged into a waterbody from all sources (point and nonpoint) and still maintain WQS. Under CWA section 303(d), TMDLs must be developed for all waterbodies that do not meet WQS even after application of technology-based controls, more stringent effluent limitations required by a state or local authority, and other pollution control requirements such as BMPs.
Toxicity Identification Evaluation (TIE)	TIE is a series of laboratory procedures used to identify the chemical(s) responsible for toxicity to aquatic life. These procedures are designed to decrease, increase, or transform the bioavailable fractions of contaminants to assess their contributions to sample toxicity. TIEs are conducted separately on water column and sediment samples.
Trash and Litter	Trash consists of litter and particles of litter. California Government Code Section 68055.1 (g) defines litter as all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the State, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling, or manufacturing.

Treatment	Any method, technique, or process designed to remove pollutants and/or solids from polluted stormwater runoff, wastewater, or effluent.
Waste Load Allocations (WLAs)	A portion of a receiving water's TMDL that is allocated to one of its existing or future point sources of pollution.
Water Quality Control Plan (Basin Plan)	The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State within the Region, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives and discharge prohibitions. The Basin Plan was duly adopted and approved by the State Water Board, U.S. EPA, and the Office of Administrative Law where required.
Water Quality Objectives	The limits or levels of water quality elements or biological characteristics established to reasonably protect the beneficial uses of water or to prevent pollution problems within a specific area. Water quality objectives may be numeric or narrative.
Water Quality Standards	State-adopted and U.S. EPA-approved water quality standards for waterbodies. The standards prescribe the use of the waterbody and establish the WQS that must be met to protect designated uses. Water quality standards also include the federal and State anti-degradation policy.
Wet Season	October 1 through April 30 of each year

ATTACHMENT A

MUNICIPAL REGIONAL STORMWATER PERMIT

FACT SHEET

FACT SHEET/RATIONALE
TECHNICAL REPORT

for

ORDER NO. R2-2015-0049

NPDES Permit No. CAS612008

Municipal Regional Stormwater NPDES Permit
and
Waste Discharge Requirements

for

The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County, the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District, which have joined together to form the Alameda Countywide Clean Water Program

The cities of Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut Creek, the towns of Danville and Moraga, Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District, which have joined together to form the Contra Costa Clean Water Program

The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and Santa Clara County, which have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program

The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood Control District, and San Mateo County, which have joined together to form the San Mateo Countywide Water Pollution Prevention Program

The cities of Fairfield and Suisun City, which have joined together to form the Fairfield-Suisun Urban Runoff Management Program

The City of Vallejo and the Vallejo Sanitation and Flood Control District

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I. CONTACT INFORMATION

Water Board Staff Contact: Dale Bowyer, 1515 Clay Street, Suite 1400, Oakland, CA 94612, 510-622-2323, 510-622-2501 (fax), email: dbowyer@waterboards.ca.gov

The Permit and other related documents can be downloaded from the Water Board website at:

http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/stormwater/Municipal/mrp_sw_reissuance.shtml

Comments can be electronically submitted to mrp.reissuance@waterboards.ca.gov.

All documents referenced in this Fact Sheet and in the Order are available for public review at the Water Board office, located at the address listed above. Public records are available for inspection during regular business hours, from 9:00 am to 4:00 pm, Monday through Friday, 12 - 1 pm excluded. To schedule an appointment to inspect public records, contact Melinda Wong at 510-622-2430.

II. PERMIT GOALS AND PUBLIC PROCESS

Goals

The Goals for the Municipal Regional Stormwater Permit (hereinafter, the Permit) include:

1. Continue regulating six Phase I municipal stormwater NPDES permits in one consistent permit that is regional in scope.
2. Include more specificity in NPDES permit requirements than the pre-2009 permits which lacked concrete requirements and thus did not result in the desired improvement of water quality. Continue requiring (A) stormwater management actions, (B) a specific level of implementation for each action or set of actions, and (C) reporting and effectiveness evaluation requirements for each action sufficient to determine compliance.
3. Incorporate the Stormwater Management Plan level of detail and specificity into the Permit. Stormwater Management Plans have always been considered integral to the municipal stormwater NPDES permits, but have not received the level of public review in the adoption process necessary relative to their importance in adequate stormwater pollutant management implementation.
4. Implement and enhance actions to control 303(d) listed pollutants, pollutants of concern, and achieve Waste Load Allocations adopted under Total Maximum Daily Loads.
5. Implement more specific and comprehensive stormwater monitoring, including monitoring for 303(d) listed pollutants.

Public Process

Water Board staff conducted stakeholder meetings with the Permittees and other interested parties to develop this Permit. These meetings included Water Board staff, representatives of the Permittees, and representatives of environmental groups.

Implementation

It is the Water Board's intent that this Permit shall ensure attainment of applicable water quality objectives and protection of the beneficial uses of receiving waters and associated habitat. This Permit requires that discharges shall not cause exceedances of water quality objectives nor shall they cause certain conditions to occur that create a condition of nuisance or water quality impairment in receiving waters. Accordingly, the Water Board is requiring that these standard requirements be addressed through the implementation of technically and economically feasible control measures to reduce pollutants in stormwater discharges to the maximum extent practicable as provided in section 402(p) of the CWA. In addition, this Permit contains water quality-based effluent limitations to implement TMDLs. Compliance with the Discharge Prohibitions, Receiving Water Limitations, and Provisions of this Permit is deemed compliance with the requirements of this Permit. If these measures, in combination with controls on other point and nonpoint sources of pollutants, do not result in attainment of applicable water quality objectives, the Water Board may invoke Provision C.1. and C.18 to impose additional conditions that require implementation of additional control measures.

Each of the Permittees is individually responsible for adoption and enforcement of ordinances and policies, for implementation of assigned control measures or best management practices (BMPs) needed to prevent or reduce pollutants in stormwater, and for providing funds for the capital, operation, and maintenance expenditures necessary to implement such control measures/BMPs within its jurisdiction. Each Permittee is also responsible for its share of the costs of the area-wide component of the countywide program to which the Permittee belongs. Enforcement actions concerning non-compliance with the Permit will be pursued against individual Permittee(s) responsible for specific violations of the Permit.

III. BACKGROUND

Early Permitting Approach

The federal Clean Water Act (CWA) was amended in 1987 to address urban stormwater runoff pollution of the nation’s waters. One requirement of the amendment was that many municipalities throughout the United States were obligated for the first time to obtain National Pollutant Discharge Elimination System (NPDES) permits for discharges of urban runoff from their Municipal Separate Storm Sewer Systems (MS4s). In response to the CWA amendment (and the pending federal NPDES regulations that would implement the amendment), the Water Board issued municipal stormwater Phase I permits in the early 1990s. These permits were issued to the entire county-wide urban areas of Santa Clara, Alameda, San Mateo and Contra Costa counties, rather than to individual cities over 100,000 population threshold. The cities chose to collaborate in countywide groups, pool

resources and expertise, and share information, public outreach and monitoring costs, among other tasks.

During the early permitting cycles, the county-wide programs developed many of the implementation specifics that were set forth in their Stormwater Pollution Prevention Management Plans (Plans). The permit orders were relatively simple documents that referred to the Plans for implementation details. Often specific aspects of permit and Plan implementation evolved during the five year permit cycle, with relatively significant changes approved at the Water Board staff level without significant public review and comment.

Merging Permit Requirements and Specific Requirements Previously Contained in Stormwater Management Plans

U.S. Environmental Protection Agency (U.S. EPA) stormwater rules for Phase I stormwater permits envisioned a process in which municipal stormwater management programs contained the detailed BMP and specific level of implementation information, and are reviewed and approved by the permitting agency before the municipal NPDES stormwater permits are adopted. The previous permits established a definition of a stormwater management program and required each Permittee to submit an urban runoff management plan and annual work plans for implementing its stormwater management program. An advantage to this approach was that it provided maximum flexibility for Permittees to tailor their stormwater management programs to reflect local priorities and needs. However, Water Board staff found it difficult to determine Permittees' compliance with the permits, due to the lack of specific requirements and measurable outcomes of some required actions in the plans.

Moreover, these stormwater management plans and amendments thereto made by the Permittees were not subject to public input, contrary to the U.S. Ninth Circuit Court's decision in the Phase II stormwater context that public participation is required for a stormwater management plan, because the substantive information about how an operator will reduce pollutants to the maximum extent possible was found in the stormwater management plan rather than the permit itself. (*Environmental Defense Center v. EPA* (9th Cir. 2003) 344 F.3d 832, 857.)

This Permit continues to modify these previous approaches by establishing the stormwater management program requirements and defining up front, as part of the Permit Development Process, the minimum acceptable elements of the municipal stormwater management program. The advantages of this approach are that it satisfies the public involvement requirements of both the federal Clean Water Act and the California Water Code. An advantage for Permittees and the public of this approach is that the permit requirements are known at the time of permit issuance and not left to be determined later through an iterative review and approval of stormwater management plan process, during which time was spent more on getting an acceptable plan than on-the-ground actions. While it may still be necessary to amend the Permit prior to expiration where allowed, any need to do this should be minimized.

This Permit does not include approval of all Permittees' stormwater management programs or annual reports as part of the administration of the Permit. To do so would require

significantly increased staff resources. Instead, minimum measures have been established to simplify assessment of compliance and allow the public to more easily assess each Permittee's compliance. Each Permit provision and its reporting requirements are written with this in mind. That is, each provision establishes the required actions, minimum implementation levels (i.e., minimum percentage of facilities inspected annually, escalating enforcement, reporting requirements for tracking projects, number of monitoring sites), and specific reporting elements to substantiate that these implementation levels have been met. Water Board staff will evaluate each individual Permittee's compliance through annual report review and the audit process.

The challenge in drafting the Permit is to provide the flexibility described above considering the different sizes and resources of the numerous Permittees, while ensuring that the Permit is still enforceable. To achieve this, the Permit frequently prescribes minimum measurable outcomes, while providing Permittees with flexibility in the approaches they use to meet those outcomes. Enforceability has been found to be a critical aspect of the Permit. A balance between flexibility and enforceability has been crafted into the Permit.

Current Permit Approach

As stated above, because stormwater management plans were legally an integral part of the permits and were subject to complete public notice, review and comment, this permit reissuance continues to incorporate those plan level details in the Permit, thus merging the Permittees' stormwater management plans into the Permit in one document. This Permit specifies the following: 1) requirements to effectively prohibit non-stormwater discharges into the storm drain system, pursuant to CWA § 402(p)(3)(B)(ii); 2) technology-based effluent limitations that require controls to reduce the discharge of pollutants to the "maximum extent practicable" (MEP)[1] pursuant to CWA § 402(p)(3)(B)(iii); and 3) water quality-based effluent limitations (WQBELs) pursuant to CWA § 402(p)(3)(B)(iii), which authorizes the inclusion of "such other provisions as the Administrator or the State determines appropriate for the control of [] pollutants," for pesticides, trash, mercury, PCBs, and bacteria, in addition to technology-based effluent limitations. WQBELs for these pollutants are appropriate for control because water quality standards are not being met and these pollutants have impaired Bay Area waters. The Permit includes requirements for the following components:

- Discharge Prohibitions and Receiving Water Limitations

[1] The Clean Water Act and its regulations have not specifically defined "MEP"; rather, it is a flexible and evolving standard. Congress established this flexible MEP standard so that administrative bodies would have "the tools to meet the fundamental goals of the Clean Water Act in the context of storm water pollution."(*Building Industry Ass'n of San Diego County v. State Water Resources Control Board* (2004) 124 Cal.App.4th 866, 884.) This standard was designed to allow permit writers flexibility to tailor permits to the site-specific nature of MS4s and to use a combination of pollution controls that may be different in different permits. (*In re City of Irving, Texas, Municipal Storm Sewer System* (July 16, 2001) 10 E.A.D. 111 (E.P.A.).) The MEP standard is also expected to evolve in light of programmatic improvements, new source control initiatives, and technological advances that serve to improve the overall effectiveness of storm water management programs in reducing pollutant loading to receiving waters. This is consistent with USEPA's interpretation of storm water management programs. As explained by USEPA in its 1990 rulemaking, "EPA anticipates that storm water management programs will evolve and mature over time" (55 Fed.Reg. 47990, 48052 (Nov. 16, 1990)).

- Municipal Operations
- New Development and Redevelopment
- Industrial and Commercial Site Controls
- Illicit Discharge and Elimination
- Construction Site Controls
- Public Information and Outreach
- Water Quality Monitoring
- Pesticides Toxicity Controls
- Trash Reduction
- Mercury Controls
- PCBs Controls
- Copper Controls
- Pacifica and San Mateo County Beach and San Pedro Creek Bacteria Controls for Beach and San Pedro Creek
- Exempt and Conditionally Exempt Discharges
- San Mateo County Discharges to ASBS

IV. ECONOMIC ISSUES

California Water Code (CWC) section 13241 requires the Water Board to consider certain factors, including economic considerations, in the adoption of water quality objectives. CWC section 13263 requires the Water Board to take into consideration the provisions of CWC section 13241 in adopting waste discharge requirements.

In *City of Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, the California Supreme Court considered whether regional water boards must comply with CWC section 13241 when issuing waste discharge requirements under CWC section 13263(a) by taking into account the costs a permittee will incur in complying with the permit requirements. The Court concluded that whether it is necessary to consider such cost information "depends on whether those restrictions meet or exceed the requirements of the federal Clean Water Act." (*Id*. at p. 627.) The Court ruled that regional water boards may not consider the factors in CWC section 13241, including economics, to justify imposing pollutant restrictions that are less stringent than applicable federal law requires. (*Id*. at pp. 618, 626-627 ["[Water Code section 13377 specifies that [ ] discharge permits issued by California's regional boards must meet the federal standards set by federal law. In effect, section 13377 forbids a regional board's consideration of any economic hardship on the part of the permit holder if doing so would result in the dilution of the requirements set by Congress in the Clean Water Act...Because CWC section 13263 cannot authorize what federal law forbids, it cannot authorize a regional board, when issuing a [ ] discharge permit, to use compliance costs to justify pollutant restrictions that do not comply with federal clean water standards."]). However, when pollutant restrictions in an NPDES permit are more stringent than federal law requires, CWC section 13263 requires that the regional water boards consider the factors described in CWC section 13241 as they apply to those specific restrictions.

As discussed in Section V.C., State Mandates, the Water Board finds that the requirements in this Order are not more stringent than the minimum federal requirements. Among other requirements, federal law requires MS4 permits to include requirements to effectively prohibit non-storm water discharges into the MS4s, in addition to requiring controls to reduce the discharge of pollutants in stormwater to the MEP, and other provisions as USEPA or the State determines are appropriate for the control of pollutants in MS4 discharges.

The requirements in this Order may be more specific or detailed than those enumerated in federal regulations under 40 CFR 122.26 and guidance; however, the requirements have been designed to be consistent with and within the federal statutory mandates described in CWA section 402(p)(3)(B)(ii) and (iii) and the related federal regulations and guidance. Consistent with federal law, all of the conditions in this Order could have been included in a permit adopted by USEPA in the absence of the in lieu authority of California to issue NPDES permits.

Moreover, the inclusion of numeric WQBELs in this Order does not cause this Order to be more stringent than federal law. Federal law authorizes both narrative and numeric effluent limitations to meet state water quality standards. The inclusion of WQBELs as discharge specifications in an NPDES permit in order to achieve compliance with water quality standards is not a more stringent requirement than the inclusion of BMP-based permit limitations to achieve water quality standards (State Water Board Order No. WQ 2006-0012 (Boeing)). Therefore, consideration of the factors set forth in CWC section 13241 is not required for permit requirements to implement the effective prohibition on the discharge of non-stormwater discharges into the MS4 or for controls to reduce the discharge of pollutants in stormwater to the MEP, or other provisions that the Water Board has determined appropriate to control such pollutants, as those requirements are mandated by federal law.

While the Water Board need not consider costs under CWC section 13241, the Water Board nevertheless has considered cost information, especially since it is a consideration in the implementation of technology controls to the MEP.

In 2000, the State Water Board issued a precedential order (Order WQ 2000-11 (Cities of Bellflower, et al.)) stating that cost of compliance with the programs and requirements of a municipal stormwater permit is a relevant factor in determining MEP. The Order also explicitly stated that a cost benefit analysis is not required. The State Water Board discussed costs as follows:

> While the standard of MEP is not defined in the storm water regulations or the Clean Water Act, the term has been defined in other federal rules. . . . .
>
> These definitions focus mostly on technical feasibility, but cost is also a relevant factor. There must be a serious attempt to comply, and practical solutions may not be lightly rejected. If, from the list of BMPs, a permittee chooses only a few of the least expensive methods, it is likely that MEP has not been met. On the other hand, if a permittee employs all applicable BMPs except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit to be derived, it would have met the standard. MEP requires permittees to choose effective

> BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive. Thus while cost is a factor, the Regional Water Board is not required to perform a cost-benefit analysis.

(State Water Board Order WQ 2000-11, supra, p.20.) The cost of complying with TMDL waste load allocations is not required to be considered since TMDLs are not subject to the MEP standard. Federal law requires that NPDES permits contain effluent limitations consistent with the assumptions of any applicable wasteload allocation in a TMDL. (40 C.F.R. §122.44(d)(1)(vii)(B).) With that background, we turn to economic considerations.

Economic discussions of urban runoff management programs tend to focus on costs incurred by municipalities in developing and implementing the programs. This is appropriate, and these costs are significant and a major issue for the Permittees. However, when considering the cost of implementing the urban runoff programs, it is also important to consider the alternative costs incurred by not fully implementing the programs, as well as the benefits that result from program implementation.

It is very difficult to ascertain the true cost of implementation of the Permittees' urban runoff management programs because of inconsistencies in reporting by the Permittees. Reported costs of compliance for the same program element can vary widely from Permittee to Permittee, often by a very wide margin that is not easily explained.[2] Despite these problems, efforts have been made to identify urban runoff management program costs, which can be helpful in understanding the costs of program implementation.

In 1999, U.S. EPA reported on multiple studies it conducted to determine the cost of urban runoff management programs. A study of Phase II municipalities determined that the annual cost of the Phase II program was expected to be $9.16 per household. U.S. EPA also studied 35 Phase I municipalities, finding costs to be similar to those anticipated for Phase II municipalities, at $9.08 per household annually.[3]

A study on program cost was also conducted by the Los Angeles Regional Water Quality Control Board (LARWQCB), where program costs reported in the municipalities' annual reports were assessed. The LARWQCB estimated that average per household cost to implement the MS4 program in Los Angeles County was $12.50.

The State Water Board also commissioned a study by the California State University, Sacramento, to assess costs of the Phase I MS4 program. This study is current and includes an assessment of costs incurred by the City of Encinitas in implementing its program. Annual cost per household in the study ranged from $18-46, with the City of Encinitas representing the upper end of the range.[4] The cost of the City of Encinitas' program is understandable, given the City's coastal location, reliance on tourism, and consent decree with environmental groups regarding its program. For these reasons, as well as the general recognition the City of Encinitas receives for implementing a superior program, the City's program cost can be considered as the high end of the spectrum for Permittee urban runoff management program costs.

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2 LARWQCB, 2003. Review and Analysis of Budget Data Submitted by the Permittees for Fiscal Years 2000-2003.p.2

3 Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68791-68792.

4 State Water Board, 2005. NPDES Stormwater Cost Survey. P. ii

It is important to note that reported program costs are not all attributable to compliance with MS4 permits. Many program components, and their associated costs, existed before any MS4 permits were issued. For example, street sweeping and trash collection costs cannot be solely or even principally attributable to MS4 permit compliance, since these practices have long been implemented by municipalities. Therefore, true program cost resulting from MS4 permit requirements is some fraction of reported costs. The California State University, Sacramento study found that only 38% of program costs are new costs fully attributable to MS4 permits. The remainder of program costs were either pre-existing or resulted from enhancement of pre-exiting programs.[5] The County of Orange found that even lesser amounts of program costs are solely attributable to MS4 permit compliance, reporting that the amount attributable to implement its Drainage Area Management Plan, its municipal stormwater permit requirements, is less than 20% of the total budget. The remaining 80% is attributable to pre-existing programs.[6]

It is also important to acknowledge that the vast majority of costs that will be incurred as a result of implementing the Order are not new. Urban runoff management programs have been in place in this region for over 25 years. Any increase in cost to the Permittees will be incremental in nature.

Urban runoff management programs cannot be considered in terms of their costs only. The programs must also be viewed in terms of their value to the public. For example, household willingness to pay for improvements in fresh water quality for fishing and boating has been estimated by U.S. EPA to be $158-210 annually or $13 - $17.50 monthly.[7] This estimate can be considered conservative, since it does not include important considerations such as marine waters benefits, wildlife benefits, or flood control benefits. The California State University, Sacramento, study corroborates U.S. EPA's estimates, reporting annual household willingness to pay for statewide clean water to be $180 or $15 monthly.[8] When viewed in comparison to household costs of existing urban runoff management programs, these household willingness to pay estimates exhibit that per household costs incurred by Permittees to implement their urban runoff management programs remain reasonable.

Another important way to consider urban runoff management program costs is to consider the implementation cost in terms of costs incurred by not improving the programs. Urban runoff in southern California has been found to cause illness in people bathing near storm drains.[9] A study of south Huntington Beach and north Newport Beach found that an illness rate of about 0.8% among bathers at those beaches resulted in about $3 million annually in health-related expenses.[10] Extrapolation of such numbers to the beaches and other water contact recreation in San Francisco Bay and the tributary creeks of the region could result in huge expenses to the public.

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5 Ibid. P. 58.

6 County of Orange, 2000. A NPDES Annual Progress Report. P. 60. More current data from the County of Orange is not used in this discussion because the County of Orange no longer reports such information.

7 Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68793.

8 State Water Board, 2005. NPDES Stormwater Cost Survey. P. iv.

9 Haile, R.W., et al, 1996. An Epidemiological Study of Possible Adverse Health Effects of Swimming in Santa Monica Bay. Santa Monica Bay Restoration Project.

10 Los Angeles Times, May 2, 2005. Here's What Ocean Germs Cost You: A UC Irvine Study Tallies the Cost of Treatment and Lost Wages for Beachgoers Who Get Sick.

Urban runoff and its impact on receiving waters also places a cost on tourism. The California Division of Tourism has estimated that each out-of-state visitor spends $101.00 a day. The experience of Huntington Beach provides an example of the potential economic impact of poor water quality. Approximately 8 miles of Huntington Beach were closed for two months in the middle of summer of 1999, impacting beach visitation and undoubtedly impacting the local economy.

Finally, it is important to consider the benefits of urban runoff management programs in conjunction with their costs. A study conducted by USC/UCLA assessed the costs and benefits of implementing various approaches for achieving compliance with the MS4 permits in the Los Angeles Region. The study found that non-structural systems would cost $2.8 billion but provide $5.6 billion in benefit. If structural systems were determined to be needed, the study found that total costs would be $5.7 to $7.4 billion, while benefits could reach $18 billion.[11] Costs are anticipated to be borne over many years – probably ten years at least. As can be seen, the benefits of the programs are expected to considerably exceed their costs. Such findings are corroborated by U.S. EPA, which found that the benefits of implementation of its Phase II stormwater rule would also outweigh the costs.[12]

Considering the above, the Water Board finds that the requirements in this Order are reasonably necessary to protect beneficial uses identified in the Basin Plan and the economic information related to costs of compliance supports protecting those beneficial uses.

V. RELEVANT STATUTES, REGULATIONS, PLANS AND POLICIES

A. Legal Authorities.

This Order is issued pursuant to section 402 of the CWA and implementing regulations adopted by the U.S. EPA and chapter 5.5, division 7 of the CWC (commencing with section 13370). This Order serves as an NPDES permit for point source discharges to surface waters. This Order also serves as waste discharge requirements pursuant to article 4, chapter 4, division 7 of the CWC (commencing with section 13260).

In addition to the legal authority citations below, they are also provided with each permit provision in this Fact Sheet.

CWA 402(p)(3)(B)(ii) – The CWA requires in section 402(p)(3)(B)(ii) that permits for discharges from municipal storm sewers "shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers."

CWA 402(p)(3)(B)(iii) – The CWA requires in section 402(p)(3)(B)(iii) that permits for discharges from municipal storm sewers "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."

[11] LARWQCB, 2004. Alternative Approaches to Stormwater Control.
[12] Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68791.

40 CFR 122.26(d)(2)(i)(B,C,E, and F) – Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B,C,D,E, and F) require that each Permittee's permit application "shall consist of: (i) Adequate legal authority. A demonstration that the applicant can operate pursuant to legal authority established by statute, ordinance or series of contracts which authorizes or enables the applicant at a minimum to: […] (B) Prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer; (C) Control through ordinance, order or similar means the discharge to a municipal separate storm sewer of spills, dumping or disposal of materials other than storm water; (D) Control through interagency agreements among co-applicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system; (E) Require compliance with condition in ordinances, permits, contracts or orders; and (F) Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer."

40 CFR 122.26(d)(2)(iv) – Federal NPDES regulation 40 CFR 122.26(d)(2)(iv) requires "a comprehensive planning process which involves public participation and where necessary intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate. The program shall also include a description of staff and equipment available to implement the program. […] Proposed programs may impose controls on a system wide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. […] Proposed management programs shall describe priorities for implementing controls."

40 CFR 122.26(d)(2)(iv)(A -D) – Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A - D) require municipalities to implement controls to reduce pollutants in urban runoff from new development and significant redevelopment, construction, and commercial, residential, industrial, and municipal land uses or activities. Control of illicit discharges is also required.

CWC 13377 – CWC section 13377 requires that "[n]otwithstanding any other provision of this division, the state board or the regional boards shall, as required or authorized by the CWA, as amended, issue waste discharge requirements and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitation necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance."

B. State and Federal Regulations, Policies, and Plans

1. Water Quality Control Plan. The CWA requires the Water Board to establish water quality standards for each water body in its region. Water quality standards include beneficial uses, water quality objectives and criteria that are established at levels sufficient to protect beneficial uses, and an antidegradation policy to prevent degrading of waters. The Water Board adopted the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan), which designates beneficial uses, establishes water quality objectives, and contains implementation programs

and policies to achieve those objectives for all waters addressed through the plan. The Urban Runoff Management, Comprehensive Control Program section of the Basin Plan requires the Permittees to address existing water quality problems and prevent new problems associated with urban runoff through the development and implementation of a comprehensive control program focused on reducing current levels of pollutant loading to storm drains to the maximum extent practicable. The Basin Plan's comprehensive program requirements are designed to be consistent with federal regulations (40 CFR Parts 122-124) and are implemented through issuance of NPDES permits to owners and operators of MS4s. Pursuant to Water Code sections 13263 and 13377, the requirements in this Order implement the Basin Plan.

2. Water Quality Control Plan for Ocean Waters of California, California Ocean Plan

   In 1972, the State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan). The State Water Board adopted the most recent amended Ocean Plan on October 16, 2012, and it was approved by the Office of Administrative Law and USEPA. The Ocean Plan is applicable, in its entirety, to ocean waters of the state. In order to protect beneficial uses, the Ocean Plan establishes water quality objectives and a program of implementation. Pursuant to Water Code sections 13263 and 13377, the requirements of this Order implement the Ocean Plan.

   The Ocean Plan prohibits the discharge of waste to designated Areas of Special Biological Significance (ASBS). ASBS are ocean areas designated by the State Water Board as requiring special protection through the maintenance of natural water quality. The California Ocean Plan states that the State Water Board may grant an exception to California Ocean Plan provisions where the State Water Board determines that the exception will not compromise protection of ocean waters for beneficial uses and the public interest will be served. In 2012, the State Water Board adopted Resolutions 2012-0012 and 2012-0031 (ASBS Exception), which grant an exception to the Ocean Plan prohibition on discharges to ASBS for a limited number of applicants, including San Mateo County for stormwater discharges into the James V. Fitzgerald Marine Reserve ASBS. The ASBS Exception contains "Special Protections" to maintain natural water quality and protect the beneficial uses of the ASBS. In order to legally discharge into an ASBS, San Mateo County must comply with the terms of the Special Protections and obtain coverage under this Order. This Order incorporates the terms of the Special Protections for San Mateo's discharges into the ASBS.

3. National Toxics Rule (NTR) and California Toxics Rule (CTR). U.S. EPA adopted the NTR on December 22, 1992, and amended it on May 4, 1995 and November 9, 1999. About 40 criteria in the NTR apply in California. On May 18, 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and incorporated the previously adopted NTR criteria that applied in the State. U.S. EPA amended the CTR on February 13, 2001. These rules contain water quality criteria for priority pollutants.

4. Antidegradation Policy. Federal regulations (40 CFR 131.12) require that the state water quality standards include an antidegradation policy consistent with the federal antidegradation policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining the Quality of the Waters of the State"). State Water Board Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law.

   The Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Resolution No. 68-16 and 40 CFR section 131.12 require the Water Board to maintain high quality waters of the State unless degradation is justified based on specific findings. First, the Water Board must ensure that "existing instream uses and the level of water quality necessary to protect the existing uses" are maintained and protected. Second, if the baseline quality of a water body for a given constituent exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected through the requirements of the Order unless the Water Board makes findings that (1) any lowering of the water quality is necessary to accommodate important economic or social development in the area in which the waters are located; (2) water quality adequate to protect existing uses fully is assured; and (3) the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control are achieved.

   The Water Board must also comply with any requirements of State Water Board Resolution No. 68-16 beyond those imposed through incorporation of the federal antidegradation policy. In particular, the Water Board must find that not only present, but also anticipated future uses of water are protected, and must ensure best practicable treatment or control of the discharges. The baseline quality considered in making the appropriate findings is the best quality of the water since 1968, the year of the adoption of Resolution No. 68-16, or a lower level if that lower level was allowed through a permitting action that was consistent with the federal and state antidegradation policies. The discharges permitted in this Order are consistent with the antidegradation provisions of 40 CFR section 131.12 and Resolution 68-16 as set out below:

   a. Many of the waters within the area covered by this Order are impaired and by multiple pollutants discharged through MS4s and are not high quality waters with regard to these pollutants. In most cases, there are insufficient data to determine whether these water bodies were impaired as early as 1968, but the limited available data shows impairment dating back for more than two decades. Many such water bodies are listed on the State's CWA Section 303(d) List and the Water Board has established TMDLs to address the impairments (see V.6). This Order ensures that instream (beneficial) water uses and the level of water quality necessary to protect the existing uses is maintained and protected. This Order requires the Permittees to comply with permit provisions to implement the wasteload allocations set forth in the TMDLs in order to restore the beneficial uses of the impaired water bodies

consistent with the assumptions and requirements of the TMDLs. This Order further requires compliance with receiving water limitations to meet water quality standards in the receiving water either by showing compliance or by implementing actions to comply with water-quality based requirements (limitations) set forth in specific pollutants of concern provisions.

b. To the extent that some of the water bodies within the area covered by this Order are high quality waters with regard to some constituents, the Board finds as follows:

Allowing limited degradation of high quality water bodies through MS4 discharges is necessary to accommodate important economic or social development in the area and is consistent with the maximum benefit to the people of the state. The discharge of stormwater in certain circumstances is to the maximum benefit to the people of the State because it can assist with maintaining instream flows that support beneficial uses, may spur the development of multiple-benefit projects, and may be necessary for flood management, and public safety as well as to accommodate development in the area. The alternative – capturing all stormwater from all storm events – would be an enormous opportunity cost that would preclude MS4 permittees from spending substantial funds on other important social needs. The Order ensures that any limited degradation does not affect existing and anticipated future uses of the water and does not result in water quality less than established standards. The Order requires compliance with receiving water limitations that act as a floor to any limited degradation.

The Order requires the highest statutory and regulatory requirements and requires that the Permittees meet best practicable treatment or control. The Order prohibits all non-stormwater discharges, with a few enumerated exceptions, through the MS4 to the receiving waters. As required by 40 CFR section 122.44(a), the Permittees must comply with the "maximum extent practicable" technology-based standard set forth in CWA section 402(p), and implement extensive minimum control measures in a stormwater management program. Recognizing that best practicable treatment or control may evolve over time, the Order includes new and more specific requirements as compared to Order No. R2-2009-0074.

5. Anti-backsliding Regulations. Section 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. While this Order allows implementation of alternative compliance paths in Provisions C.9 to C.12 and C.1 to comply with receiving water limitations for pollutants and receiving waters identified therein, the availability of the alternatives and the corresponding availability of additional time to come into compliance with receiving water limitations does not violate the anti-backsliding provisions.

The receiving water limitations provisions of this Order are imposed under section 402(p)(3)(B) of the Clean Water Act rather than based on best professional judgment, or based on section 301(b)(1)(C) or sections 303(d) or (e), and are, accordingly, not subject to the anti-backsliding requirements of section 402(o). Although the non-applicability is less clear with respect to the regulatory anti-backsliding provisions in 40 CFR 122.44(l), the regulatory history suggests that USEPA's intent was to establish the anti-backsliding regulations with respect to evolving technology standards for traditional point sources. (See, e.g., 44 Fed.Reg. 32854, 32864 (Jun. 7, 1979)). Assuming the regulatory anti-backsliding provisions apply, it is not violated for two reasons. First, the actual requirements in Provisions C.9 to C.12 and C.1 are as or more stringent than the requirements in the previous permit. Second, to the extent explicitly allowing compliance with the receiving water limitations through implementation of C.9 to C.12 and C.14 is comparable to and less stringent than what the previous permit required, the exception to backsliding based on new information and changed circumstances since the last permit applies.

The alternative compliance paths in Provisions C.9 to C.12 and C.14 of this Order were informed by new information available to the Board from experience and knowledge gained through implementation of actions required by the previous permit and results of source identification studies and control measure effectiveness studies since the adoption of the previous permit. In particular, the Water Board recognizes the need and significance of explicitly allowing time to plan, design, fund, operate and maintain controls necessary to attain water quality improvements and comply with receiving water limitations. This is especially true where, as here, the alternative compliance paths allowed by this Order requires implementation of controls that are more stringent than controls of the previous permit. Thus, even if the receiving water limitations are subject to anti-backsliding requirements, they were revised based on changed circumstances and new information that would support an exception to the anti-backsliding provisions. (40 C.F.R. § 122.44(l)(1); 40 C.F.R. § 122.62(a)(2); 40 C.F.R. §122.44(l)(2)(i)(B)(1)).

6. Impaired Waters on CWA 303(d) List. CWA section 303(d)(1) requires each state to identify specific water bodies within its boundaries where water quality standards are not being met or are not expected to be met after implementation of technology-based effluent limitations on point sources. Water bodies that do not meet water quality standards are considered impaired and are placed on the state's "303(d) List." Periodically, U.S. EPA approves the state's 303(d) List. In October 2011, U.S. EPA approved a revised list of impaired waters prepared pursuant to CWA section 303(d), which requires identification of specific water bodies where it is expected that water quality standards will not be met after implementation of technology-based effluent limitations on point sources. Where it has not done so already, the Water Board plans to adopt Total Maximum Daily Loads (TMDLs) for pollutants on the 303(d) list. TMDLs establish wasteload allocations for point sources and load allocations for non-point sources, and are established to achieve the water quality standards for the impaired waters.

The Water Board has established TMDLs for pesticide-related toxicity, mercury, PCBs, pathogens, among others, to remedy water quality impairments in various water bodies in and around San Francisco Bay. These TMDLs identify MS4 discharges as a source of pollutants to these water bodies, and, as required, establish wasteload allocations (WLAs) for MS4 discharges to reduce the amount of pollutant discharged to receiving waters. CWA section 402(p)(3)(B)(iii) requires the Water Board to impose permit conditions, including: "management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." Federal regulations also require that NDPES permits contain WQBELs consistent with the assumptions and requirements of all available WLAs (40 CFR 122.44(d)(1)(vii)(B)). CWC sections 13263 and 13377 also require that permits include limitations necessary to implement water quality control plans. Therefore, this Order includes WQBELs and other provisions to implement the TMDL WLAs assigned to Permittees regulated by this Order.

7. California Environmental Quality Act. The action to adopt an NPDES Permit is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code, § 21000 et seq.) ("CEQA") pursuant to Water Code section 13389, since the adoption or modification of a NPDES permit for an existing source is statutorily exempt and this Order only serves to implement a NPDES permit (*County of Los Angeles v. State Water Resources Control Board (2006) 143 Cal.App.4th 985*; *Pacific Water Conditioning Assn, Inc. v. City Council of City of Riverside* (1977) 73 Cal.App.3d 546, 555-556.).

8. Endangered Species Act Requirements. This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code §§ 2050 to 2097) or the Federal Endangered Species Act (16 U.S.C.A. §§ 1531 to 1544). This Order requires compliance with limits, receiving water limits, and other requirements to protect the beneficial uses of waters of the State, including protecting rare, threatened, or endangered species. Each Permittee is responsible for meeting all applicable federal and State Endangered Species Act requirements.

C. State Mandates

Article XIII B, Section 6(a) of the California Constitution provides that whenever "any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse that local government for the costs of the program or increased level of service." The requirements in this Permit do not constitute an unfunded local government mandate subject to subvention under Article XIIIB, Section (6) of the California Constitution for several reasons.

First, this Permit implements federally-mandated requirements under CWA section 402, subdivision (p)(3)(B). (33 U.S.C. § 1342(p)(3)(B).) This includes federal

requirements to effectively prohibit non-stormwater discharges, to reduce the discharge of pollutants to the maximum extent practicable, and to include such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. Federal cases have held that these provisions require the development of permits and permit provisions on a case-by-case basis to satisfy federal requirements. (*Natural Resources Defense Council, Inc. v. USEPA* (9th Cir. 1992) 966 F.2d 1292, 1308, fn. 17.) The authority exercised under this Permit is not reserved state authority under the CWA's savings clause (cf. *Burbank v. State Water Resources Control Bd*. (2005) 35 Cal.4th 613, 627-628 [relying on 33 U.S.C. § 1370, which allows a state to develop requirements that are not less stringent than federal requirements]), but instead, is part of a federal mandate to develop pollutant reduction requirements for MS4. To this extent, it is entirely federal authority that forms the legal basis to establish the permit provisions. (See, *City of Rancho Cucamonga v. Regional Water Quality Control Bd.-Santa Ana Region* (2006) 135 Cal.App.4th 1377, 1389; *Building Industry Association of San Diego County v. State Water Resources Control Bd*. (2004) 124 Cal.App.4th 866, 882-883.)

The requirements of this Permit do not constitute a new program or a higher level of service as compared to the requirements contained in the previous permits. The overarching requirement to impose controls to reduce the pollutants in discharges from MS4s is dictated by the CWA and is not new to this permit cycle (33 USC section 1342(p)(3)(B)). The inclusion of new and advanced measures as the MS4 programs evolve and mature over time is anticipated under the CWA (55 FR 47990, 48052 (Nov. 16, 1990)), and to the extent requirements in this Permit are interpreted as new advanced measures, they do not constitute a new program or higher level of service.

The maximum extent practicable standard under CWA section 402(p)(3)(B)(iii) is a flexible standard that balances a number of considerations, including technical feasibility, cost, public acceptance, regulatory compliance, and effectiveness. (*Building Ind. Ass'n. of San Diego v. State Water Resources Control Bd*. (2004) 124 Cal.App.4th 866, 873-874, 889.) Such considerations change over time with advances in technology and with experience gained in stormwater management (55 FR 47990, 48052 (Nov. 16, 1990)). Accordingly, the determination of whether the Permit conditions exceed the requirements of federal law cannot be based on a point by point comparison of the permit conditions and the six minimum measures that are required "at a minimum" to reduce pollutants to the maximum extent practicable and to protect water quality (40 C.F.R. §122.34). Likewise, individual permit provisions cannot be considered in isolation. When implementing the federal requirement to reduce pollutants to the maximum extent practicable, the entire permit must be evaluated as a whole. The Second Appellate District of the Court of Appeal has affirmed this approach in a case that is now pending before the California Supreme Court. (*State Department of Finance v. Commission on State Mandates* (2014) 316 P.3d 1218, review granted (2013) 220 Cal.App.4th 740.)

Furthermore, in the analogous Phase II MS4 context, U.S. EPA has issued an MS4 Permit Improvement Guide (April 2010, available at: http://www.epa.gov/npdes/pubs/ms4permit_improvement_guide.pdf) that

recommends many provisions for Phase II MS4 permits not explicitly specified in the six minimum measures established at Code of Federal Regulations, title 40, section 122.34.

The requirements of the Permit are necessary to reduce the discharge of pollutants to the MEP. The Water Board finds that the requirements of the Permit are practicable, do not exceed federal law, and thus do not constitute an unfunded mandate. These findings are the expert conclusions of the principal state agency charged with implementing the NPDES program in California (CWC sections 13001, 13370). The provisions in this to effectively prohibit non-stormwater discharges are also mandated by the CWA (33 USC section 1342(p)(3)(B)(ii)). Likewise, the provisions of this Permit to implement TMDLs are federal mandates. The CWA requires TMDLs to be developed for waterbodies that do not meet federal water quality standards. (33 U.S.C. § 1313(d).) Once U.S. EPA or a state develops a TMDL, federal law requires that permits must contain effluent limitations consistent with the assumptions of any applicable WLA. (40 CFR 122.44(d)(1)(vii)(B).)

Second, the Permittees' obligations under this Permit are similar to the obligations of nongovernmental dischargers who are issued NPDES permits for stormwater discharges. With a few inapplicable exceptions, the CWA regulates the discharge of pollutants from point sources (33 U.S.C. § 1342), and the Porter-Cologne regulates the discharge of waste (Water Code section 13263), both without regard to the source of the pollutant or waste. As a result, the costs incurred by local agencies to protect water quality reflect an overarching regulatory scheme that places similar requirements on governmental and nongovernmental dischargers. (See *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 57-58 [finding comprehensive workers compensation scheme did not create a cost for local agencies that was subject to state subvention].)

Third, the Permittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in CWA section 301, subdivision (a) (33 U.S.C. § 1311(a)) and in lieu of numeric restrictions on their discharges. To the extent Permittees have voluntarily availed themselves of the Permit, the program is not a state mandate. (Accord *County of San Diego v. State of California* (1997) 15 Cal.4th 68, 107-108.) Likewise, the Permittees have voluntarily sought a program-based municipal stormwater permit in lieu of a numeric limits approach. (See *City of Abilene v. U.S. EPA* (5th Cir. 2003) 325 F.3d 657, 662-663 [noting that municipalities can choose between a management permit or a permit with numeric limits].) The Permittees' voluntary decision to file a Report of Waste Discharge proposing a program-based permit is a voluntary decision not subject to subvention. (See *Environmental Defense Center v. U.S. EPA* (9th Cir. 2003) 344 F.3d 832, 845-848.)

Fourth, the Permittees' responsibility for preventing discharges of waste that can create conditions of pollution or nuisance from conveyances that are within their ownership or control under State law predates the enactment of Article XIIIB, Section (6) of the California Constitution.

Finally, even if any of this Permit's provisions could be considered unfunded mandates, under Government Code section 17556, subdivision (d), a state mandate is not subject to reimbursement if the local agency has the authority to charge a fee. The Permittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with this Order, subject to certain voting requirements contained in the California Constitution. (See Cal. Const., Art. XIII D, section 6, subd. (c); see also *Howard Jarvis Taxpayers Ass'n v. City of Salinas* (2002) 98 Cal.App.4th 1351, 1358-1359.) The Fact Sheet demonstrates that numerous activities contribute to the pollutant loading in the MS4. Permittees can levy service charges, fees, or assessments on these activities, independent of real property ownership. (See, e.g., *Apartment Association of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, 842 [upholding inspection fees associated with renting property].) The ability of a local agency to defray the cost of a program without raising taxes indicates that a program does not entail a cost subject to subvention. (*County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487-488.)

D. Statewide General Industrial and Construction Stormwater Permits

The State Water Board has issued NPDES general permits for the regulation of stormwater discharges associated with industrial activities and construction activities. To effectively implement the New Development (and significant redevelopment) and Construction Controls, Illicit Discharge Controls, and Industrial and Commercial Discharge Controls components in this Permit, the Permittees will conduct investigations and local regulatory activities at industrial and construction sites covered by these general permits. However, under the CWA, the Water Board cannot delegate its own authority to enforce these general permits to the Permittees. Therefore, Water Board staff intends to work cooperatively with the Permittees to ensure that industries and construction sites within the Permittees' jurisdictions are in compliance with applicable general permit requirements and are not subject to uncoordinated stormwater regulatory activities.

E. Regulated Parties

Each of the Permittees listed in this Permit owns or operates a MS4, through which it discharges urban runoff into waters of the United States within the San Francisco Bay Region. These MS4s fall into one or more of the following categories: (1) a medium or large MS4 that services a population of greater than 100,000 or 250,000 respectively; or (2) a small MS4 that is "interrelated" to a medium or large MS4; or (3) an MS4 which contributes to a violation of a water quality standard; or (4) an MS4 which is a significant contributor of pollutants to waters of the United States.

F. Permit Coverage

The Permittees each have jurisdiction over and maintenance responsibility for their respective MS4s in the Region. Federal, State or regional entities within the Permittees' boundaries, not currently named in this Permit, operate storm drain facilities and/or discharge stormwater to the storm drains and watercourses covered

by this Permit. The Permittees may lack jurisdiction over these entities. Consequently, the Water Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. The Water Board will consider such facilities for coverage under NPDES permitting pursuant to U.S. EPA Phase II stormwater regulations. Under Phase II, the Water Board intends to permit these federal, State, and regional entities through use of a statewide Phase II NPDES General Permit.

VI. PERMIT PROVISIONS

A. Discharge Prohibitions

Prohibition A.1. Legal Authority – CWA 402(p)(3)(B)(ii) – The CWA requires in section 402(p)(3)(B)(ii) that permits for discharges from municipal storm sewers "shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers."

Prohibition A.2. Legal Authority – San Francisco Bay Basin Plan, Chapter 4 Implementation, Table 4-1, Prohibition 7.

B. Receiving Water Limitations

Receiving Water Limitation B.1. Legal Authority – San Francisco Bay Basin Plan, Chapter 3, Water Quality Objectives.

Receiving Water Limitation B.2. Legal Authority – Federal regulations require each NPDES permit to include limitations necessary to achieve water quality standards. 40 CFR 122.44(d)(1)(i). The State Water Board has previously determined that limitations necessary to meet water quality standards are appropriate for the control of pollutants discharged by MS4s and must be included in MS4 permits. (State Water Board Orders WQ 91-03, 98-01, 99-05, and 2001-15).). This Order accordingly requires that discharges shall not cause or contribute to violations of water quality standards.

C. Provisions

C.1. Compliance with Discharge Prohibitions and Receiving Water Limitations

Legal Authority

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: The Water Board's Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) contains water quality objectives as well as the following waste discharge prohibition: "The discharge of waste to waters of the state in a manner causing, or threatening to cause a condition of

pollution, contamination, or nuisance as defined in California Water Code Section 13050, is prohibited."

California Water Code section 13050(l) states "(1) 'Pollution' means an alteration of the quality of waters of the state by waste to a degree which unreasonably affects either of the following: (A) The water for beneficial uses. (B) Facilities which serve beneficial uses. (2) 'Pollution' may include "contamination."

California Water Code section 13050(k) states "'Contamination' means an impairment of the quality of waters of the state by waste to a degree which creates a hazard to public health through poisoning or through the spread of disease. 'Contamination' includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected."

California Water Code section 13050(m) states "'Nuisance' means anything which meets all of the following requirements: (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal. (3) Occurs during, or as a result of, the treatment or disposal of wastes."

California Water Code section 13241 requires each water board to "establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance […]."

California Water Code Section 13243 provides that a water board, "in a water quality control plan or in waste discharge requirements, may specify certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted."

California Water Code Section 13263(a) provides that waste discharge requirements prescribed by the water board implement the Basin Plan.

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A -D) require municipalities to implement controls to reduce pollutants in urban runoff from commercial, residential, industrial, and construction land uses or activities.

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(A -D) require municipalities to have legal authority to control various discharges to their MS4.

Federal NPDES regulation 40 CFR 122.44(d)(1) requires NPDES permits to include any requirements necessary to "[a]chieve water quality standards established under section 303 of the CWA, including State narrative criteria for water quality."

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to "control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director

determines are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality."

State Water Board Orders WQ 98-01 and 99-05 are precedential orders that require municipal stormwater permits to not cause or contribute to exceedances of water quality standards in the receiving water. The State Water Board Order 95-01 specifically requires that Provision C.1 include language that Permittees shall comply with discharge prohibitions and receiving water limitations through timely implementation of control measures and other actions to reduce pollutants in the discharges, whereby adopting an iterative approach to complying with the limitations. Courts have held that compliance with the iterative process does not excuse liability for violations of water quality standards. (*Building Industry Assn. of San Diego v. State Water Resources Control Board* (2004) 124 Cal.App.4th 866; *City of Rancho Cucamonga v. Regional Water Quality Control Bd*. (2006) 135 Cal.App.4th 1377; *Natural Resources Defense Council v. County of Los Angeles* (9th Cir. 2011) 673 F.3d. 880, rev'd on other grounds sub nom. *Los Angeles County Flood Control Dist. v. Natural Resources Defense Council* (2013) 133 S.Ct. 710, mod. by *Natural Resources Defense Council v. County of Los Angeles* (9th Cir. 2013) 725 F.3d 1194, cert. den. *Los Angeles County Flood Control Dist. v. Natural Resources Defense Council* (2014) 134 S.Ct. 2135.)

State Water Board Order WQ 2015-0075 directs regional water boards to consider reasonable alternative compliance options for meeting receiving water limitations. Order WQ 2015-0075 specifically directs regional water boards to follow the principles stated below when issuing a municipal stormwater permit, unless a board makes a specific showing that application of a given principle is not appropriate for region-specific or permit-specific reasons.

1. The receiving water limitations provisions of Phase I MS4 permits should continue to require compliance with water quality standards in the receiving water and should not deem good faith engagement in the iterative process to constitute such compliance. The Phase I MS4 permits should therefore continue to use the receiving water limitations provisions as directed by State Water Board Order WQ 99-05.
2. The Phase I MS4 permits should include a provision stating that, for water body-pollutant combinations with a TMDL, full compliance with the requirements of the TMDL constitutes compliance with the receiving water limitations for that water body-pollutant combination.
3. The Phase I MS4 permits should incorporate an ambitious, rigorous, and transparent alternative compliance path that allows permittees appropriate time to come into compliance with receiving water limitations without being in violation of the receiving water limitations during full implementation of the compliance alternative.
4. The alternative compliance path should encourage watershed-based approaches, address multiple contaminants, and incorporate TMDL requirements.

5. The alternative compliance path should encourage the use of green infrastructure and the adoption of low impact development principles.
6. The alternative compliance path should encourage multi-benefit regional projects that capture, infiltrate, and reuse stormwater and support a local sustainable water supply.
7. The alternative compliance path should have rigor and accountability. Permittees should be required, through a transparent process, to show that they have analyzed the water quality issues in the watershed, prioritized those issues, and proposed appropriate solutions. Permittees should be further required, again through a transparent process, to monitor the results and return to their analysis to verify assumptions and update the solutions. Permittees should be required to conduct this type of adaptive management on their own initiative without waiting for direction from the regional water board.

Alternative Path to Compliance with Discharge Prohibitions and Receiving Water Limitations for Certain Pollutants

This Order, as did the previous order, goes beyond requiring an open-ended iterative approach to compliance with water quality standards by including pollutant-specific provisions, C.9 through C.12 and C.14, with numerical WQBELs or narrative WQBELs with milestones and deadlines. The provisions and limitations implement adopted TMDL wasteload allocations and the associated implementation plans in the Basin Plan and specify what Permittees must do during the term of the Order to manage discharges of the specific pollutants that may cause or contribute to violations of water quality standards. If complied with, the Permittees will be deemed in compliance with Receiving Water Limitations B.1 and B.2 for these pollutants. The requirements of C.9 through C.12 and C.14 are ambitious and rigorous because they will require Permittees to fully commit to and implement challenging but achievable tasks to ultimately meet water quality objectives, including objective interim numeric effluent limitations. Accordingly, this Order explicitly applies principles 1, 2, and 3 (above) of State Water Board Order WQ 2015-0075 and provides an alternative path to compliance with Discharge Prohibitions and Receiving Water Limitations for the following pollutant – water body combinations: pesticides and pesticide-caused toxicity in all receiving waters (Provision C.9); trash in all receiving waters (Provision C.10); mercury in all San Francisco Bay segments and receiving waters in the Guadaloupe River watershed (Provision C.11); polychlorinated biphenyls (PCBs) in all San Francisco Bay segments (Provision C.12); and fecal indicator bacteria in San Pedro Creek and Pacifica State Beach receiving waters (Provision C.14).

This rigorous compliance alternative also applies Order WQ 2015-0075 principle 4. It implements all applicable TMDL requirements and calls for or allows for implementation of trash, mercury, and PCBs controls in watershed and drainage areas where they are most needed and most likely to be effective and promotes and allows use of controls with multiple pollutant benefits. The watershed-based approach addressing multiple pollutants is not appropriate for the pesticides and pesticide-caused toxicity requirements. Consistent with the TMDL wasteload allocation and implementation plan, these requirements are pollution prevention management practices specific to urban use

pesticides and apply to all watersheds and drainage areas. The fecal indicator bacteria requirements for discharges to San Pedro Creek and Pacifica State Beach receiving waters implement TMDL requirements and call for fecal indicator bacteria-specific pollution prevention controls consistent with current knowledge of sources and activities in the watershed.

Provision C.3 of the Order calls for adoption and implementation of low impact development consistent with Order WQ 2015-0075 principles 5 and 6. The mercury and PCBs provisions (C.11 and C.12) explicitly recognize and call for use of green infrastructure to meet pollutant load reduction requirements. The trash provision allows use of low impact development green infrastructure as full trash capture systems, if appropriately designed, operated, and maintained. Although not directly required in the pesticides and fecal indicator bacteria provisions, low impact development principles and development and implementation of green infrastructure plans, including consideration of multi-benefit regional projects, could also have pesticides and bacteria load reduction benefits.

Consistent with Order WQ 2015-0075 principle 7, each of the pollutant-specific provisions also contain concrete milestones and deadlines and reporting requirements that provide rigor and accountability. All reports, plans, and other required submittals will be made available to all interested parties and input and feedback from interested parties will be considered in the evaluation of all submittals.

The Order also includes monitoring requirements (Provision C.8) to assess water body and watershed conditions and effectiveness of control actions towards attainment of water quality standards and to inform selection and implementation of new control actions or adaptive improvements of control actions.

Consistent with the TMDLs, more time than the term of the Order will be necessary to attain water quality standards for mercury and PCBs. In these cases, the associated Order provision includes an additional requirement for the Permittees to submit a proposed plan of additional or improved control actions and schedule of implementation to attain water quality standards or TMDL wasteload allocations for the Water Board's consideration of numerical or narrative WQBELs in the subsequent order.

This Order also includes specific requirements to control copper in discharges to all San Francisco Bay segments (Provision C.13) in accordance with the Basin Plan implementation plan of the site-specific water quality objectives for copper in these receiving waters. However, the Permittees already comply with Receiving Water Limitations for copper in all San Francisco Bay segments since these copper objectives are attained in these receiving waters.

C.2. Municipal Operations

Legal Authority

The following legal authority applies to Provision C.2:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), California Water Code (CWC) sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(1) requires "[a] description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(3) requires "[a] description for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters of discharges from municipal storm sewer systems, including pollutants discharged as a result of deicing activities."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(4) requires "[a] description of procedures to assure that flood management projects assess the impacts on the water quality of receiving waterbodies and that existing structural flood control devices have been evaluated to determine if retrofitting the device to provide additional pollutant removal from storm water is feasible."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(5) requires "[a] description of a program to monitor pollutants in runoff from operating or closed municipal landfills or other treatment, storage or disposal facilities for municipal waste, which shall identify priorities and procedures for inspections and establishing and implementing control measures for such discharges."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(6) requires "[a] description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewers associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities."

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to "control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality."

Fact Sheet Findings in Support of Provision C.2

C.2-1 Municipal maintenance activities are potential sources of pollutants unless appropriate inspection, pollutant source control, and cleanup measures are implemented during routine maintenance works to minimize pollutant discharges to storm drainage facilities.

Sediment accumulated on paved surfaces, such as roads, parking lots, parks, sidewalks, landscaping, and corporation yards, is the major source of point source pollutants found in urban runoff. Thus, Provision C.2 requires the Permittees to designate minimum BMPs for all municipal facilities and activities as part of their ongoing pollution prevention efforts as set forth in this Permit. Such prevention measures include, but are not limited to, activities as described below. The work of municipal maintenance personnel is vital to minimize stormwater pollution because personnel work directly on municipal storm drains and other municipal facilities. Through work such as inspecting and cleaning storm drain drop inlets and pipes and conducting municipal construction and maintenance activities upstream of the storm drain, municipal maintenance personnel are directly responsible for preventing and removing pollutants from the storm drain. Maintenance personnel also play an important role in educating the public and in reporting and cleaning up illicit discharges.

C.2-2 Road construction and other activities can disturb the soil and drainage patterns to streams in undeveloped areas, causing excess runoff and thereby erosion and the release of sediment. In particular, poorly designed roads can act as man-made drainages that carry runoff and sediment into natural streams, impacting water quality.

Provision C.2 also requires the Permittees to implement effective BMPs for the following rural works maintenance and support activities: (a) Road design, construction, maintenance, and repairs in rural areas that prevent and control road-related erosion and sediment transport; (b) Identification and prioritization of rural roads maintenance on the basis of soil erosion potential, slope steepness, and stream habitat resources; (c) Road and culvert construction designs that do not impact creek functions. New or replaced culverts shall not create a migratory fish passage barrier, where migratory fish are present, or lead to stream instability; (d) Development and implementation of an inspection program to maintain road structural integrity and prevent impacts to water quality; (e) Provide adequate maintenance of rural roads adjacent to streams and riparian habitat to reduce erosion, replace damaging shotgun culverts, re-grade roads to slope outward where consistent with road engineering safety standards, and install water bars; and (f) When replacing existing culverts or redesigning new culverts or bridge crossings use measures to reduce erosion, provide fish passage and maintain natural stream geomorphology in a stable manner.

Road construction, culvert installation, and other rural maintenance activities can disturb the soil and drainage patterns to streams in undeveloped areas, causing excess runoff and thereby erosion and the release of sediment. Poorly

designed roads can act as preferential drainage pathways that carry runoff and sediment into natural streams, impacting water quality. In addition, other rural public works activities, including those the BMP approach would address, have the potential to significantly affect sediment discharge and transport within streams and other waterways, which can degrade the beneficial uses of those waterways. This Provision would help ensure that these impacts are appropriately controlled.

Specific Provision C.2 Requirements

Provision C.2.a-e. (Operation and Maintenance of Municipal Separate Storm Sewer Systems (MS4) facilities) requires that the Permittees implement appropriate pollution control measures during maintenance activities and to inspect and, if necessary, clean municipal facilities, such as conveyance systems, pump stations, and corporation yards, before the rainy season. The requirements will assist the Permittees to prioritize tasks, implement appropriate BMPs, evaluate the effectiveness of the implemented BMPs, and compile and submit annual reports.

Provision C.2.d. (Stormwater Pump Stations) Water Board staff investigated the occurrence of low salinity and dissolved oxygen (DO) conditions in Old Alameda Creek (Alameda County) and Alviso Slough (Santa Clara County) in September and October of 2005. Water Board staff became aware of this problem in their review of receiving water and discharge sampling conducted by the U.S. Geological Survey as part of its routine monitoring on discharges associated with the former salt ponds managed by the U.S. Fish and Wildlife Service in Santa Clara County and the California Department of Fish and Wildlife in Alameda County.

Discharge of black-colored water from the Alvarado pump station to Old Alameda Creek was observed at the time of the data collection on September 7, 2005, confirming dry weather urban runoff as the source of the documented violations of the 5 mg/L (DO) water quality objective. Such conditions were measured again on September 21, 2005.

On October 17, 2005, waters in Alviso Slough were much less saline than the salt ponds and had the lowest documented dissolved oxygen of the summer, suggesting a dry weather urban runoff source. The (DO) sag was detected from surface to bottom at 2.3 mg/L at a salinity of less than 1 part per thousand (ppt), mid-day, when oxygen levels should be high at the surface. The sloughs have a typical depth of 6 feet.

Investigations of these incidents found that stormwater pump stations, universally operated by automatic float triggers, have been confirmed as the cause in at least one instance and may represent an overlooked source of controllable pollution to the San Francisco Bay Estuary and its tidal sloughs. The discharges of dry weather urban runoff from these pump stations were not being managed to protect water quality and surveillance monitoring detected measurable negative water quality consequences of this current state of pump station management.

Pump station discharges are controllable point sources of pollution that are virtually unregulated, causing violations of water quality objectives. Therefore, the Previous Permit required (1) an inventory of pump stations, (2) inspection of pump stations twice a year during the dry season to collect (DO) data and implement corrective actions for DO

at or below 3 milligrams per liter (mg/l), and (3) inspection of pump stations after two storm events during the wet season to collect data on the presence of trash and other water quality parameters.

The Permittees have submitted a list of all pump stations. DO data in annual reports shows that turning on the pumps aerates the water, thereby increasing the DO of the water to at least 3 (mg/l), the minimum DO requirement.

40 CFR 122.26(d)(2)(I)(f) requires Permittees to carry out all inspection, surveillance, and monitoring procedures necessary to determine compliance and noncompliance with permit conditions, including the prohibition on illicit discharges to the MS4. Pump stations, which collect and discharge from the storm drain systems, cannot contribute discharges with dissolved oxygen (DO) level below 3 mg/L. Previous pump station reporting shows that implementation of corrective actions (i.e., BMPs) prior to the pumps, combined with using the pumps to discharge collected water, as opposed to simply allowing it to overflow, aerates the water to a DO level of at least 3 mg/L. Thus, this Permit removes the specific requirements for the monitoring of DO at pump stations and allows the Permittees greater flexibility to ensure that all water discharged from pumps stations is at least 3 mg/l. The reporting requirement has also been removed from this Permit, but Permittees must maintain any sampling records and make them available upon request.

The Previous Permit also wanted to explore the use of the pump stations for trash capture to protect the beneficial uses of the receiving waters. Information collected shows that pump stations as trash capture devices are inefficient because their reservoirs are too small to contain trash. At the same time, many municipalities have installed full and partial trash capture devices at select storm drain inlets.

Provision C.2.f. (Corporation Yard BMP Implementation) requires Permittees to implement the BMP in site-specific Stormwater Pollution Prevention Plans (SWPPPs) to minimize pollutant discharges in stormwater and non-stormwater discharges. The Previous Permit required SWPPPs to be developed and implemented by July 1, 2010. SWPPPs should have specific BMPs for different functions of the corporation yard and provide guidance for frequent mini inspections to ensure that appropriate BMPs are implemented. During the Previous Permit term, Water Board staff and U.S. EPA staff inspected a few of the Permittees' corporation yards and evaluated the corresponding SWPPPs. All inspected corporation yards had actual and/or potential discharges. Most of the countywide programs developed templates for the SWPPPs. Individual Permittees were supposed to customize the template to fit their corporation yards. Some Permittees did not fully customize the SWPPP template. A few Permittees have comprehensive, site-specific SWPPPs. Water Board staff also evaluated this Provision in annual reports. The Previous Permit required routine inspections in different areas of the corporation yard and at least one inspection prior to the start of the rainy season. The intent of the inspection requirement was to have regular mini-inspections and one full corporation yard inspection sometime in late August or in September, right before the start of the rainy season in October, to make sure the corporation yard was clean and all issues were resolved before the start of the rainy season. Some Permittees inspected in the spring or early summer and documented that as the inspection for the year to comply with this

Provision in the annual report due the following September. Other Permittees did not inspect until late fall or winter. Some Permittees documented issues but the annual reports either did not document the corrective actions or corrective actions were implemented weeks or months later. Therefore, this Permit clearly identifies the timeframe of when the annual inspections must occur and requires corrective actions to be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. This is consistent with the timeframe for implementation of corrective actions in provisions C.4. and C.5.

C.3. New Development and Redevelopment

Legal Authority

Broad Legal Authority: CWA Sections 402(p)(3)(B)(ii-iii), CWA Section 402(a), CWC Sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F), 40 CFR 131.12, and 40 CFR 122.26(d)(2)(iv).

Fact Sheet Findings in Support of Provision C.3

C.3-1 Urban development begins at the land use planning phase; therefore, this phase provides the greatest cost-effective opportunities to protect water quality in new development and redevelopment. When a Permittee incorporates policies and principles designed to safeguard water resources into its General Plan and development project approval processes, it has taken a critical step toward the preservation of local water resources for current and future generations.

C.3-2 Provision C.3. is based on the premise that Permittees are responsible for considering potential stormwater impacts when making planning and land use decisions. The goal of Provision C.3. is for Permittees to use their planning authority to reduce pollutant discharges and runoff flow into the storm drain system primarily through the implementation of low impact development (LID) techniques.

C.3-3 To accomplish this goal, Permittees shall require new development and redevelopment projects to implement appropriate source control, site design, and stormwater treatment measures to address both soluble and insoluble stormwater runoff pollutant discharges and prevent increases in runoff flow from these projects. Permittees shall also complete and implement a Green Infrastructure Plan for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs and other storm drain infrastructure elements. Neither Provision C.3. nor any of its requirements are intended to restrict or control local land use decision-making authority.

C.3-4 Certain control measures implemented or required by Permittees for urban runoff management might create a habitat for vectors (e.g., mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperative efforts among Permittees, local vector control agencies, Water Board staff, and the State Department of Public Health are necessary to minimize potential nuisances and public health impacts resulting from vector breeding.

C.3-5 The Water Board recognized in its Policy on the Use of Constructed Wetlands for Urban Runoff Pollution Control (Resolution No. 94-102) that urban runoff treatment wetlands that are constructed and operated pursuant to that Resolution and are constructed outside a creek or other receiving water are stormwater treatment systems and, as such, are not waters of the United States subject to

regulation pursuant to Sections 401 or 404 of the federal Clean Water Act. This is consistent with the stayed 2015 Clean Water Rule exempting stormwater control features from the definition of "waters of the U.S." (80 Fed. Reg. 37054 (June 29, 2015).) Water Board staff is working with the California Department of Fish and (CDFW) and U.S. Fish and Wildlife Service (USFWS) to identify how maintenance for stormwater treatment controls required under permits such as this Permit can be appropriately streamlined, given CDFW and USFWS requirements, and particularly those that address special status species. This Permit requires Permittees to ensure that constructed wetlands installed by Regulated Projects are consistent with Resolution No. 94-102 and the operation and maintenance requirements contained therein.

C.3-6 The Permit requires Permittees to ensure that pervious pavement systems of 3000 square feet or more, onsite, joint, and offsite stormwater treatment systems, and HM controls installed by Regulated Projects are properly operated and maintained for the life of the Projects. In cases where the responsible parties for the treatment systems or HM controls have worked diligently and in good faith with the appropriate state and federal agencies to obtain approvals necessary to complete maintenance activities for the treatment systems or HM controls, but these approvals are not granted, the Permittees shall be considered by the Water Board to be in compliance with Provision C.3.h.iv. of the Permit.

Specific Provision C.3 Requirements

Provision C.3.a. (New Development and Redevelopment Performance Standard Implementation) sets forth essentially the same legal authority, development review and permitting, environmental review, training, and outreach requirements that are contained in the previous permit.

Provision C.3.b. (Regulated Projects) establishes the different categories of new development and redevelopment projects that Permittees must regulate under Provision C.3. These categories are defined on the basis of the land use and the amount of impervious surface created and/or replaced by the project because all impervious surfaces contribute pollutants to stormwater runoff and certain land uses contribute more pollutants. Impervious surfaces can neither absorb water nor remove pollutants as the natural, vegetated soil they replaced can. Also, urban development creates new pollution by bringing higher levels of car emissions that are aerially deposited, car maintenance wastes, pesticides, household hazardous wastes, pet wastes, and trash, which can all be washed into the storm sewer.

This permit is a 3rd generation permit containing stormwater treatment requirements for development projects. Past permits have grandfathered development projects approved prior to those permits' effective dates, essentially exempting the projects and allowing them to provide no or insufficient stormwater treatment. Water Board staff believe a small number of these development projects that were approved more than a decade ago have still not begun construction. A decade is sufficient time to justify requiring the Permittees to revise and update these stagnant development permits to include current LID treatment requirements. Therefore, this provision removes the grandfathering of

development projects approved with no stormwater treatment requirements and that have not begun construction. However, this provision allows exemptions for some of these previously approved projects in situations where the Permittees lack legal authority to retroactively change their previous approvals. This provision also allows some of these previously approved projects to use non-LID stormwater treatment instead of LID treatment because of space constraints.

To confirm that the total number of Projects previously approved without any Provision C.3. compliant stormwater treatment is indeed small, Provision C.3.b.iv.(1) includes a requirement for Permittees to provide in their 2017 Annual Report a complete list of these types of development projects. For each such Project, the Permittee shall indicate the type of stormwater treatment system required or the specific exemption granted, pursuant to Provision C.3.b.i.(2)(a) and (b). This reporting requirement only applies to Permittees that have Projects subject to Provision C.3.b.i.(2).

Regulated Projects approved with non-LID stormwater treatment measures in compliance with the hydraulic sizing criteria of Provision C.3.d. will continue to be grandfathered.

Provision C.3.c (Low Impact Development (LID)) recognizes LID as a cost-effective, beneficial, holistic, integrated stormwater management strategy.[13] The goal of LID is to reduce runoff and mimic a site's predevelopment hydrology by minimizing disturbed areas and impervious cover and then infiltrating, storing, detaining, evapotranspiring, and/or biotreating stormwater runoff close to its source. LID employs principles such as preserving and recreating natural landscape features and minimizing imperviousness to create functional and appealing site drainage that treats stormwater as a resource, rather than a waste product. Practices used to adhere to these LID principles include measures such as preserving undeveloped open space, rain barrels and cisterns, green roofs, pervious pavement systems, and biotreatment through rain gardens, bioretention units, bioswales, and planter/tree boxes. This is a standard, current, ordinary, and regular practice being implemented in numerous jurisdictions in California, the U.S., and internationally, including: the Permittees' jurisdictions, Los Angeles, San Diego, San Francisco, Portland, OR, Seattle, Minneapolis, Milwaukee, Kansas City, Chicago, New York City, Philadelphia, Auckland, New Zealand, Chinese "sponge cities" such as Wuhan and Changde, and others.

This Provision sets forth a three-pronged approach to LID with source control, site design, and stormwater treatment requirements. The concepts and techniques for incorporating LID into development projects, particularly for site design, have been extensively discussed in BASMAA's Start at the Source manual (1999) and its companion document, Using Site Design Techniques to Meet Development Standards for Stormwater Quality (May 2003), as well as in various other LID reference documents.

Provision C.3.c.i.(1) lists source control measures that must be included in all Regulated Projects as well as some that are applicable only to certain types of

[13] U.S. EPA, *Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices* **(**Publication Number EPA 841-F-07-006, December 2007) http://water.epa.gov/polwaste/green/upload/2008_01_02_NPS_lid_costs07uments_reducingstormwatercosts-2.pdf**)**

businesses and facilities. These measures are recognized nationwide as basic, effective techniques to minimize the introduction of pollutants into stormwater runoff.

Provision C.3.c.i.(2)(a) lists site design elements that must be implemented at all Regulated Projects. These design elements are basic, effective techniques to minimize pollutant concentrations in stormwater runoff as well as the volume and frequency of discharge of the runoff. One design element requires each Regulated Project to include at least one site design measure from a list of six that includes recycling of roof runoff, directing runoff into vegetated areas, and installation of pervious pavement systems instead of traditional paving. All these measures serve to reduce the amount of runoff and its associated pollutants being discharged from the Regulated Project.

Provision C.3.c.i.(2)(b) requires the Permittees to collectively develop and adopt design specifications for pervious pavement systems, subject to the Executive Officer's approval. However, this subprovision allows Permittees to reference pervious pavement design specifications previously developed by countywide programs and adopted into countywide stormwater handbooks. Design specifications are necessary because improperly designed and engineered pervious pavement systems may cause flooding and the discharge of insufficiently treated stormwater runoff.

Provision C.3.c.i.(2)(c) requires each Regulated Project to treat 100% of the Provision C.3.d. runoff with LID treatment measures onsite or with LID treatment measures at a joint stormwater treatment facility.

Provision C.3.c.i.(2)(c)(i) defines LID treatment measures as harvesting and use, infiltration, evapotranspiration, or biotreatment.

The Previous Permit required that a properly engineered and maintained biotreatment system may be considered only if it was infeasible to implement harvesting and use, infiltration, or evapotranspiration at a project site. Infeasibility may result from conditions including the following:

- Locations where seasonal high groundwater would be within 10 feet of the base of the LID treatment measure.
- Locations within 100 feet of a groundwater well used for drinking water.
- Development sites where pollutant mobilization in the soil or groundwater is a documented concern.
- Locations with potential geotechnical hazards.
- Smart growth and infill or redevelopment sites where the density and/or nature of the project would create significant difficulty for compliance with the onsite volume retention requirement.
- Locations with tight clay soils that significantly limit the infiltration of stormwater.

The Previous Permit also required the Permittees to produce two reports during the permit term. The first report[14] established criteria and procedures for Permittees to follow to implement the hierarchy of LID treatment measures listed above (i.e., harvesting and use, infiltration, and evapotranspiration must be considered prior to biotreatment). The second report[15] reviewed data from two years of the Permittees' Annual Reports to evaluate the results of applying the feasibility / infeasibility criteria. The conclusions of the second report were:

- Infiltration of some runoff is feasible on most projects, although in the clay soils typical of the Bay Area, the amount of runoff than can be infiltrated is unpredictable and highly variable.
- Very few development projects create the quantity and timing of non-potable water demand required to feasibly harvest and use the amount of runoff specified in Provision C.3.d.
- Bioretention facilities, when designed according to the criteria in current Permittee guidance, could infiltrate 40% - 80% of the total runoff, depending on rainfall patterns and facility size. However, the amount of runoff that would be infiltrated over the life of a particular project is variable and unpredictable because of uncertainty in the near-term and long-term infiltration performance of underlying soils. Infiltration can be maximized by ensuring project designs meet current design criteria and by ensuring treatment systems are constructed as designed.

The Permittees completed a "White Paper" on Provision C.3. on February 27, 2015.[16] The White Paper concluded that the pollutant removal performance of biotreatment facilities, overall and on average, is equivalent or better than the likely real-world performance of harvest and use facilities and as good as the likely performance of infiltration facilities when considered over the long term. The White Paper also noted that biotreatment facilities require less maintenance and are less prone to failure than harvest and use facilities, and in some cases, are also preferable to direct infiltration facilities.

Based on the data provided by the above Permittee reports, this Permit removes the Previous Permit's restriction on allowing properly engineered and maintained biotreatment systems only after an infeasibility analysis of harvesting and use, infiltration, or evapotranspiration treatment measures.

Provision C.3.c.i.(2)(c)(ii) requires biotreatment systems to meet minimum performance specifications in order to be considered as LID treatment. This subprovision also requires biotreatment soil media to meet the current minimum specifications developed and included in the Previous Permit.[17] However, this subprovision recognizes that the current soil media specifications may need to be

[14] *Harvest and Use, Infiltration and Evapotranspiration Feasibility/ Infeasibility Criteria Report (2011)*
[15] *Status Report on the Application of Feasibility / Infeasibility Criteria for Low Impact Development (2013)*
[16] BASMAA, February 27, 2015. "White Paper" on Provision C.3 in MRP 2.0: Final Report.
[17] Attachment L of Board Order No. R2-2009-0074, adopted October 14, 2009, and revised November 27, 2011.

modified because of variability in climate, rainfall, and compost composition among the different counties. Therefore, this subprovision allows for the Permittees to collectively (on an all-Permittee scale or countywide scale) develop and adopt revisions to the current soil media minimum specifications, subject to the Executive Officer's approval.

Provision C.3.d (Numeric Sizing Criteria for Stormwater Treatment Systems) lists the hydraulic sizing design criteria that the stormwater treatment systems installed for Regulated Projects must meet. The volume and flow hydraulic design criteria are the same as those required in the Previous Permit. These criteria ensure that stormwater treatment systems will be designed to treat the optimum amount of relatively smaller-sized runoff-generating storms each year. That is, the treatment systems will be sized to treat the majority of rainfall events generating polluted runoff but will not have to be sized to treat the few very large annual storms as well. For many projects, such large treatment systems become infeasible to incorporate into the projects.

Provision C.3.d.iv. defines infiltration devices and establishes limits on the use of stormwater treatment systems that function primarily as infiltration devices. The restriction that infiltration devices have to be deeper than wide has been removed to reflect current design practices. The intent of the Provision is to ensure that the use of infiltration devices, where feasible and safe from the standpoint of structural integrity, must also not cause or contribute to the degradation of groundwater quality at the project sites.

Provision C.3.e (Alternative or In-Lieu Compliance with Provision C.3.b.) recognizes that not all Regulated Projects may be able to install LID treatment systems onsite because of site conditions, such as existing underground utilities, right-of-way constraints, and limited space.

Provision C.3.e.i. This Provision allows any Regulated Project to provide LID treatment for up to 100% of the required Provision C.3.d. stormwater runoff at an offsite location or pay equivalent in-lieu fees to provide LID treatment at a Regional Project, as long as the offsite or Regional Project is in the same watershed as the Regulated Project and constructed within 3 years of the end of construction of the Regulated Project. The 3 years of additional time are allowed because more time may be required to complete construction of offsite and Regional projects because of administrative, legal, and/or construction delays. We acknowledge in some instances, an even longer time may be required to complete construction of Regional Projects because they may involve a variety of public agencies and stakeholder groups and a longer planning and construction phase. Therefore, the timeline for completion of a Regional Project may be extended up to 5 years after the completion of the Regulated Project, with prior Executive Officer approval. Executive Officer approval will be granted contingent upon a demonstration of good faith efforts to implement the Regional Project, such as having funds encumbered and applying for the appropriate regulatory permits.

Provision C.3.e.ii. (Special Projects) When considered at the watershed scale, certain types of smart growth, high density, and transit-oriented development can either reduce existing impervious surfaces, or create less "accessory" impervious areas and auto-related pollutant impacts. Incentive LID Treatment Reduction Credits approved by the Water Board may be applied to these types of Special Projects. This Provision includes specific criteria for determining which types of Regulated Projects may be considered Special Projects and establishes different categories of Special Projects based on size, land use type, and density. Except for Category A, which represents the smallest Special Projects, this Provision also uses location, density, and parking criteria to establish a tiered approach for determining the total LID Treatment Reduction Credit available for any given Special Project. The total available LID Treatment Reduction Credit may be used to reduce the amount of stormwater runoff that must be treated with LID stormwater treatment systems. The remaining amount of stormwater runoff must be treated with one or a combination of the following two specific non-LID treatment systems:

- Tree-box-type high flowrate biofilters
- Vault-based high flowrate media filters

This Provision is the same as in the Previous Permit except for the following three changes:

- Density LID Treatment Reduction Credits are allowed for mixed use development projects, which consist of a mix of residential and commercial land uses, based on density measured by either the dwelling units per acre or floor area ratio. This change acknowledges that mixed use development projects can vary from mostly commercial to mostly residential. The Previous Permit did not accommodate this variability and penalized dense mixed use projects that are mostly residential by restricting density LID Treatment Reduction Credits to only floor area ratio criteria.
- Definitions of gross density and floor area ratio have been included in Provision C.3.b.ii. to aid consistent implementation of this Provision by all Permittees. Gross Density is defined as the total number of residential units divided by the acreage of the entire site area, including land occupied by public right-of-ways, recreational, civic, commercial and other non-residential uses. Floor Area Ratio (FAR) is defined as the ratio of the total floor area on all floors of all buildings at a project site (except structures, floors, or floor areas dedicated to parking) to the total project site area. Gross density and FAR have been purposely defined to include public rights-of-way, recreational, civic, commercial, and other non-residential uses so as to raise the bar for Regulated Projects to qualify for the LID Reduction Credits allowed in Provision C.3.e.ii. That is, these more conservative gross density and FAR values may result in some Regulated Projects qualifying for less LID Reduction Credits or not qualifying at all.

  The reporting data for Special Projects under the current permit shows that "lack of space to provide full LID stormwater treatment" is the most frequent reason invoked for why 100% LID treatment onsite is infeasible. Therefore, it is appropriate that the space reserved for public rights-of-way, recreation, civic,

commercial, and other non-residential uses are included in the calculations for gross density and FAR, especially since many of these areas may be used for installation of LID treatment measures.

- To reduce the burden of reporting, the semi-annual reporting of Special Projects that are being considered by Permittees prior to the Permittees granting final planning approval has been reduced to annual, within the Annual Report. Although the frequency of reporting has been reduced, the current reporting requirements for this Provision are unchanged because the data is necessary for Water Board staff to validate the Permittees' analysis of the number and size of potential Special Projects that may be approved during this permit term. Water Board staff intends to use the data collected in the proposed reporting requirements to revise the Special Projects criteria as appropriate for the next permit term.

Provision C.3.f (Alternative Certification of Stormwater Treatment Systems) allows Permittees to have a third-party review and certify a Regulated Project's compliance with the hydraulic design criteria in Provision C.3.d. Some municipalities do not have the staffing resources to perform these technical reviews. The third-party review option addresses this staffing issue. This Provision requires Permittees to make a reasonable effort to ensure that the third-party reviewer has no conflict of interest with regard to the Regulated Project being reviewed.

Provision C.3.g. (Hydromodification Management) requires that certain new development projects manage increases in stormwater runoff flow and volume so that post-project runoff shall not exceed estimated pre-project runoff rates and durations, where such increased flow and/or volume is likely to cause increased potential for erosion of creek beds and banks, silt pollutant generation, or other adverse impacts on beneficial uses due to increased erosive force.

Background for Provision C.3.g. Based on Hydrograph Modification Management Plans prepared by the Permittees, the Water Board adopted hydromodification management (HM) requirements for Alameda Permittees (March 2007), Contra Costa Permittees (July 2006), Fairfield-Suisun Permittees (March 2007), Santa Clara Permittees (July 2005), and San Mateo Permittees (March 2007). Those HM requirements are stated in Provision C.3.g., and Attachment C includes maps prepared by the Alameda, Santa Clara, San Mateo, and Fairfield-Suisun Permittees showing areas where HM requirements apply.

The Alameda, Santa Clara and San Mateo Permittees have adapted the Western Washington Hydrology Model[18] for modeling runoff from development project sites, sizing flow duration control structures, and determining overall compliance of such structures and other HM control structures (HM controls) in controlling runoff from the project sites to manage hydromodification impacts as described in the Permit. The adapted model is called the Bay Area Hydrology Model (BAHM).[19] All Permittees may

[18] http://www.ecy.wa.gov/programs/wq/stormwater/wwhm_training/wwhm/wwhm_v2/instructions_v2.html
[19] See www.bayareahydrologymodel.org, Resources.

use the BAHM if its inputs reflect actual conditions at the project site and surrounding area, including receiving water conditions. As Permittees gain experience in designing and operating HM controls, the Programs may make adjustments in the BAHM to improve its function in controlling excess runoff and managing hydromodification impacts. Notification of all such changes shall be given to the Water Board and the public through such mechanism as an electronic email list.

The Contra Costa Permittees have developed sizing charts for the design of flow duration control devices. The Previous Permit allowed the Contra Costa Permittees to conduct a monitoring program to verify the performance of these devices and to identify whether streams to which Contra Costa Permittees discharge may have a different susceptibility to HM impacts, thus justifying a different threshold for control of flows resulting in those impacts. The Contra Costa Permittees submitted an IMP Monitoring Report,[20] which found that Contra Costa HM measures generally, but not entirely, met the Previous Permit's HM requirements for the Alameda, Santa Clara, and San Mateo Permittees, and the City of Vallejo. The Contra Costa Permittees did not submit information showing that Contra Costa creeks had a different susceptibility to erosion. That is, they did not submit a justification for using erosion thresholds different than those accepted for the Alameda, Santa Clara, and San Mateo Permittees, and the City of Vallejo. Under the Previous Permit, the Water Board had accepted a higher threshold for control of HM effects (i.e., controlling the range of flows beginning at 20% of the 2-year pre-project peak flow, as opposed to 10% of the 2-year pre-project peak flow). Because this additional information was not submitted, and Contra Costa streams are generally similar to other Bay Area streams, the Permit extends the 10% standard to Contra Costa, and includes requirements for Contra Costa to complete modifications to its HM approach to ensure that projects implement that consistent approach within a specified time.

The Previous Permit Provision C.3.g.v. required the City of Vallejo to complete a hydrograph modification management plan (HMP) by July 1, 2013, in lieu of complying with Previous Permit Provision C.3.g.i-iv. The City submitted its Final HMP on April 24, 2013,[21] and the HMP was subsequently accepted by Board staff. The Final HMP incorporates the same requirements as for the Alameda, Santa Clara, and San Mateo Permittees. The Permit requires the City to comply with those requirements.

The Fairfield-Suisun Permittees are required to comply with the HM criteria established in this Permit. However, they have a threshold for control of erosive flows that is greater than the other Permittees: 20 percent of the 2-year peak flow. This criterion, which is greater than the criterion allowed for other Bay Area Stormwater Countywide Programs, is based on data collected from Laurel and Ledgewood Creeks and technical analyses of these site-specific data.

The Water Board recognizes that the collective knowledge of management of erosive flows and durations from new and redevelopment is evolving, and that the topics listed below are appropriate topics for further study. Such a study may be initiated by Water Board staff, or the Executive Officer may request that all Bay Region municipal

[20] Contra Costa Clean Water Program, September 15, 2013. IMP Monitoring Report: IMP Model Calibration and Validation Project.

[21] City of Vallejo (Geosyntec), April 2013. Final Hydromodification Management Plan (HMP).

stormwater Permittees jointly conduct investigations as appropriate. Any future proposed changes to the Permittees' HM provisions may reflect improved understanding of these issues:

- Potential incremental costs, and benefits to waterways, from controlling a range of flows up to the 35- or 50-year peak flow, versus controlling up to the 10-year peak flow, as required by this Permit;
- The allowable low-flow (also called Qcp and currently specified as 10–20 percent of the pre-project 2-year runoff from the site) from HM controls;
- The effectiveness of self-retaining areas for management of post-project flows and durations; and/or
- The appropriate basis for determining cost-based impracticability of treating stormwater runoff and controlling excess runoff flows and durations.

Provision C.3.g.i. defines the subset of Regulated Projects that must install hydromodification controls (HM controls). This subset, called HM Projects, are Regulated Projects that create and/or replace one acre or more of impervious surface and are not specifically excluded by the conditions expressed in C.3.g.i.(1)-(3). Those conditions identify areas where the potential for single-project and/or cumulative development hydromodification impacts to creeks is minimal, and thus HM controls are not required. Such areas include creeks that are concrete-lined or significantly hardened (e.g., with concrete) from point of discharge and continuously downstream to their outfall into San Francisco Bay; underground storm drains discharging to the Bay; and construction of infill projects in highly developed watersheds.[22] The Alameda, Santa Clara, San Mateo, and Fairfield-Suisun Permittees have developed maps showing where HM controls are required (Attachment C). This Provision requires Permittees that have not previously submitted an HM Applicability Map or equivalent information to prepare and submit that information, acceptable to the Executive Officer, consistent with the requirements of Provision C.3.g.

Provision C.3.g.ii. establishes the standard HM controls that all HM Projects must meet. The HM Standard is based largely on the standards proposed by Permittees in their Hydrograph Modification Management Plans. The method for calculating post-project runoff in regards to HM controls is standard practice in Washington State and is equally applicable in California.

Provision C.3.g.iii. provides a procedure for the Permittees to propose an additional method for demonstrating compliance with HM requirements. This method would directly simulate erosion potential, and would be required to ensure that projects implementing HM controls with this method, if accepted by the Executive Officer, meet the Permit's HM criteria. This provision requires submittal of appropriate analyses demonstrating that the method will substantively comply with HM requirements; it may not be implemented on projects until accepted by the Executive Officer.

[22] Within the context of Provision C.3.g., "highly developed watersheds" refers to catchments or sub-catchments that are 70 percent impervious or more.

Provision C.3.g.iv. identifies and defines three methods of hydromodification management.

Provision C.3.g.v. establishes the timeframes for meeting the HM Standard defined in Provision C.3.g.ii.

Provision C.3.g.vi. describes the information required to be collected and/or submitted in the Permittees' Annual Reports regarding HM Projects. This Provision also describes specific required information for Contra Costa Permittees to submit with the 2017 Annual Report.

Provision C.3.h (Operation and Maintenance of Stormwater Treatment Systems) establishes permitting requirements to ensure that proper maintenance for the life of the Regulated Project is provided for all pervious pavement systems of 3,000 square feet or more; onsite, joint, and offsite stormwater treatment systems; and HM controls installed.

This Provision adds a requirement for Permittees to include pervious pavement systems of 3,000 square feet or more in their Operation and Maintenance Agreements, database of Regulated Projects, and inspection checklists. Pervious pavement systems serve as site design measures that directly reduce the amount of impervious surface area and therefore, the size of the stormwater treatment system(s) required to comply with Provision C.3.d. Adequate routine maintenance of pervious pavement systems is essential because clogged systems become impervious and may result in untreated stormwater runoff or additional load on stormwater treatment systems that result in inadequately treated stormwater runoff. To lessen the burden of inspecting so many pervious pavement systems, only those of 3,000 square feet or more are required to be inspected and patios for private-use at single-family homes, townhomes, or condominiums are specifically excluded. In the case of large subdivisions where the total pervious pavement system area is equal to or greater than 3,000 square feet, but the pervious pavement installations are on individual driveways that are less than 3,000 square feet, inspection of a representative number of driveways will suffice.

Provision C.3.h.ii.(6) The Previous Permit required Permittees to inspect at least 20% of all stormwater treatment systems annually, at least 20% of all vault-based systems annually, and every treatment system at least once every 5 years. Permittees have indicated that each inspection of a Regulated Project routinely includes inspection of pervious pavement systems, stormwater treatment systems and HM controls installed at the Project. Therefore, this Provision revises the inspection frequency requirements such that the minimum number of inspections required annually is tied to a percentage of the total number of Regulated Projects, instead of the total number of individual treatment systems and HM controls. This lessens the tracking burden for the Permittees and better reflects the way actual inspections are conducted.

This Provision requires each Permittee to inspect all its Regulated Projects at least once every 5 years and inspect an average of 20%, but no less than 15% of the total number of Regulated Projects annually. This requirement serves to prevent failed or improperly maintained pervious pavement systems, stormwater treatment systems, or

HM controls from going undetected until the 5th year. Neither of these inspection frequency requirements interferes with the Permittees' current ability to prioritize their inspections based on factors such as types of maintenance agreements, owner or contractor maintained systems, maintenance history, past compliance problems at certain Projects, etc.

Provision C.3.h.ii.(6)(d) This Provision allows Permittees to accept third party inspection reports for vault-based stormwater treatment systems in lieu of conducting Permittee inspections, but only if the third party inspections are conducted at least annually, which is the normal frequency for maintenance of these systems. Each third party inspection must be included in the database or tabular format required in Provision C.3.h.ii.(4) and (5) and clearly identified as a third party inspection, Each third party inspection report must document the third party inspection company, date of inspection, condition of the treatment unit(s) at the time of inspection, maintenance activities performed, and appearance of the inside of the vault units (with photos) before and after maintenance.

Provision C.3.h.ii.(7) As the number of Regulated Projects grows, the Permittees' O&M inspection programs must grow as well. Therefore, this Provision requires each Permittee to develop and implement an Enforcement Response Plan (ERP) for O&M inspections. The ERP serves as a reference document for inspection staff so that consistent enforcement actions can be taken to bring development projects into compliance. This Provision establishes minimum requirements for the ERPs. One of these requirements is that corrective actions must be implemented within 30 days after a problem is identified by an inspector. Thirty days is more than adequate time, considering that many of the problems identified in past O&M inspection reports have been lack of maintenance service or build-up of sediment or debris. The correction of such deficiencies should not take more than 30 days. This Provision also allows for greater than 30 days to complete permanent corrective actions, such as installing additional curb cuts and making grading or vegetation improvements.

Provision C.3.h.iv. This Provision sets the implementation dates for adding pervious pavement to Permittees' O&M programs and complying with the revised minimum inspection frequencies to July 1, 2016, so as to align with the Permittees' fiscal years. This allows time for the Permittees to revise their O&M programs and budget for the revisions. This Provision also specifies a July 1, 2017, due date for implementation of an ERP for the same reasons.

Provision C.3.h.v. As in the Previous Permit, this Provision requires the Permittees to maintain a database or equivalent tabular format with detailed information on each O&M inspection and any necessary enforcement actions against Regulated Projects. To lessen the burden of reporting, this Provision only requires summary data on inspections conducted each fiscal year to be reported in the Annual Report, instead of detailed information on each O&M inspection. However, upon request by the Executive Officer, detailed information from the database or tabular format must be submitted.

Provision C.3.i. (Required Site Design Measures for Small Project and Detached Single-Family Homes Projects) contains requirements on single-family home projects that create and/or replace 2,500 square feet or more of impervious surface and small development projects that create and/or replace > 2,500 ft^2 to <10,000 ft^2 impervious surface (collectively over the entire project). A detached single-family home project is defined as the building of one single new house or the addition and/or replacement of impervious surface to one single existing house, which is not part of a larger plan of development. This Provision requires these projects to select and implement one or more stormwater site design measures from a list of six. These site design measures are basic methods to reduce the amount and flowrate of stormwater runoff from projects and provide some pollutant removal treatment of the runoff that does leave the projects. Under this Provision, only projects that already require approvals and/or permits under the Permittees' current planning, building, or other comparable authority are regulated. Hence this Provision does not require Permittees to regulate small development and single-family home projects that would not otherwise be regulated under the Permittees' current ordinances or authorities. Water Board staff recognizes that the stormwater runoff pollutant and volume contribution from each one of these projects may be small; however, the cumulative impacts could be significant. This Provision serves to address some of these cumulative impacts in a simple way that will not be too administratively burdensome on the Permittees.

Provision C.3.j. (Green Infrastructure Planning and Implementation) requires Permittees to complete and implement a Green Infrastructure Plan (Plan) for the inclusion of low impact development drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other storm drain infrastructure elements.

The Plan is intended to serve as an implementation guide and reporting tool during this and subsequent Permit terms to provide reasonable assurance that urban runoff Total Maximum Daily Load (TMDL) wasteload allocations (e.g., for the San Francisco Bay mercury and PCBs TMDLs) will be met, and to set goals for reducing, over the long term, the adverse water quality impacts of urbanization and urban runoff on receiving waters. For this Permit term, the Plan is in lieu of expanding the definition of Regulated Projects prescribed in Provision C.3.b.ii. to include all new and redevelopment projects that create or replace 5,000 square feet or more of impervious surface areas and road projects that just replace existing imperious surface area. However, subsequent permits may include different impervious surface thresholds or other criteria for Regulated Projects. The Plan also provides a mechanism to establish and implement alternative or in lieu compliance options for Regulated Projects and to account for and justify Special Projects in accordance with Provision C.3.e.ii.

Over the long term, the Plan is intended to describe how the Permittees will shift their impervious surfaces and storm drain infrastructure from gray, or traditional storm drain infrastructure where runoff flows directly into the storm drain and then the receiving water, to green—that is, to a more-resilient, sustainable system that slows runoff by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and

evapotranspiration, and uses bioretention and other green infrastructure practices to clean stormwater runoff.

The Plan shall also identify means and methods to prioritize particular areas and projects within each Permittee's jurisdiction, at appropriate geographic and time scales, for implementation of green infrastructure projects. Further, it shall include means and methods to track the area within each Permittee's jurisdiction that is treated by green infrastructure controls and the amount of directly connected impervious area. As appropriate, it shall incorporate plans required elsewhere within this Permit, and specifically plans required for the monitoring of and to ensure appropriate reductions in trash and PCBs, mercury, and other pollutants. Permittees may comply with any requirement of this Provision through a collaborative effort.

Provision C.3.j.i.(1) This Provision requires each Permittee to prepare a framework or workplan that describes specific tasks and timeframes for developing its Green Infrastructure Plan. The framework or workplan is required to be approved by each Permittee's governing body, mayor, city manager, or county manager by June 30, 2017. This approval process provides assurance to the Water Board that Permittees are committed to the development of the Plan and implementation of green infrastructure.

Provision C.3.j.i.(2) This Provision specifies minimum elements that each Green Infrastructure Plan must contain to ensure that each Plan is robust and appropriately identifies the means and methods that each Permittee will employ to implement green infrastructure over time. These minimum elements (discussed below) are not overly prescriptive, so as to allow Permittees flexibility in developing their Plans.

(a) A mechanism to prioritize and map areas for potential and planned projects, both public and private, on a drainage-area specific basis. Implementation of these projects is required to be projected over the same timeframes as specified in Provisions C.11. and C.12. for assessing mercury and PCB load reductions because green infrastructure and projects are an acknowledged means of pollutant load reductions. Each Permittee has flexibility in choosing the mechanism as long as it includes criteria for prioritization and outputs that can be incorporated into its long-term planning and capital improvement processes.

(b) Targets for the amount of impervious surface, from public and private projects, within the Permittee's jurisdiction to be retrofitted over the same timeframes as specified in Provisions C.11. and C.12. for assessing mercury and PCB load reductions. These self-determined targets represent the green infrastructure work that each Permittee has proactively identified will be completed beyond what would be completed in its community anyway.

(c) A process for tracking and mapping completed projects, public and private, and making the information publicly available. Again, each Permittee has flexibility in what they use to comply with this Provision.

(d) General guidelines and standard specifications for overall streetscape and project design and construction to ensure that projects have a unified, complete design that implements the range of functions associated with the projects. These

guidelines and standard specifications, while crucial to a Green Infrastructure Plan, already exist in many reference documents for green infrastructure design and are readily available.

(e) Requirement(s) that projects be designed to meet the treatment and hydromodification sizing requirements in Provisions C.3.c. and C.3.d. In recognition of space and drainage constraints that may occur for public green infrastructure road projects not subject to Provision C.3.b.ii. (i.e., non-Regulated Projects), this Provision allows Permittees to collectively propose a single approach for how to proceed should project constraints preclude fully meeting the C.3.d. sizing requirements. The single approach can include different options to address specific issues, constraints, or scenarios.

(f) A summary of the planning documents the Permittee has updated or otherwise modified as well as how the Permittee will ensure that green infrastructure requirements will be included in future plans. The purpose of this element is to show that each Permittee is considering green infrastructure in all aspects of its urban planning.

(g) A workplan to complete prioritized projects identified as part of a Provision C.3.e Alternative Compliance program or part of Provision C.3.j Early Implementation.

(h) An evaluation of prioritized project funding options, including, but not limited to: Alternative Compliance funds; grant monies, including transportation project grants from federal, state, and local agencies; existing Permittee resources; new tax or other levies; and other sources of funds.

At U.S. EPA's request, Water Board staff has included at the end of this Fact Sheet section an outline of information used in part by MS4 permittees in the Los Angeles area in their preparation of watershed management plans. We recommend that Permittees consider this information as they prepare Green Infrastructure Plans.

Provision C.3.j.i.(5) requires each Permittee to document in its 2017 Annual Report that the framework or workplan for development of its Green Infrastructure Plan was approved by June 30, 2017, as required by Provision C.3.j.i.(1). This Provision also requires each Permittee to submit its Green Infrastructure Plan and documentation of the legal mechanisms to implement the Plan with the 2019 Annual Report. Based on other cities' past experiences in developing Green Infrastructure Plans, Water Board staff believes the deadlines specified provide adequate time for each Permittee to complete the framework or workplan as well as the Green Infrastructure Plan itself. Allowing the entire permit term to complete the Green Infrastructure Plans is too much time and prevents any of the Plans from being used by Board staff to inform the development of the MRP in the next permit term.

Provision C.3.j.ii.(1) requires each Permittee to prepare and maintain a list of green infrastructure projects, public and private, that are already planned for implementation during the permit term and infrastructure projects planned for implementation that have potential for green infrastructure measures.

Provision C.3.j.ii.(2) requires the list to be submitted with each Annual Report along with a summary of planning or implementation status for each public green

infrastructure project and each private green infrastructure project that is not also a Regulated Project under Provision C.3.b.ii. This Provision also requires each Permittee to include a summary of how each public infrastructure project with green infrastructure potential will include green infrastructure measures to the maximum extent practicable during the permit term. For any public infrastructure project where implementation of green infrastructure measures is not practicable, the Permittee is required to submit a brief description of the project and the reasons green infrastructure measures were impracticable to implement.

The purpose of Provision C.3.j.ii. is to ensure that each Permittee is proactively developing green infrastructure projects and including green infrastructure elements into already planned infrastructure projects as much as possible, while the Green Infrastructure Plan is being developed.

Provision C.3.j.iii. requires the Permittees, individually or collectively, to track processes, assemble and submit information, and provide information, materials, and presentations as needed to assist relevant regional, state, and federal agencies to plan, design , and fund green infrastructure measures into local infrastructure projects, including transportation projects.

Provision C.3.j.iv. requires the Permittees, individually or collectively, to develop and implement regionally-consistent methods to track and report implementation of green infrastructure measures including treated area and connected and disconnected impervious area on both public and private parcels within their jurisdictions. The methods shall also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met.

Attachment A to U.S. EPA's Comments on the May 11, 2015 Tentative Order Suggested Components of Green Infrastructure Plans

Outlined below are some potential ideas for Green Infrastructure (GI) plans.to be developed by Bay Area permittees during MRP 2.0. Components provided below primarily arise from Los Angeles Regional Water Board guidance for reasonable assurance in watershed management plans as part of MS4 permit. Many components, but perhaps not all, will be applicable to GI plans for Bay Area. EPA encourages the Water Board to consider these ideas, modify as they deem appropriate, and include similar description of GI framework in the MRP 2.0 Fact Sheet. We recognize the continued partnership of MS4 permittees, the Water Board, EPA, and other stakeholders to discuss these ideas prior to inclusion into final GI plans.

A. Identify the water quality priorities with watershed.
   1. Include any applicable required water quality milestones and compliance deadlines
   2. Describe watershed features, waterbodies any other relevant environmental setting information
   3. Outline other municipal specific goals to be addressed; e.g., flood risk, sea level protection, groundwater infiltration.

B. Describe current BMPs and estimate existing pollutant loads
   1. List pollutant sources in watershed
   2. Provide map of major MS4 outfalls
   3. List any current BMPs within watershed (structural and non-structural)
   4. Using existing data (up to 10 yrs), give estimates of pollutant loads from watershed. (could be cone-based if no flow measurements available)
   5. Define on pollutant specific basis
   6. To extent data available and feasible, assess critical condition loads
   7. Describe variability of estimations.

C. Estimate required pollutant load reductions
   1. To extent feasible, provide estimate of pollutant load reductions, if mass-based then calculate difference between current and allowable loads; if concentration- based then define the two values.

D. Identify future control measures/BMPs/strategies to be implemented
   1. Describe drainage areas for implementation
   2. Identify control measures for stormwater and non-stormwater discharges; include number, location(s) and type; i.e., structural or non-structural controls, within new development, retrofit of existing development, stream/habitat restoration projects,
   3. Clarify pollutants to be addressed
   4. Define/map location of each control measure in watershed/jurisdiction
   5. Quantify upstream drainage area captured by each BMP
   6. Clarify if municipal effort only, private efforts or public/private projects
   7. Identify if project is within local jurisdiction or regional and describe cities involved.

E. Provide schedule of implementation
   1. Identify interim milestones and dates for achievement (within this permit cycle)
   2. Identify all future and final dates for achievement

3. Demonstrate that existing and future control measures will yield final pollutant load reductions and/or meet receiving water limits.

F. Provide Pollutant Reduction Plan
   1. Identify compliance points (should be consistent with any existing regulatory compliance locations; e.g., TMDL monitoring sites expected to assess compliance)
   2. Consider assessment locations in association with MS4 outfalls to monitor pollutant load responses due to upstream control measures.
   3. Describe and evaluate selected control measures - appropriate for pollutant and sizing for load capture
   4. Demonstrate selected control measures have reasonable assurance to meet interim/final requirements.
   5. Describe adaptive management process if pollutant milestones are not met and added BMPs are needed
   6. Include timeframe for future re-assessments.

G. If model used, provide description of watershed model
   1. Identify model type; e.g., watershed, receiving water, BMP performance, empirical
   2. Provide (minimum required) model components: input data, parameters, BMP performance parameters, output
   3. Describe model calibration acceptance criteria
   4. Describe efficiency for BMP performance parameters
   5. Demonstrate model outputs for existing pollutant loads will be addressed by combination of control measures/BMPs to achieve final milestones.

H. Describe corresponding water quality monitoring program
   1. Identify parameters of concern, all monitoring sites, sampling frequency (including wet and dry weather events)
   2. Clarify which monitoring sites are MS4 outfalls
   3. Briefly describe analytical methods and QA procedures to support monitoring
   4. Describe any future monitoring locations and anticipated timeframe of data collection
   5. Briefly describe pollutant sources upstream of monitoring sites.

I. Identify post-implementation tracking assessment efforts
   1. Once completed, describe the BMPs implemented, including any modifications from original project design
   2. Describe assessment procedures for evaluating effectiveness of control measure and corresponding pollutant load reductions for each implemented BMP, as necessary
   3. Provide schedule for re-evaluation of BMP load reductions over long term.

C.4. Industrial and Commercial Site Controls

Legal Authority

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(C) requires "[a] description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system." Other specific legal authority is cited below.

Specific Provision C.4. Requirements

Provision C.4. has been revised from the Previous Permit so that related topics are grouped together better. A new Provision C.4.d. – Inspections has been created. It essentially consolidates, from the Previous Permit, the inspection requirements in Provision C.4.d. – Inspection Plan and Provision C.4.c. – Enforcement Response Plan.

Provision C.4.a (Legal Authority)

Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) provides that each Permittee must demonstrate that it can control "through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity."

Provision C.4.b (Inspection Plan)

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(C)(1) provides that Permittees must "identify priorities and procedures for inspections and establishing and implementing control measures for such discharges." The Permit continues to require Permittees to implement an industrial and commercial site controls program to reduce pollutants in runoff from all industrial and commercial sites/sources.

Federal NPDES regulation 40 CFR 122.26(d)(2)(ii) provides that Permittees "[p]rovide an inventory, organized by watershed of the name and address, and a description (such as SIC codes) which best reflects the principal products or services provided by each facility which may discharge, to the municipal separate storm sewer, storm water associated with industrial activity."

The Permit continues to require Permittees to identify various industrial sites and sources subject to the Industrial General Permit or other individual NPDES permit. U.S. EPA supports the municipalities regulating industrial sites and sources that are already covered by an NPDES permit:

> Municipal operators of large and medium municipal separate storm sewer systems are responsible for obtaining system-wide or area permits for their system's discharges. These permits are expected to require that controls be placed on storm water discharges associated with industrial activity which discharge through the municipal system. It is anticipated that general or individual permits covering industrial storm water discharges to these municipal separate storm sewer systems will require industries to comply with the terms of the permit issued to the municipality, as well as other terms specific to the Permittee.[23]

And:

> Although today's rule will require industrial discharges through municipal storm sewers to be covered by separate permit, USEPA still believes that municipal operators of large and medium municipal systems have an important role in source identification and the development of pollutant controls for industries that discharge storm water through municipal separate storm sewer systems is appropriate. Under the CWA, large and medium municipalities are responsible for reducing pollutants in discharges from municipal separate storm sewers to the maximum extent practicable. Because storm water from industrial facilities may be a major contributor of pollutants to municipal separate storm sewer systems, municipalities are obligated to develop controls for storm water discharges associated with industrial activity through their system in their storm water management program.[24]

This Permit does not require the Permittees to submit the list of facilities scheduled for inspection each year with annual reports. Instead, Permittees are to add each year's inspection list to the Inspection Plan as part of the annual update to the Inspection Plan. Permittees may choose to keep their annual lists in their databases or in electronic form. The annual lists must be made readily available to Water Board staff or its representatives upon request.

Water Board staff reviewed about 20% of the Permittees' Inspection Plans during the Previous Permit term. A few of those Inspection Plans also provide detailed flow charts or instructions on how to conduct inspections, fill out the inspect forms, execute enforcement actions, conduct follow-up, and fulfill tracking and reporting for the MRP. These comprehensive Inspection Plans help ensure inspection consistency and serve as excellent training documents for new inspection staff.

Provision C.4.c (Enforcement Response Plan) requires the Permittees to implement and update, as needed, their Enforcement Response Plan (ERP) that serves as a reference for inspection staff to take consistent and timely responses to actual or potential stormwater pollution problems discovered in the course of industrial/commercial stormwater inspections. The ERP provides guidance on (1) progressively stricter enforcement to achieve timely compliance, (2) enforcement scenarios, (3) follow-up inspections, (4) referral to another agency, (5) appropriate time periods for

[23] *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990, Rules and Regulations. P. 48056
[24] Ibid

implementation of corrective actions, and (6) the roles and responsibilities of staff responsible for implementing the ERP. ERPs are unique to each Permittee. As such, this Permit continues to have broad requirements for the ERP. This allows the individual Permittee maximum flexibility to customize the ERP to fit its legal authority and the way it does business. Corrective actions must be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Short timeframes for implementing corrective actions encourage businesses to take care of the issues promptly, thus prevent mobilizing potential discharges. Permittees must also require immediate cessation of active non-stormwater discharges, timely implementation of corrective actions to clean up the discharge, and implementation of measures to prevent future active discharges.

This Permit standardizes and clarifies the ERP requirements in provisions C.4., C.5, and C.6. to eliminate any ambiguity in the requirements.

Provision C.4.d (Inspections) takes the inspection requirements from the Previous Permit's Provision C.4.b. Inspection Plan and C.4.c. ERP and consolidates them together into this Provision. Inspection frequencies are determined by each Permittee in its Inspection and Enforcement Response Plans.

U.S. EPA guidance states "management programs should address minimum frequency for routine inspections." The U.S. EPA Fact Sheet—Visual Inspection says "[t]o be effective, inspections must be carried out routinely." [25]

Permittees have asked that this Permit reduce the record keeping and reporting requirements. The specific record keeping requirements are minimal information that needs to be recorded for each inspection and it is essential to document each inspection to develop a history for the facility. Water Board staff evaluations of MS4 programs showed that many Permittees have very comprehensive inspection database records. Annual reports need to provide enough information to show compliance. During the Previous Permit term, annual reports showed few violations for the corresponding number of inspections completed. This did not match with the field inspection experience of Water Board staff. Further investigation showed that some Permittees do not consider potential discharges to be violations.

The Previous Permit exempted verbal warnings from being reported in the annual reports. Water Board staff expected verbal warnings to have very limited use and only given for very minor issues that do not warrant anything in writing. However, from Water Board inspections, and annual report and ERP reviews, we concluded that many Permittees report minimal violations for the number of inspections completed because only observed non-stormwater discharges were considered violations and issued some type of written enforcement action. Potential discharges were all given verbal warnings and it was unclear if these potential discharges were corrected in a timely manner because there was no written documentation on the potential discharges or verbal warnings issued. Examples of potential discharges include housekeeping issues, evidence of actual non-stormwater discharges that are not ongoing during an inspection, lack of BMPs,

[25] U.S. EPA. 1999. 832-F-99-046, "Storm Water Management Fact Sheet – Visual Inspection."

inadequate BMPs, and inappropriate BMPs. Potential discharges need timely corrective actions.

Some Permittees feel that a 10-business day window to implement corrective action is not necessary and even unreasonable during the dry months for potential discharges and especially for minor potential discharges. Permittees have the discretion to add a rationale for allowing a longer time period, especially for corrective actions that require things such as capital improvements, revisions to standard operating procedures, and staff training. However, Water Board staff thinks that prompt implementation of corrective actions for most potential discharges minimizes the risk of potential discharges becoming actual discharges when things are knocked over, when the area is hosed with water, and/or during the next rain event. The Water Board staff has been told by a couple of Permittees that they prefer shorter corrective action timeframes because sites tend to take care of them right away versus forgetting about the corrective actions when given a longer corrective action timeframe. Throughout the Previous Permit term, Water Board staff asked Permittees for a list of minor potential discharges. The only minor issue listed was open dumpster/garbage can lids. Water Board staff concurred that open dumpster/garbage can lids is minor, can be corrected immediately, and would not require any additional follow-up. Water Board industrial and construction inspectors consider open dumpster/garbage can lids and small amounts of trash/debris on the ground to be minor violations that can quickly be corrected, because staff at the industrial or construction sites can immediately cover the dumpsters and pick up and appropriately dispose of the trash. Water Board inspectors note those issues and corrective actions in their inspection reports. This Permit now requires reporting of all potential and actual non-stormwater discharges based on the enforcement levels in each Permittee's ERP, so that Water Board staff can evaluate whether Permittees are conducting appropriate followup.

This Permit becomes effective half way through the 2015-2016 reporting year. The reporting requirements for this Permit are slightly different than the reporting requirements for the Previous Permit. In response to the Permittees commenting on the difficulties of reporting under two different permits, this Permit, C.4.d.iii.(1), continues the reporting requirements from the Previous Permit to the end of the 2015-2016 reporting year. The new reporting requirements, C.4.d.iii.(2), become effective the 2016-2017 reporting year.

Provision C.4.f (Staff Training) section of the Permit requires the Permittees to conduct annual staff trainings for inspectors. Trainings are necessary to keep inspectors current on enforcement policies and current MEP BMPs for industrial and commercial stormwater runoff discharges.

C.5. Illicit Discharge Detection and Elimination

Legal Authority

The following legal authority applies to section C.5:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulations 40 CFR 122.26(d)(1)(iii)(B)(1) provides that the Permittee shall include in their application "the location of known municipal storm sewer system outfalls discharging to waters of the United States."

Federal NPDES regulations 40 CFR 122.26(d)(1)(iii)(B)(5) provides that the Permittee shall include in their application "[t]he location of major structural controls for storm water discharge (retention basins, detention basins, major infiltration devices, etc."

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B) provides that the Permittee shall have adequate legal authority to "[p]rohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer."

Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(F) provides that the Permittee shall have adequate legal authority to "[c]arry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer."

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B) requires that the Permittee have a " description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(1) requires a "program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal storm sewer system."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(2) requires a "description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3) requires a "description of procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water."

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) requires a "description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer."

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(5) requires a "description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from municipal separate storm sewers."

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(7) requires a "description of controls to limit infiltration of seepage from municipal sanitary sewers to municipal separate storm sewer systems where necessary."

Fact Sheet Findings in Support of Provision C.5

C.5-1 Illicit discharges that are not comprised entirely of stormwater are not authorized to enter the MS4 and are considered to be illicit discharges, unless authorized by a separate NPDES permit, or exempted or conditionally exempted in Provision C.15.

C.5-2 Every Permittee must have the ability to effectively prohibit non-stormwater discharges to the MS4 by actively detecting and eliminating illicit discharges and disposal into its MS4.

C.5-3 Illicit discharges to the storm drain system can be detected in several ways. Permittee staff can detect discharges during their course of other tasks, and business owners and other aware citizens can observe and report suspect discharges. The Permittee must have a direct means for these reports of suspected polluted discharges to the MS4 to be received, responded to in a timely manner, and to receive adequate documentation, tracking, and response through problem resolution.

Removal of Routine Collection System Screening Requirement

The Previous Permit required the Permittees to perform routine surveys for illicit discharges and illegal dumping in above ground check points in the collection system including elements that are typically inspected for maintenance purposes, such as end of pipes, creeks, flood conveyances, storm drain inlets, and catch basins, to seek and eliminate illicit connections and discharges. The results of the screenings were reported in annual reports. No illicit connections were reported. However, Permittees have found illicit discharges during the screenings and they were cleaned up. It is unclear if personnel conducting the screenings reported these illicit discharges to the illicit discharge staff for investigation and tracking. We have added language to C.5.c. – Spill, Dumping, and Complaint Response Program to ensure that illicit discharges found by municipal staff conducting routine maintenance and inspection activities on the collection system are reported to the illicit discharge staff for investigation and tracking. This is based on the federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3), which requires "procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water."

Specific Provision C.5 Requirements

Provision C.5.a (Legal Authority) requires each Permittee have adequate legal authority to prohibit illicit discharges to storm sewers as required by federal regulations at 40 CFR 122.26(d)(2)(i)(B). Illicit and inadvertent connections to MS4 systems result in a discharge into the MS4 that is not comprised entirely of stormwater. Every Permittee must have the ability to discover, inspect, enforce its ordinance, track, and clean up stormwater pollution discharges by illicit connections and other illegal discharges to the MS4 system.

Provision C.5.b (ERP) requires Permittees to implement and update, as needed, their ERP to ensure consistent and timely response to illicit discharges and connections to the MS4. The ERP provides guidance on (1) progressively stricter enforcement to achieve timely compliance, (2) follow-up inspection, (3) referral to another agency, (3) appropriate time periods for implementation of corrective actions, and (4) the roles and responsibilities of staff responsible for implementing the ERP. Corrective actions must be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Permittees must also require immediate cessation of active discharges, and timely implementation of corrective actions to clean up the discharge and implementation of measures to prevent future active discharges.

Water Board staff reviewed more than half of the Permittees' ERPs during the Previous Permit term. Almost all of those Permittees have one ERP to satisfy the ERP requirements in provisions C.4., C5., and C.6. While a couple of Permittees have detailed, comprehensive plans, more than half of the ERPs reviewed did not comply with the ERP requirements in the Previous Permit. Therefore, the ERP requirements in this Permit are standardized in provisions C.4., C5., and C.6.

Provision C.5.c (Spill, Dumping, and Complaint Response Program) Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) requires "a description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer." This Provision of the Permit requires the Permittees to establish and maintain a central point of contact including phone numbers for spills, dumping, and complaints reporting. Reports from the public and other Permittee staff are an essential tool in discovering and investigating illicit discharge activities into the MS4. Maintaining contact points will help ensure that there is effective reporting to assist with the discovery of prohibited discharges. Each Permittee must have a means to adequately track the suspected polluted discharges from reporting through problem resolution.

Provision C.5.d (Tracking and Case Followup) section of the Permit requires Permittees to track and monitor followup for all incidents and discharges reported to the spills, dumping, and complaint response system that could discharge into the MS4. This requirement is included so Permittees can demonstrate compliance with the ERP requirements in Provision C.5.b and to ensure that illicit discharge reports receive adequate follow up through to resolution.

All municipalities, counties, district, and other public entities that own or operate sanitary sewer systems greater than one mile in length that collect and/or convey untreated or partially treated wastewater to a publicly owned treatment facility in California are

required to report sanitary sewer overflows to the California Integrated Water Quality System Project pursuant to the State Water Board's Order No. 2006-003-DWQ (Statewide General Waste Discharge Requirements for Sanitary Sewer Systems) and Order WQ 2013-0058-EXEC (Adopting Amended Monitoring Requirements for Statewide General Waste Discharge Requirements for Sanitary Sewer Systems order. Sewage discharges that are reported to the California Integrated Water Quality System Project do not need to be tracked and reported in Provision C.5.

Provision C.5.e (Control of Mobile Sources) requires each Permittee to implement a program to reduce the discharge of pollutants from mobile businesses. The purpose of this section is to implement oversight and control of pollutants associated with mobile business sources to the MEP. The Previous Permit required Permittees to develop and implement a program to reduce the discharge of pollutants from mobile businesses. Water Board staff evaluated five Permittees' implementation of Provision C.5., which included Provision C.5.e. – Control of Mobile Sources. Water Board staff evaluated one Permittee in each of the five counties with Permittees covered under the Previous Permit. Three of the Permittees evaluated complied with this Provision. It was evident that they had put in the thought and actions to comply. Two of the Permittees evaluated did not comply with this Provision. They were dependent on the county-wide and/or regional programs to implement this Provision for them. The regional program was supposed to expand the existing regional Surface Cleaner Training and Recognition Program to include two new mobile business categories: automotive washing and carpet cleaning; develop marketing materials, training videos, and self-test applications for those two new mobile business categories; create Spanish tracks of the information for each new business type; and create a web-based application to share information about mobile businesses among the Permittees. At the time of the 2013-2014 Annual Report, none of those regional tasks had been completed. In order to understand what Permittees are doing to control pollutants from mobile sources, this Permit continues the requirements of the Previous Permit and collects data on each Permittee's implementation of the provision.

Provision C.5.f (Municipal Separate Storm Sewer System (MS4) Map) As part of the permit application process, federal NPDES regulations 40 CFR 122.26(d)(1)(iii)(B)(1) and 40 CFR 122.26(d)(1)(iii)(B)(5) specify that dischargers must identify the location of any major outfall that discharges to waters of the United States, as well as the location of major structural controls for stormwater discharges. A major outfall is any outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than a circular pipe which is associated with a drainage area of more than 50 acres) or; for areas zoned for industrial activities, any pipe with a diameter of 12 inches or more or its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more). The permitting agency may not process a permit until the applicant has fully complied with the application requirements.[26] If, at the time of application, the information is unavailable, the Permit must require implementation of a program to meet the application requirements.[27] All Permittees have complied with this requirement. This Permit

[26] 40 CFR 124.3 (applicable to state programs, see section 123.25).
[27] 40 CFR 122.26(d)(1)(iv)(E).

continues to require the Permittees to advertise the availability of the maps of their MS4 system and to make available these maps to the public upon request.

C.6. Construction Site Control

Legal Authority

The following legal authority applies to section C.6:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D) requires "[a] description of a program to implement and maintain structural and non-structural best management practices to reduce pollutants in storm water runoff from construction sites to the municipal storm sewer system."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(1) requires "[a] description of procedures for site planning which incorporate consideration of potential water quality impacts."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(2) requires "[a] description of requirements for nonstructural and structural best management practices."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(3) requires "[a] description of procedures for identifying priorities for inspecting sites and enforcing control measures which consider the nature of the construction activity, topography, and the characteristics of soils and receiving water quality."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(D)(4) requires "[a] description of appropriate educational and training measures for construction site operators."

Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) provides that each Permittee must demonstrate that it can control, "through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity."

Federal NPDES regulation 40 CFR 122.26(b)(14) provides that "[t]he following categories of facilities are considered to be engaging in 'industrial activity' for the purposes of this subsection: […] (x) Construction activity including cleaning, grading and excavation activities […]."

Federal NPDES regulation 40 CFR 122.44(d)(1)(i) requires NPDES permits to include limitations to "control all pollutants or pollutant parameters (either conventional, non-conventional, or toxic pollutants) which the Director determines are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality."

Fact Sheet Findings in Support of Provision C.6.

C.6-1 Vegetation clearing, mass grading, lot leveling, and excavation expose soil to erosion processes and increase the potential for sediment mobilization, runoff and deposition in receiving waters. Construction sites without adequate BMP implementation result in sediment runoff rates that greatly exceed the natural erosion rates of undisturbed lands, causing siltation and impairment of receiving waters.

C.6-2 Excess sediment can cloud the water, reducing the amount of sunlight reaching aquatic plants, clog fish gills, smother aquatic habitat and spawning areas, and impede navigation in our waterways. Sediment also transports other pollutants, such as nutrients, metals, and oils and grease. Permittees are on-site at local construction sites for grading and building permit inspections, and also have in many cases dedicated construction stormwater inspectors with training in verifying that effective BMPs are in place and maintained. Permittees also have effective tools available to achieve compliance with adequate erosion control, such as stop work orders and citations.

C.6-3 Mobilized sediment from construction sites can flow into the MS4 and then into receiving waters. According to the 2004 National Water Quality Inventory,[28] States and Tribes report that sediment is one of the top 10 causes of impairment of assessed rivers and streams, next to pathogens, habitat alteration, organic enrichment or oxygen depletion, nutrients, metals, etc. Sediment impairs 35,177 river and stream miles (14% of the impaired river and stream miles). Sources of sedimentation include agriculture, urban runoff, construction, and forestry. Sediment runoff rates from construction sites, however, are typically 10 to 20 times greater than those of agricultural lands, and 1,000 to 2,000 times greater than those of forest lands. During a short period of time, construction sites can contribute more sediment to streams than can be deposited naturally during several decades.[29]

Specific Provision C.6 Requirements

Provision C.6.a. Legal Authority for Effective Site Management. Federal NPDES regulation 40 CFR 122.26(d)(2)(i)(A) requires that each Permittee demonstrate that it can control "through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from site of industrial activity." This section of the Permit requires each Permittee to have the authority to require year-round, seasonally and phase appropriate effective erosion control, run-on and runoff control, sediment control, active treatment systems, good site management, and non stormwater management through all phases of site grading, building, and finishing of lots. All Permittees should already have this authority.

[28] http://www.epa.gov/owow/305b/2004report/2004_305Breport.pdf

[29] U.S. EPA. December 2005. *Stormwater Phase II Final Rule Fact Sheet Series – Construction Site Runoff Control Minimum Control Measure*. EPA 833-F-00-008. Fact Sheet 2.6.

In its Phase II Compliance Assistance Guidance, U.S. EPA says that "[i]nspections give the MS4 operator an opportunity to provide additional guidance and education, issue warnings, or assess penalties."[30] To issue warnings and assess penalties during inspections to achieve timely corrective actions from sites, inspectors must have the legal authority to conduct enforcement.

Provision C.6.b. Enforcement Response Plan (ERP). This section requires each Permittee to implement and update, as needed, its Enforcement Response Plan (ERP), which serves as a reference for inspection staff to take consistent actions and timely response to achieve effective, timely corrective compliance from all public and private construction site owners/operators.

U.S. EPA supports enforcement of ordinances and permits at construction sites, stating "[e]ffective inspection and enforcement requires […] penalties to deter infractions and intervention by the municipal authority to correct violations."[31] In addition, U.S. EPA expects permits issued to municipalities to address "weak inspection and enforcement."[32] For these reasons, the enforcement requirements in this section have been established, while providing sufficient flexibility for each Permittee's unique stormwater program. Prior to the issuance of the Previous Permit, Water Board staff had noted deficiencies in the Permittees' enforcement procedures and implementation during inspections. The most common issues found were that enforcement was not firm and appropriate to correct the violation, and that repeat violations did not result in escalated enforcement procedures. Therefore, the Previous Permit required Permittees to develop ERPs.

The ERP provides guidance on (1) progressively stricter enforcement to achieve timely compliance, (2) enforcement scenarios, (3) follow-up inspections, (4) referral to another agency, (5) appropriate time periods for implementation of corrective actions, and (6) the roles and responsibilities of staff responsible for implementing the ERP. ERPs are unique to each Permittee. As such, this Permit continues to have broad requirements for the ERP. This allows the individual Permittee maximum flexibility to customize the ERP to fit its legal authority and ordinary business practices. Permittees must require immediate cessation of active non-stormwater discharges, timely implementation of corrective actions to clean up the discharge, and implementation of measures to prevent future active discharges. Corrective actions must be implemented before the next rain event, but no longer than 10 business days after the potential and/or actual discharges are discovered. Construction sites are required by the statewide NPDES General Permit for Stormwater Discharges Associated with Construction Activities (Construction General Permit) to keep supplies on hand to address BMP issues rapidly. In a few cases, such as slope inaccessibility, it may require longer than 10 days before crews can safely access an eroded area. Corrective actions can be temporary and more time can be allowed for permanent corrective actions. The Permittees' tracking data needs to provide a rationale for the longer compliance timeframe.

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[30] U.S. EPA. 2000. 833-R-00-002, Storm Water Phase II Compliance Assistance Guide, pp.4-31
[31] U.S. EPA. 1992. Guidance 833-8-92-002. Section 6.3.2.3.
[32] *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990. Rules and Regulations. p.48058.

Water Board staff reviewed more than half of the Permittees' ERPs during the Previous Permit term. While a couple of Permittees have detailed, comprehensive plans, more than half of the ERPs reviewed did not comply with the ERP requirements in the Previous Permit. Therefore, this Permit standardizes and clarifies the ERP requirements in provisions C.4., C.5., and C.6. to eliminate any ambiguity in the requirements.

Provision C.6.c. Best Management Practices Categories. This section requires all Permittees to require all construction sites to have year-round seasonally appropriate effective BMPs in the following six categories: (1) erosion control, (2) run-on and runoff control, (3) sediment control, (4) active treatment systems, (5) good site management, and (6) non stormwater management. These BMP categories are listed in the Construction General Permit. The Water Board decided it was too prescriptive and inappropriate to require a specific set of BMPs that are to be applicable to all sites. Every site is different with regards to terrain, soil type, soil disturbance, and proximity to a waterbody. The Construction General Permit recognizes these different factors and requires site-specific BMPs through the (SWPPP), which addresses the six specified BMP categories. This Permit similarly allows Permittees the flexibility to determine if the BMPs for each construction site are effective and appropriate. This Permit also allows the Permittees and the project proponents the necessary flexibility to make immediate decisions on appropriate, cutting-edge technology to prevent the discharge of construction pollutants into storm drains, waterways, and rights-of-way. Appropriate BMPs for the different site conditions can be found in different handbooks and manuals. Therefore, this Permit is consistent with the Construction General Permit in its requirements for BMPs in the six specified categories.

Vegetation clearing, mass grading, lot leveling, and excavation expose soil to erosion processes and increase the potential for sediment mobilization, runoff into the MS4, and deposition in receiving waters. Construction sites without adequate BMP implementation result in sediment runoff rates that greatly exceed the natural erosion rates of undisturbed lands, causing siltation and impairment of receiving waters. This can even occur in conjunction with unexpected rain events during the dry season (defined as May 1 through September 30). Although rare, significant rains can occur in the San Francisco Bay Region during the dry season. Therefore, Permittees should ensure that construction sites have materials on hand for rapid rain response during the whole year, including during the dry season.

Normally, stormwater restrictions on grading should be implemented during the wet season from October 1 through April 30. Section C.6.c.ii.(1).d of the Permit requires "project proponents to minimize grading during the wet season and scheduling of grading with seasonal dry weather periods to the extent feasible." If grading does occur during the wet season, Permittees shall require project proponents to (1) implement additional BMPs as necessary, (2) keep supplies available for rapid response to storm events, and (3) minimize wet-season, exposed, and graded areas to the absolute minimum necessary.

Slope stabilization is necessary on all active and inactive slopes during rain events regardless of the season, except in areas implementing advanced treatment. Slope stabilization is also required on inactive slopes throughout the rainy season. These

requirements are necessary because unstabilized slopes at construction sites are significant sources of erosion and sediment discharges during rainstorms. "Steep slopes are the most highly erodible surface of a construction site, and require special attention."[33] U.S. EPA emphasizes the importance of slope stabilization when it states "slope length and steepness are key influences on both the volume and velocity of surface runoff. Long slopes deliver more runoff to the base of slopes and steep slopes increase runoff velocity; both conditions enhance the potential for erosion to occur."[34] In lieu of vegetation preservation or replanting, soil stabilization is the most effective measure in preventing erosion on slopes. Research has shown that effective soil stabilization can reduce sediment discharge concentrations up to six times, as compared to soils without stabilization.[35] Slope stabilization at construction sites for erosion control is already the consensus among the regulatory community and is found throughout construction BMP manuals and permits. For these reasons, Permittees must ensure that slope stabilization is implemented on sites, as appropriate.

It is also necessary that Permittees ensure that construction sites are revegetated as early as feasible. Implementation of revegetation reduces the threat of polluted stormwater discharges from construction sites. Construction sites should permanently stabilize disturbed soils with vegetation at the conclusion of each phase of construction.[36] A survey of grading and clearing programs found one-third of the programs without a time limit for permanent revegetation, "thereby increasing the chances for soil erosion to occur."[37] U.S. EPA states "the establishment and maintenance of vegetation are the most important factors to minimizing erosion during development."[38]

To ensure the MEP standard and water quality standards are met, active treatment systems may be necessary at some construction sites. Requirements for active system requirements are located in the Construction General Permit, Attachment F.

Provision C.6.d. Plan Approval Process. This section of the Permit requires the Permittees to review project proponents' stormwater management plans for compliance with local regulations, policies, and procedures. U.S. EPA states that it is often easier and more effective to incorporate stormwater quality controls during the site plan review process or earlier.[39] In the Phase I stormwater regulations, U.S. EPA states that a primary control technique is good site planning.[40] U.S. EPA goes on to note that the most efficient controls result when a comprehensive stormwater management system is in place.[41] To determine if a construction site is in compliance with construction and grading ordinances and permits, U.S. EPA states that the "MS4 operator should review

[33] Schueler, T., and H. Holland. 2000. *Muddy Water In—Muddy Water Out*? The Practice of Watershed Protection. p. 6.
[34] U.S. EPA. 1990. *Sediment and Erosion Control: An Inventory of Current Practices*. p. II-1.
[35] Schueler, T., and H. Holland. 2000. "Muddy Water In—Muddy Water Out?" *The Practice of Watershed Protection*. p. 5.
[36] Ibid.
[37] Ibid. p. 11.
[38] U.S. EPA. 1990. *Sediment and Erosion Control: An Inventory of Current Practices*. p. II-1.
[39] U.S. EPA. 2000. *Storm Water Phase II Compliance Assistance Guide*. EPA 833-R-00-002. Section 6.3.2.1.
[40] *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990. Rules and Regulations. p. 48034.
[41] Ibid.

the site plans submitted by the construction site operator before ground is broken."[42] Site plan review aids in compliance and enforcement efforts since it alerts the "MS4 operator early in the process to the planned use or non-use of proper BMPs and provides a way to track new construction activities."[43]

Provision C.6.e. (Inspections) The Water Board allows flexibility on the legal authority language, ERP, and BMPs required on a site. This section of the Permit pulls together the accountability of the whole Provision through regular inspections, consistent enforcement, and meaningful tracking. These three elements will help ensure that effective construction pollutant controls are in place in order to minimize construction polluted runoff to the storm drain and waterbodies.

This section clearly identifies the level of effort necessary by Permittees to minimize construction pollutant runoff into storm drains and ultimately, waterbodies, including tracking and reporting sufficient to demonstrate and document Permittee compliance.

This section requires monthly inspections during the wet season of all construction sites disturbing one or more acre of land, all hillside projects, and all high priority sites determined by the Permittee or the Water Board to be significant threats to water quality. Inspections must focus on the adequacy and effectiveness of the site-specific BMPs implemented for the six BMP categories. Each Permittee must implement its ERP and require timely corrections of all actual and potential problems observed. All corrective actions must be implemented before the next rain event, but no longer than 10 business days after the violations are discovered. A longer time period to implement corrective actions is allowed with a reasonable rationale. All inspections must be recorded on a written or electronic inspection form, and also tracked in an electronic database or tabular format.

The Previous Permit required Permittees to have the legal authority to require effective construction stormwater controls at all construction sites, regardless of the amount of soil disturbed. Water Board staff has observed disturbed construction sites where minimal BMPs were being implemented, and has seen stormwater transport construction site pollutants into the storm drain. For these reasons, ideally, all construction sites with a grading permit from a Permittee should have stormwater inspections during the rainy season to ensure adequate BMPs are implemented and construction pollutants are not entering the storm drain. Construction sites with steeper slopes pose a more-significant threat of discharging construction-related pollutants to the storm drain because they are likely to have higher runoff velocities and because their BMPs must be more robust and more-robustly installed and maintained in order to control pollutants, as compared to less-steep sites. Water Board staff has observed storm water move sediment and other construction-related pollutants into storm drains at sites ranging from those with flat slopes to those with slopes greater than 15%. Because of the relatively greater threat posed by steeper sites, this Permit adds a specific requirement to inspect all hillside projects disturbing greater than or equal to 5,000 square feet of soil. For those Permittees that do not have a hillside development

[42] U.S. EPA. 2000. *Storm Water Phase II Compliance Assistance Guide*. EPA 833-R-00-002. Section 4.6.2.4, pp. 4–30.
[43] Ibid. pp. 4–31.

map or definition, this Permit defines hillside development as development occurring on land with a slope greater than or equal to 15%.

The Previous Permit required Permittees to report the number of violations fully corrected prior to the next event, but no longer than 10 business days after the potential and actual discharges are discovered or otherwise considered corrected in a timely, though longer period. This proved challenging for many Permittees because they track enforcement actions and not discreet violations. While Water Board staff does want to understand how many potential and actual discharges are discovered and resolved in a timely manner, this would require significant changes in databases for some Permittees. The big picture of how many violations or enforcement actions for annual reporting will suffice, as inspection forms are available for more detailed review. Therefore, this Permit allows Permittees to either report by enforcement actions or discreet number of potential and actual discharges.

The Permittees asked that this Permit reduce the reporting since all of the tracking data are available to Water Board staff. This Permit reduces the reporting to what is minimally necessary to provide meaningful data and demonstrate permit compliance.

This Permit becomes effective half way through the 2015-2016 reporting year. The reporting requirements for this Permit are slightly different than the reporting requirements for the Previous Permit. In response to the Permittees commenting on the difficulties of reporting under two different permits, this Permit, Provision C.6.e.iii.(1), continues the reporting requirements from the Previous Permit to the end of the 2015-2016 reporting year. The new reporting requirements, C.6.3.iii.(3), become effective the 2016-2017 reporting year.

Provision C.6.f. Staff Training. This section of the Permit requires Permittees to conduct annual staff trainings for municipal staff. These trainings have been found to be extremely effective means to educate inspectors and to inform them of any changes to local ordinances and state laws. Trainings provide valuable opportunity for Permittees to network and share strategies used for effective enforcement and management of erosion control practices.

C.7. Public Information and Outreach

Legal Authority

The following legal authority applies to section C.7:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(6) requires "[a] description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewers associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(5) requires "a description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from municipal separate storm sewers."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(6) requires "[a] description of educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials."

Fact Sheet Finding in Support of Provision C.7.

C.7-1 An informed and knowledgeable community is critical to the success of a stormwater program since it helps ensure greater support for the program as the public gains a greater understanding of stormwater pollution issues.

C.7-2 An informed community also ensures greater compliance with the program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of area waters.

C.7-3 The public education programs should use a mix of appropriate local strategies to address the viewpoints and concerns of a variety of audiences and communities, including minority and disadvantaged communities, as well as children.[44]

C.7-4 Target audiences should include (1) government agencies and official to achieve better communication, consistency, collaboration, and coordination at the federal, state, and local levels and (2) K-12/Youth Groups.

[44] U.S. EPA. 2000. Storm Water Phase II Compliance Assistance Guide. EPA 833-R-00-002.

C.7-5 Citizen involvement events should make every effort to reach out and engage all economic and ethnic groups.[45]

Removal of Media Relations

The Previous Permit had specific requirements for Permittees to participate in or contribute to a media relations campaign. This Permit removes these specific requirements to allow Permittees more flexibility on how to conduct public outreach on different stormwater runoff pollution messages that they feel are most urgent. It is anticipated that Permittees will continue to use public service announcements, social media, and other free media as part of the public outreach required in Provision C.7.b.

Specific Provision C.7 Requirements

Provision C.7.a. Storm Drain Inlet Marking. Storm drain inlet marking is a long-established program of outreach to the public on the nature of the storm drain system, providing the information that the storm drain system connects directly to creeks and the Bay and does not receive treatment. Past public awareness surveys have demonstrated that this BMP has achieved significant impact in raising awareness in the general public and meets the MEP standard as a required action. Therefore, it is important to set a goal of ensuring that all municipally-maintained inlets are legible labeled with a no dumping message. If storm drain marking can be conducted as a volunteer activity, it has additional public involvement value.

Provision C.7.b. Outreach Campaigns. Permittees have long been implementing outreach campaigns to educate their residents on different stormwater runoff pollution prevention messages. The Permit requires a minimum of one public outreach campaign. It is anticipated that the Bay Area Stormwater Management Agencies Association (BASMAA) will continue implementing the *Our Water, Our World* pesticide use reduction outreach campaign. It is anticipated that individual Permittees, and/or their respective countywide program, and/or BASMAA, will either continue existing public outreach campaigns or start new ones. This Permit removes specificity regarding the expected public outreach campaigns and how they must be conducted. This recognizes that the Permittees have decades of public outreach experience and allows maximum flexibility to best reach their residents regarding the impacts of stormwater pollution on receiving waters and potential solutions to mitigate the problems caused, and positively influence waste disposal practices and runoff pollution generation by encouraging the implementation of appropriate solutions. Permittees can utilize various electronic and print media, and paid and free media to best reach the different various target audiences. This Permit still requires an effectiveness assessment/evaluation after each outreach campaign. This provides the opportunity for the Permittees to evaluate whether they have best reached residents with the utilized stormwater pollution prevention messages in the outreach campaigns and how to move forward with future outreach campaigns.

Provision C.7.c. Stormwater Pollution Prevention Education. As the public becomes more aware of water quality issues and how certain behaviors negatively impact stormwater runoff, they will need more information on how to minimize stormwater

[45] U.S. EPA. 2000. Storm Water Phase II Compliance Assistance Guide. EPA 833-R-00-002.

pollution. The Previous Permit required Permittees to have and publicize a centralized stormwater point of contact to provide the public with information on watershed characteristics and stormwater pollution prevention alternatives. The Permittees already disseminate numerous brochures, pamphlets, and fact sheets on a number of different stormwater pollution prevention messages which have a stormwater point of contact on them. Some Permittees also have these materials in other languages to reach their populations for whom English is not a first language. Many Permittees have also placed these pollution prevention materials on their websites. Since citizens increasingly use the internet to search for information, this Permit goes further to require all Permittees to place information on watershed characteristics and stormwater pollution prevention materials on their websites.

Provision C.7.d. Public Outreach and Citizen Involvement Events. This Permit combines Public Outreach and Citizen Involvement. Permittees need informed citizens to influence positive stormwater pollution behavior. Therefore, Permittees need to continue communicating with a broach spectrum of citizens with stormwater pollution prevention information through long-established outreach mechanism such as staffing tables or booths at fairs, street fairs, and other community events. Permittees shall continue utilizing appropriate outreach materials, such as printed materials, newsletter/journal articles, and videos. Permittees shall also utilize existing community outreach events, such as the Bringing Back the Natives Garden Tour. Combining Citizen Involvement Events with Public Outreach in this Permit does not minimize the importance of Citizen Involvement in events such as creek cleanups and restorations. It is important to provide opportunities for citizens to actively practice being good stewards of our environment. The combined specified numbers of events for Public Outreach and Citizen Involvement in this Permit are, for the most part, slightly less than the combined specified numbers in the Previous Permit. However, many Permittees claimed credit for both public outreach and citizen involvement for a number of events each year. In addition, this Permit has new requirements for each Permittee to have and maintain information on stormwater issues, watershed characteristics, and stormwater pollution prevention alternatives on its website and to advertise this website. It is anticipated that this website will provide the needed stormwater pollution prevention information to citizens more readily.

Provision C.7.e. Watershed Stewardship Collaborative Efforts. Watershed and Creek groups are comprised of active citizens, but they often need support from the local jurisdiction and certainly need to coordinate actions with Permittees such as flood districts and cities.

Provision C.7.f. School-Age Children Outreach. Outreach to school children has proven to be a particularly successful program with an enthusiastic audience who are efficient to reach. School children also take the message home to their parents, neighbors, and friends. In addition, they are the next generation of decision-makers and consumers.

Provision C.7.g. Outreach to Municipal Officials. It is important for Permittee staff to periodically inform Municipal Officials of the permit requirements and also future planning and resource needs driven by the permit and stormwater regulations.

C.8. Water Quality Monitoring

Legal Authority

Broad Legal Authority: CWA § 308; Federal NPDES regulations 40 CFR §§122.26(d)(2), 122.41(h), (j)-(l), 122.42(c), 122.44(i), and 122.48.

Specific Legal Authority: Permittees must conduct a comprehensive monitoring program and submit reports as required under Federal NPDES regulations cited above. CWC Section 13383 further authorizes the Regional Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements.

Fact Sheet Findings in Support of Provision C.8

C.8-1 In response to questions regarding the type of WQBELs that are most appropriate for NPDES stormwater permits, and because of the nature of stormwater discharges, U.S. EPA established the following approach to stormwater monitoring:

Each storm water permit should include a coordinated and cost-effective monitoring program to gather necessary information to determine the extent to which the permit provides for attainment of applicable water quality standards and to determine the appropriate conditions or limitations for subsequent permits. Such a monitoring program may include ambient monitoring, receiving water assessment, discharge monitoring (as needed), or a combination of monitoring procedures designed to gather necessary information.[46]

According to U.S. EPA, the benefits of stormwater runoff monitoring include, but are not limited to, the following:

- Providing a means for evaluating the environmental risk of stormwater discharges by identifying types and amounts of pollutants present;
- Determining the relative potential for stormwater discharges to contribute to water quality impacts or water quality standard violations;
- Identifying potential sources of pollutants; and
- Eliminating or controlling identified sources more specifically through permit conditions.[47]

C.8-2 Provision C.8 requires Permittees to conduct water quality monitoring, including ambient monitoring and monitoring of receiving waters, in accordance with 40 CFR 122.44(i) and 122.48. One purpose of water quality monitoring is to demonstrate the effectiveness of the Permittees' stormwater management actions pursuant to this Permit and, accordingly, demonstrate

[46] U.S. EPA. 1996. Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits. Sept. 1, 1996. http://www.epa.gov/npdes/pubs/swpol.pdf

[47] U.S. EPA. 1992. NPDES Storm Water Sampling Guidance Document. EPA/833-B-92-001.

compliance with the conditions of the Permit. Other water quality monitoring objectives under this Permit include:

- Assess the chemical, physical, and biological impacts of urban runoff on receiving waters;
- Characterize stormwater discharges;
- Assess compliance with Total Maximum Daily Loads (TMDLs) and Wasteload Allocations (WLAs) in impaired waterbodies;
- Assess progress toward reducing receiving water concentrations of impairing pollutants;
- Assess compliance with numeric and narrative water quality objectives and standards;
- Identify sources of pollutants;
- Assess stream channel function and condition, as related to urban stormwater discharges;
- Assess the overall health and evaluate long-term trends in receiving water quality; and
- Measure and improve the effectiveness of the Permittees' urban runoff control programs and the Permittees' implemented BMPs.

C.8-3 Monitoring programs are an essential element in the improvement of urban runoff management efforts. Data collected from monitoring programs can be assessed to determine the effectiveness of management programs and practices, which is vital for the success of the iterative approach, also called the "continuous improvement" approach, used to meet the Maximum Extent Practicable (MEP) standard where applicable. When water quality data indicate that water quality standards or objectives are not being met, particular pollutants, sources, and drainage areas can be identified and targeted for urban runoff management efforts. The iterative process in Provision C.1, Water Quality Standards Exceedances, could potentially be triggered by monitoring results. Ultimately, the results of the monitoring program must be used to focus actions to reduce pollutant loadings to comply with applicable WLAs, and protect and enhance the beneficial uses of the receiving waters in the Permittees' jurisdictions and the San Francisco Bay.

C.8-4 Under the CWA, NPDES permits must contain conditions that require both monitoring and reporting of monitoring results to ensure compliance. (See 33 U.S.C. § 1342(a)(2); 40 C.F.R. § 122.44(i)(1)-(2).) The regulations provide, in pertinent part:

> *In addition to the conditions established under §122.43(a), each NPDES permit shall include conditions meeting the following requirements when applicable.*
>
> *(i) Monitoring requirements. In addition to § 122.48, the following monitoring requirements:*
>
> *(1) To assure compliance with permit limitations, requirements to monitor:*

> *(i) The mass (or other measurement specified in the permit) for each pollutant limited in the permit;*
>
> *(ii) The volume of effluent discharged from each outfall;*
>
> *(iii) Other measurements as appropriate including pollutants in internal waste streams under § 122.45(i); pollutants in intake water for net limitations under § 122.45(f); frequency, rate of discharge, etc., for noncontinuous discharges under § 122.45(e); pollutants subject to notification requirements under § 122.42(a); and pollutants in sewage sludge or other monitoring as specified in 40 CFR part 503; or as determined to be necessary on a case-by-case basis pursuant to section 405(d)(4) of the CWA.*
>
> *(iv) According to sufficiently sensitive test procedures (i.e., methods) approved under 40 CFR part 136 for the analysis of pollutants or pollutant parameters or required under 40 CFR chapter 1, subchapter N or O. . . .*
>
> *(2) Except as provided in paragraphs (i)(4) and (i)(5) of this section, requirements to report monitoring results shall be established on a case-by-case basis with a frequency dependent on the nature and effect of the discharge, but in no case less than once a year. . . .*
>
> *40 C.F.R. § 122.44(i)(1)-(2). This section allows "for monitoring other than mass or volume, namely some 'other measurement specified in the permit [ ] for each pollutant limited in the permit.'" (NRDC v. U.S.EPA, No. 13-1745, 2015 WL 5780393 at *20 (2nd Cir. Oct. 5, 2015).) The regulations at 40 C.F.R. § 122.48 state that all permits specify the "[r]equired monitoring including type, intervals, and frequency sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring."*

Consistent with the federal regulations, water quality monitoring requirements in Provision C.8 require specific monitoring that will yield data that is both representative of the monitored activity and necessary to assure compliance with the requirements of the Permit, as described below.

C.8 requires monitoring[48]:

> *(1) At or near outfalls during storm events to obtain flow-weighted concentrations (mass) of pollutants of concern. Flow-weighted monitoring is required to assess progress on attaining TMDLs, including assuring compliance with the required load reductions in the permit (C.8.f. Pollution of Concern Monitoring). This monitoring supports estimates of MS4 pollutant loads to receiving waters and requires data collection to support planning for control actions. The latter includes monitoring effectiveness of control measures and identifying pollutant source areas; and*

[48] Provisions C.2-C.4, C.6, C8, C.10, C.13-C.16 contain additional monitoring and reporting requirements to assure compliance with the requirements therein.

(2) In receiving waters during wet and dry weather to assess the physical, chemical and biological impacts of MS4 discharges to urban streams (C.8.d. Creek Status Monitoring).

Creek Status Monitoring requires receiving water monitoring of the types, frequencies and intervals sufficient to yield information on the physical, chemical and biological status of those water bodies. Receiving water monitoring is specified here in lieu of outfall monitoring for the following reasons. First, there are no end-of-pipe limits in the permit to measure. Instead, the permit requires, for example, PCB load reductions; outfall monitoring would not allow the Board to assess whether the PCB limits are met. Second, there are hundreds if not thousands of outfalls in the Permittees' jurisdictions and it is impractical to monitor every single outfall due to both cost and safety concerns. Monitoring a subset of outfalls would provide information about MS4 discharges at those specific locations at only one limited point in time, which leads to the third point that outfall monitoring is time- and spatially limited. In contrast, the required receiving water monitoring integrates the physical, biological and chemical effects to the water body of all MS4 discharges from multiple outfalls over multiple storms (i.e., time and space), yielding more useful data than outfall monitoring to determine compliance with the permit. Receiving water monitoring is done in a probabilistic or rotating basis, depending on the parameter, again yielding more useful data than fixed-location monitoring. Also, both dry weather and storm flows are addressed in receiving water monitoring, whereas outfall monitoring is normally conducted only during storm events. Dry weather discharges can constitute a significant portion of annual pollutant loadings from storm systems in urban areas (NRC 2008).

To provide an example of how receiving water monitoring better captures permit compliance, consider an illicit discharge of chloramine from a swimming pool to an MS4. Both outfall and receiving water monitoring could detect the discharge. However, outfall monitoring would need to be done at the exact location and time of an illicit discharge otherwise it would go undetected, because the discharge would have moved through the outfall and into receiving waters. In contrast, receiving water monitoring could detect chloramine for a longer period of time (depending on pH, organic carbon and temperature) from upstream outfalls to the point where dilution prevents detection. Chloramine can be fairly stable and could be detected in urban waters in summer months, when outfall monitoring is generally not conducted. Receiving water monitoring, which is required in both dry and wet weather, can and has detected chlorine (a break-down product of chloramine), leading to efforts to correct the illicit discharge problem.

Receiving water monitoring as a means to evaluate compliance with permit conditions is supported by the National Research Council (NRC). In *Urban Stormwater Management in the United States*, NRC states that the quality of stormwater from urbanized areas has been well-characterized.[49] Continuing

[49] National Research Council. 2008. Urban Stormwater Management in the United States.

MS4 end-of-pipe monitoring produces data of limited usefulness because of a variety of shortcomings (as detailed in the report). The NRC strongly recommends[50] that MS4 programs modify their evaluation metrics and methods to include biological and physical monitoring and an increased emphasis on watershed scale analyses to ascertain what is actually going on in receiving waters, much like what is required in the permit. Further, NRC finds that biological assessments (as required in the Permit) respond to the range of non-chemical stressors identified as being important in urban waterways including habitat degradation, hydrological alterations, and sediment and siltation impacts, as well as to the influence of nutrients and other chemical stressors where chemical criteria do not exist or where their effects are difficult to measure directly (e.g., episodic stressors).

U.S. EPA Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits notes that:

> …storm water monitoring can be conducted for two basic reasons: 1) to identify if problems are present, either in the receiving water or in the discharge, and to characterize the cause(s) of such problems; and 2) to assess the effectiveness of storm water controls in reducing contaminants and making improvements in water quality.

Section C.8 of this permit satisfies these two objectives by requiring monitoring that will provide Permittees with sufficient data to pinpoint sources of pollutants and assess the effectiveness of efforts to reduce pollutants, both at the source and in receiving waters.

C.8-5 The Water Quality Monitoring Provision is intended to provide answers to fundamental management questions, outlined below. Monitoring is intended to progress as iterative steps toward ensuring that the Permittees' can fully answer, through progressive monitoring actions, management questions that include the following:

- Are conditions in receiving waters protective, or likely to be protective, of beneficial uses?
- What is the extent and magnitude of the current or potential receiving water problems?
- What is the relative urban runoff contribution to the receiving water problem(s)?
- What are the sources of urban runoff that contribute to receiving water problem(s)?
- Are conditions in receiving waters getting better or worse?

C.8-6 On April 15, 1992, the Water Board adopted Resolution No. 92-043 directing the Executive Officer to implement the Regional Monitoring Program for San Francisco Bay. Subsequent to a public hearing and various meetings, Water

[50] U.S. EPA has endorsed the NRC's recommendation. (See, e.g., EPA's District of Columbia MS4 Permit No. DC0000221 Fact Sheet, 2011.)

Board staff requested major permit holders in the Region, under authority of CWC section 13267, to report on the water quality of the Estuary. These permit holders, including the Permittees, responded to this request by participating in a collaborative effort through the San Francisco Estuary Institute. This effort has come to be known as the San Francisco Estuary Regional Monitoring Program (RMP). The RMP involves collection and analysis of data on pollutants and toxicity in water, sediment and biota of the Estuary. Because the RMP monitors waters in each Permittee's jurisdiction and gathers data on the pollutants discussed in this Permit, the Permittees are required to continue to report on the water quality of the Estuary, as presently required. Compliance with the requirement through participation in the RMP is considered to be adequate compliance.

C.8-7 The Surface Water Ambient Monitoring Program (SWAMP) is a statewide monitoring effort, administered by the State Water Board, designed to assess the conditions of surface waters throughout California. One purpose of SWAMP is to integrate existing water quality monitoring activities of the State Water Board and the Regional Water Boards, and to coordinate with other monitoring programs. Provision C.8 contains a framework, referred to as a regional monitoring collaborative, within which Permittees can elect to work cooperatively with SWAMP to maximize the value and utility of both the Permittees' and SWAMP's monitoring resources. In working cooperatively with SWAMP, Permittees can develop a monitoring program that evaluates waters in its jurisdiction and gathers data on each of the pollutants of concern discussed in this Permit.

C.8-8 In 1998, BASMAA published *Support Document for Development of the Regional Stormwater Monitoring Strategy*,[51] a document describing a possible strategy for coordinating the monitoring activities of BASMAA member agencies. The document states:

> BASMAA's member agencies are connected not only by geography but also by an overlapping set of environmental issues and processes and a common regulatory structure. It is only natural that the evolution of their individual stormwater management programs has led toward increasing amounts of information sharing, cooperation, and coordination.

In the Previous Permit, Permittees were given the option to implement this same concept by forming a regional monitoring collaborative, which they did. In conducting some of the monitoring required in this Provision, the Regional Monitoring Collaborative (RMC) provides efficiencies and economies of scale by performing certain tasks (e.g., planning, contracting, data quality assurance, data management and analysis, and reporting) at the regional level on behalf of

[51] EcoAnalysis, Inc. & Michael Drennan Assoc., Inc., *Support Document for Development of the Regional Stormwater Monitoring Strategy*, prepared for Bay Area Stormwater Management Agencies Association, March 2, 1998.

all Permittees. Further benefits are expected as more monitoring requirements are fulfilled through the RMC.

C.8-9 This Permit includes monitoring requirements to verify compliance with adopted TMDL WLAs and to provide data needed for TMDL development and/or implementation. This Permit incorporates the TMDLs' WLAs adopted by the Water Board as required under CWA section 303(d).

C.8-10 SB1070 (California Legislative year 2005/2006) found that there is no single place where the public can go to get a look at the health of local water bodies. SB1070 also states that all information available to agencies shall be made readily available to the public via the Internet. This Permit requires water quality data to be submitted in a specified format and uploaded to a centralized Internet site so that the public has ready access to the data.

Specific Provision C.8 Requirements

Each of the components of the monitoring provision is necessary to meet the objectives and answer the questions listed in the findings above. Justifications for each monitoring component are discussed below.

Provision C.8.a. Compliance Options. Provision C.8.a. provides Permittees options for obtaining monitoring data through various organizational structures, including use of data obtained by other parties. This is intended to achieve the following:

- Promote cost savings through economies of scale and eliminate redundant monitoring by various entities;
- Promote consistency in monitoring methods and data quality; and
- Simplify reporting.

In this Permit, all the Stormwater Countywide Programs are encouraged to work collaboratively to conduct all or most of the required monitoring and reporting on a region-wide basis. For each monitoring component that is conducted collaboratively, one report would be prepared on behalf of all contributing Permittees; separate reports would not be required from each Program. Cost savings could result also from reduced contract and oversight hours, fewer quality assurance/quality control samples, shared sampling labor costs, and laboratory efficiencies.

Provision C.8.b. Monitoring Protocols and Data Quality. Clean Water Act regulations (40 CFR 122.41(j)(1)) require that data submitted pursuant to a NPDES permit meet certain quality standards. To achieve this, and to obtain data of known quality that can be compared to data collected in other California urban creeks, the permit requires monitoring data be collected and analyzed in accordance with the SWAMP Quality Assurance Project Plan and Standard Operating Procedures or U.S. EPA methods. The BASMAA Regional Monitoring Coalition's Creek Status Monitoring Program Quality Assurance Project Plan (January 2014) and Standard Operating Procedures (January 2014) have been deemed to be SWAMP comparable. These two BASMAA documents may be updated to reflect the changing state-of-the-science with Executive Officer's approval.

Provision C.8.c. San Francisco Estuary Receiving Water Monitoring. The San Francisco Estuary is the ultimate receiving water for most of the urban runoff in this region. For this reason and because of the high value of its beneficial uses, Provision C.8.c requires focused monitoring on the Estuary to continue. Since the mid-1990s, Permittees have caused this monitoring to be conducted by contributing financially and with technical expertise, to the RMP. Provision C.8.c requires such monitoring to continue.

Provisions C.8.d. Creek Status Monitoring. Based on the stated goals of the CWA, Creek Status Monitoring employs a three-pronged approach to monitoring water quality which includes chemical-specific monitoring, toxicity testing, and bioassessments (U.S. EPA 1991a). Each of the three elements has distinct advantages and all three work together to ensure that the physical, chemical and biological integrity of our waters are protected. Creek Status Monitoring includes probabilistic and targeted sampling of urban creeks and serves as a surrogate to monitoring the discharge from all major outfalls. Sampling the Permittees' numerous outfalls is impractical due to costs and safety factors and the resulting data would not provide commensurately better information. By sampling the sediment, biota and water column in urban creeks, the Permittees can determine where water quality problems are occurring in the creeks, then work to identify which outfalls and land uses are causing or contributing to the problem. In short, Creek Status Monitoring is needed and useful for identifying water quality problems and assessing the health of streams; it is the first step in identifying sources of pollutants and an important component in evaluating the effectiveness of an urban runoff management program. Requirements for number, frequency and general locations of samples are established to sufficiently indicate whether water quality is supportive, or likely to be supportive, of beneficial uses and whether water quality objectives are being met, at a minimum.

Provision C.8.d.i. Biological Assessment including Nutrients and General Water Quality Parameters. Biological Assessment is needed to provide site-specific information about the health and diversity of freshwater benthic communities within a specific reach of a creek, using standard procedures developed and/or used by the SWAMP. It consists of collecting samples of benthic communities and conducting a taxonomic identification to measure community abundance and diversity. Urban creek sampling can be directly compared to a non-urban or reference creek to assess benthic community health. Biological indicators, including the California Stream Condition Index (CSCI), are developed using reference streams, so the calculation of a CSCI score at an urban site already takes comparison to reference conditions into account. This monitoring can also provide information on cumulative pollutant exposure/impacts because pollutant impacts to the benthic community accumulate and occur over time. Nutrient monitoring is necessary because recent monitoring data indicate nutrients, which can increase algal growth and decrease dissolved oxygen concentrations, are present in significant concentrations in Bay Area creeks. The sampling timeframe (generally between April 15 and June 30) is when invertebrates are developed enough to be captured in the sampling equipment but not developed enough to have emerged (flown off), and thus is the timeframe in which necessary information concerning biological integrity can be obtained.

Provision C.8.d.ii. Chlorine monitoring is needed to detect a release of potable water or other chlorinated water sources, which are toxic to aquatic life.

Provision C.8.d.iii. Temperature monitoring is needed to determine if conditions in creeks to which urban runoff is discharged are supportive of cold-water and warm-water beneficial uses, as appropriate.

Provision C.8.d.iv. Continuous monitoring of dissolved oxygen, temperature, and pH is required because these parameters are fundamental to supporting aquatic life beneficial uses and they impact the effect of pollutants in freshwater (e.g., ammonia toxicity is dependent on pH and temperature).

Provision C.8.d.v. Pathogen Indicator monitoring is needed to detect pathogens in waterbodies that could be sources of impairment to recreational uses at or near the sampling location.

Provision C.8.d. (All Parameters) **Monitoring Frequency, Duration, and Location.** Creek Status Monitoring continues to be an annual requirement for the Permittees, except for two much smaller Permittees, Fairfield-Suisun and Vallejo. For each of the Creek Status Monitoring parameters, the number or frequency of samples required is based on the relative population within the countywide stormwater program. Costs are minimized while data necessary for successful stormwater management are obtained. Monitoring durations are based on the amount of data needed to understand the potential effects related to each Creek Status Monitoring parameter. Monitoring frequencies and durations are specified for each parameter.

Creek Status Monitoring locations are to be selected on a probabilistic (random) or targeted basis, depending on the parameter, in similar fashion to SWAMP. If correctly sited, sampling stations are expected to be very useful in answering the monitoring program's management questions and meeting its goals. For this reason, Provision C.8.d. requires sample locations to be based on surrounding land use, likelihood of urban runoff impacts, existing data gaps, and similar considerations. This will help maximize the utility of the sample locations, while also providing the Permittees with adequate flexibility to ultimately choose practical Creek Status Monitoring locations.

Provision C.8.e. Stressor/Source Identification (SSID) Projects are necessary to identify sources of pollutants; identify new or emerging pollutants; and improve stormwater management actions. When Creek Status Monitoring results indicate an exceedance of a water quality objective, a temperature or toxic effect threshold, or other "trigger," these results become candidates for SSID projects. The trigger provides a threshold for considering follow up, and Permittees select which results will be followed up on via a SSID project based on criteria such as magnitude of threshold exceedance; parameter (for a variety of parameters); and likelihood stormwater management action(s) could address the exceedance. A minimum number of SSID Projects is required, rather than a SSID for every monitoring result that exceeds a "trigger" threshold. Every trigger exceedance need not result in a SSID project because (1) triggers are not water quality objectives in most cases and (2) this approach requires investigation of potential water quality issues without duplicating efforts.

Through SSID projects, Permittees must identify the source of the problem and take steps to reduce any pollutants discharged from or through their municipal storm sewer systems. This requirement conforms to the process, outlined in Provision C.1., of complying with the Discharge Prohibition and Receiving Water Limitations. The timeframes for initiating and completing follow-up actions acknowledge the realities of budgeting for these studies, some, but not all of which could require funding above the level available in a given fiscal year. If multiple "triggers" are identified through monitoring, Permittees must focus on the highest priority problems; a cap on the total number of source identification projects conducted within the Permit term is provided to cap Permittees' potential costs.

C.8.f. Pollutants of Concern[52] Monitoring. CWA section 303(d) TMDL requirements, as implemented under the CWC, require a monitoring plan designed to measure the effectiveness of the TMDL point and nonpoint source control measures and the progress the water body is making toward attaining water quality objectives. Such a plan necessarily includes collection of water quality data. Provision C.8.f. Pollutants of Concern (POC) monitoring is intended to assess inputs of Pollutants of Concern to the Bay from local tributaries and urban runoff; provide information to support implementation of TMDLs and other pollutant control strategies; assess progress toward achieving wasteload allocations (WLAs) for TMDLs; and help resolve uncertainties in loading estimates and impairments associated with these pollutants.

In particular, POC monitoring addresses five priority POC management information needs:

1) Source Identification - identifying which sources or watershed source areas provide the greatest opportunities for reductions of POCs in urban stormwater runoff;

2) Contributions to Bay Impairment - identifying which watershed source areas contribute most to the impairment of San Francisco Bay beneficial uses (due to source intensity and sensitivity of discharge location);

3) Management Action Effectiveness - providing support for planning future management actions or evaluating the effectiveness or impacts of existing management actions;

4) Loads and Status - providing information on POC loads, concentrations, and presence in local tributaries or urban stormwater discharges; and

5) Trends - evaluating trends in POC loading to the Bay and POC concentrations in urban stormwater discharges or local tributaries over time.

The Permit specifies monitoring methods that can be used to address these information needs and which information needs apply to each pollutant of concern. The Permit provides flexibility in the number of samples, or level of effort, but requires minimums to be met annually and over the Permit term. The level of effort (expressed as required number of samples collected and analyzed) is similar to the level of sampling and analysis effort for pollutants of concern monitoring required in the Previous Permit term.

[52] See sections C.9, C.11, C.12, and C.13 of this Fact Sheet for more information on Pollutants of Concern.

The approach for POC monitoring does not specify specific monitoring locations or monitoring frequencies at those specific locations. Rather, the Permit requires that monitoring be intelligently and flexibly directed toward answering the management information needs (that apply to a given pollutant), and this flexibility allows the monitoring strategy to be adapted and improved based on information obtained from monitoring conducted early in the permit term. The flexibility also allows the Permittees to continue collecting useful information even during drought years in which conditions limit some types of data collection (e.g., storm even sampling) but not others (e.g., collection of bed sediment). As is true of Creek Status Monitoring, it is impractical to sample all of the urban runoff outfalls in the region, and these outfall data (obtained at great expense) would not provide commensurately better information relative to the management information needs for pollutants of concern. By strategically sampling the sediment and water column in urban creeks and conveyances, the Permittees can better address the five information needs stated above.

To some extent, POC monitoring builds on what we already know about pollutants in creeks (also referred to as tributaries to the Bay) and leads to more effective actions to control those pollutants. For example, we know that pesticide-related toxicity has been widespread and results from approved pesticide uses. POC monitoring for toxicity therefore is tailored to provide information on which pesticides are currently a concern to water quality; a limited number of toxicity samples provides adequate information. Other requirements for number, frequency and general locations of samples are similarly tailored to information needs.

Provisions C.8.g. Pesticides and Toxicity Monitoring. Toxicity testing provides a tool for assessing toxic effects (acute and chronic) of all the chemicals in samples of stormwater, receiving waters or sediments and allows the cumulative effect of the pollutants present in the sample to be evaluated, rather than the toxic responses to individual chemicals. Toxicity in water and on sediment also are monitored in order to determine whether the numeric targets of the Diazinon and Pesticide-Related Toxicity in Urban Creeks TMDL are being achieved, and to help provide evidence on whether pesticide-related toxicity is decreasing in urban creek waters.

This subprovision combines all the pesticide and toxicity into one place, where previous permits had pesticide and toxicity monitoring in both Creek Status and Pollutants of Concern Monitoring subprovisions. This format is intended to provide for more thoughtful dry weather and wet weather sampling designs that may provide more meaningful data for the region and potentially for statewide studies. Since the Urban Creeks TMDL was adopted by the Water Board in 2005, it has become more apparent that pesticide related toxicity water quality problems are similar in urban waterways across the State. At this time, efforts have begun to develop a statewide coordinated pesticides and pesticide-related toxicity monitoring program. In addition, pesticide-related water quality issues are subject to change as different pesticide products gain market share and increase in urban usage. For these reasons, Permittees may request the Executive Officer modify, reduce or eliminate the requirements of this subprovision during the permit term, provided the resultant change, viewed in context of the statewide program, would result in overall improvement of pesticide monitoring data collection.

This Permit describes type, interval and frequency of pesticides and toxicity monitoring sufficient to yield data which are representative of both dry weather and wet weather urban runoff. Required analytes include toxicity and pesticides that are being found at or near concentrations that cause chronic or acute effects to aquatic organisms. Required test methods include the relatively recent Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/821/R-02/013, 2002; Table IA, 40 CFR Part 136) for chronic toxicity. The test species are selected as the most sensitive species to pollutants currently known or suspected to be present in stormwater discharges. All required methods and test species are consistent with those used by SWAMP as well as those required in other California MS4 permits, including the statewide Caltrans permit.

The non-pesticide pollutants arsenic, cadmium, chromium, copper, lead, nickel, and zinc are included in this subprovision in order to facilitate the synoptic collection of these pollutants in sediment with toxicity in sediment during the dry season.

C.8.h. Reporting. CWC section 13383 provides authority for the Water Board to require technical water quality reports. Provision C.8.h. requires Permittees to submit electronic and comprehensive reports on their water quality monitoring activities to (1) determine compliance with monitoring requirements; (2) provide information useful in evaluating compliance with all Permit requirements; (3) enhance public awareness of the water quality in local streams and the Bay; and (4) standardize reporting to better facilitate analyses of the data, including for the CWA section 303(d) listing process.

C.9. – C.14. Pollutants of Concern including Total Maximum Daily Loads

Provisions C.9 through C.14 pertain to pollutants of concern, including those for which TMDLs have been adopted.

Legal Authority

The following legal authority applies to provisions C.9 through C.14:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13383, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: The TMDL-based requirements for pesticides, mercury, PCBs, and bacteria have been imposed in accordance with 40 Code of Federal Regulations section 122.44(d)(1)(vii)(B). Pursuant to 40 Code of Federal Regulations section 122.44(d)(1)(vii)(B), the effluent limitations for NPDES permits must be consistent with the assumptions and requirements of any available Waste Load Allocation (WLA) for the discharge prepared by the state and approved by U.S. EPA, or established by U.S. EPA. In addition, Water Code section 13263, subdivision (a), requires that waste discharge requirements implement any relevant water quality control plans (basin plans), including TMDL requirements that have been incorporated into the basin plans. In addition, under CWA section 402(p)(3)(B)(iii), MS4 discharges "shall require controls to reduce the discharge of pollutants to the maximum extent practicable . . . and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." (33 U.S.C. § 1342(p)(3)(B)(iii).) Under this provision, the Water Board may include requirements for reducing pollutants in stormwater discharges as necessary for compliance with water quality standards. (*See Defenders of Wildlife v. Browner* (9th Cir. 1999) 191 F.3d 1159, 1166.) This includes requirements to meet TMDLs since TMDL targets are an interpretation of water quality standards.

The Water Board may impose WQBELs effluent limitations that are BMPs or numeric effluent limitations. (33 U.S.C. §1342(p)(3)(B)(iii); 40 C.F.R. §122.44(k)(2)&(3) and § 122.44(d)(1)(vii)(B).) This is consistent with U.S. EPA's November 26, 2014, "Revision to the November 22, 2002, Memorandum 'Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs'" (2014 U.S. EPA Memo.) This memorandum, while not binding authority, states "[w]here the TMDL includes WLAs for stormwater sources that provide numeric pollutant loads, the WLA should, where feasible, be translated into effective, measurable WQBELs that will achieve this objective. This could take the form of a numeric limit, or of a measurable, objective BMP-based limit that is projected to achieve the WLA." The 2014 U.S. EPA Memo further acknowledges that the permitting authority should consider the schedules in the TMDL as it decides whether and how to establish enforceable interim requirement and interim dates in the Permit. The interim deadlines in the Provisions are consistent with and in furtherance of the deadlines in the TMDLs.

For trash, the Water Board is authorized to impose effluent limitations under 40 CFR 122.44(d)(1)(i), which requires NPDES permits to include limitations to "control all pollutants or pollutant parameters (either conventional, nonconventional, or toxic pollutants) which are or may be discharged at a level which will cause, have reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." Trash is being discharged at levels that cause an excursion above the water quality objectives for floating, settleable and suspended materials. For copper, the Permit requires best management practices and copper control measures to prevent urban runoff discharges from causing or contributing to exceedances of copper site-specific water quality objectives for the Bay, consistent with the Basin Plan. Water Code section 13263 requires that waste discharge requirements implement the Basin Plan.

Basin Plan Requirements: Section 4.8 of the Region's Water Quality Control Plan (Basin Plan) states that NPDES stormwater permits issued to municipalities will include requirements to prevent or reduce discharges of pollutants that cause or contribute to violations of water quality objectives. The Water Board has been taking a phased approach of first requiring technically and economically feasible controls to reduce pollutant discharges to the maximum extent practicable. Where this does not result in attainment of water quality objectives, the Basin Plan states the Water Board will require implementation of additional control measures to meet water quality objectives. The Basin Plan also contains urban stormwater TMDL implementation requirements at sections 7.1.1, 7.2.2, 7.7.1, 7.2.3, and 7.4.1 for pesticide-related toxicity, mercury, PCBs, and bacteria. The Basin Plan also requires urban stormwater requirements for copper in section 7.2.1. Finally, the Basin Plan Table 4-1 includes Prohibition 7, which prohibits the discharge of "rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas."

General Strategy for Sediment-Bound Pollutants (Mercury and PCBs)

The control measures for mercury are intended to implement the urban runoff requirements stemming from TMDLs for these pollutants. The control measures required for PCBs are intended to implement those that are consistent with control measures in the PCBs TMDL implementation plan. The urban runoff management requirements in the PCBs TMDL implementation plan call for permit-term requirements based on an implementation of controls to reduce PCBs, and that is the intended approach of the required provisions for all pollutants of concern. Many of the control actions addressing PCBs and mercury will result in reductions of a host of sediment-bound pollutants, including legacy pesticides, PBDEs, and others. The strategy for these pollutants is to use PCBs control to guide decisions concerning where to focus effort, but implementation of the control efforts would take into account the benefits for controlling other pollutants of concern. The POC strategy also includes a phased approach that provides for pilot scale testing (in the 2009 issuance of this permit) and for identifying areas with POC sources. The overall strategy for addressing sediment bound POCs includes the following modes:

1. Pilot-testing in a few specific locations.

2. Focused implementation in areas where benefits are most likely to accrue.
3. Full-scale implementation throughout the region.
4. Other: This may refer to experimental control measures, Research and Development, desktop analysis, laboratory studies, and/or literature review.

The logic of such categorization is that, as actions are tested and confidence is gained regarding the control measure's effectiveness, the control measure may be implemented with a greater scope. For example, an untested control measure for which the effectiveness is uncertain may be implemented as a pilot project in a few locations during a permit term. If benefits result, and the action is deemed effective, it will be implemented in subsequent permit terms in a focused fashion in more locations or perhaps fully implemented throughout the Region, depending upon the nature of the measure. Conversely, the benefits of other control measures may be well known, and these control measures should be implemented in all applicable locations and/or situations. By conducting actions in this way and gathering additional information about effectiveness and cost, we will advance our understanding and be able to perform an updated assessment of the suite of actions.

During the Previous Permit term, a large part of the effort was focused on gathering necessary information about control measure effectiveness. In effect, most of the control measures were implemented at the pilot scale. In this Permit term, the emphasis will shift toward focused and perhaps full-scale implementation of the most effective control measures, and progress will be measured through accounting for specific load reductions. In subsequent permit terms control measures will be implemented on the basis of what we learn in this term, and we will, thus, achieve iterative refinement and improvement through time.

Background on Specific Provisions: Pursuant to CWA§ 402(p)(3)(B)(ii)-(iii) and 40 CFR § 122.44(d)(1)(vii)(B) , Provisions C.9 through C.14 contain technology-based requirements to control pollutants to the MEP, such other provisions the Water Board has determined appropriate for the control of pollutants under CWA, water quality-based requirements consistent with the assumptions and requirements of any WLAs in the applicable TMDLs, and requirements to effectively prohibit non-stormwater discharges into storm sewers. Provision C.9 contains requirements to implement the TMDL for pesticide-related toxicity in urban creeks. Provision C.10 contains requirements to implement narrative water quality objectives related to trash in all receiving water. Provision C.11 contains requirements to implement the San Francisco Bay mercury TMDL WLAs and the TMDL WLAs for mercury in the Guadalupe River Watershed. Provision C.12 contains requirements to implement the San Francisco Bay PCBs TMDL WLAs. Provision C.13 contains requirements to implement the copper site-specific objectives for San Francisco Bay. Provision C.14 contains requirements to implement the TMDL WLAs for San Pedro Creek and Pacifica State Beach Bacteria.

C.9. Pesticides Toxicity Control

Fact Sheet Findings in Support of Provision C.9

C.9-1 This Permit implements the Basin Plan amendments adopted by the Water Board that establish a Water Quality Containment Strategy and TMDL for diazinon and pesticide-related toxicity for Bay Area urban creeks on November 16, 2005, and approved by the State Water Board on November 15, 2006. The Water Quality Containment Strategy requires urban runoff management agencies to minimize their own pesticide use, conduct outreach to others, lead monitoring efforts, and take actions related to pesticide regulatory programs. Control measures implemented by urban runoff management agencies and other entities (except construction and industrial sites) shall reduce pesticides in urban runoff.

C.9-2 The TMDL is allocated to all urban runoff, including urban runoff associated with MS4s, Caltrans facilities, and industrial, construction, and institutional sites. The allocations are expressed in terms of toxic units and diazinon concentrations.

C.9-3 This provision is consistent with 2014 U.S. EPA Memo[53] providing guidance on implementing TMDL WLAs in NPDES storm water permits. Specifically, this provision establishes clear actions to achieve pesticide load reductions as well as other requirements (see C.9.f) necessary to achieve receiving water limits. The timeline for achieving the TMDL is not a fixed date for the following reasons. Pesticide-related toxicity continues to occur because state and federal pesticide regulatory programs, as currently implemented, allow pesticides to be used in ways that cause or contribute to aquatic toxicity. The TMDL implementation plan recognizes that (1) Permittees must control their own use of pesticides, but Permittees are not solely responsible for attaining the allocations, because their authority to regulate others' pesticide use is constrained by federal and state law; and (2) because a realistic date for achieving allocations cannot be discerned given the current pesticide regulatory framework, reviewing the implementation strategy every five years, at permit reissuance, is the appropriate timeline.

Specific Provision C.9 Requirements

C.9 provisions implement the TMDL for Urban Creeks Pesticide Toxicity. All C.9 provisions are stated explicitly in the implementation plan for this TMDL. Permittees are encouraged to coordinate activities with the Urban Pesticide Committee and other agencies and organizations. The Urban Pesticides Committee has served as an information clearinghouse and as a forum for coordinating pesticide TMDL implementation. The list of urban-use pesticides of concern to water quality includes

[53] U.S. EPA. November 26, 2014. Revisions to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs"

pesticides for which local area monitoring data exceed or approach benchmarks and pesticides currently linked to toxicity in surface waters.

Provisions C.9.a through C.9.d are designed to insure that integrated pest management (IPM) is adopted and implemented as policy by all municipalities. IPM is a pest control strategy that uses an array of complementary methods: natural predators and parasites, pest-resistant varieties, cultural practices, biological controls, various physical techniques, and pesticides as a last resort. If implemented properly, it is an approach that can significantly reduce or eliminate the use of pesticides. The implementation of IPM will be assured through training of municipal employees and contractor requirements.

Provision C.9.e directs the municipalities to conduct outreach to consumers at point of purchase, to residents who contract for pest control, and to pest control professionals. Such targeted outreach is often intended to make the public and pest control professionals aware of the water quality impacts of current-use pesticides that are impacting or have potential to negatively impact urban creeks.

Provision C.9.f requires that municipalities (through cooperation or participation with BASMAA and CASQA track and participate in pesticide regulatory processes like the U.S. EPA pesticide evaluation and registration activities related to surface water quality, and the California Department of Pesticide Regulation pesticide evaluation activities. The goal of these efforts is to provide pertinent water quality data and encourage both the state and federal pesticide regulatory agencies to fully evaluate aquatic impacts and to mitigate for impacts to urban water bodies within the pesticide regulation or registration process. Accomplishing this goal would represent the most efficient and effective means to prevent pesticide-related water quality problems in the future.

Provision C.9.g requires Permittees to evaluate the effectiveness of their pesticide source control actions and is critical to the success of municipal efforts to control pesticide-related toxicity. Future permits must be based on an updated assessment of what is working and what is not. With every provision comes the responsibility to assess its effectiveness and report on these findings through the Permit. The particulars of assessment will depend on the nature of the control measure.

C.10. Trash Load Reduction

Legal Authority

The following legal authority applies to section C.10:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC sections 13383, 13377 and 13263, and Federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F), 40 CFR 122.26(d)(2)(iv) , and 40 CFR § 122.44(d)(1)(i).

Specific Legal Authority: Federal NPES regulations 40 CFR 122.26(d)(2)(i) requires "a demonstration that the [Permittee] can operate pursuant to legal authority established by statute, ordinance or series of contracts which authorizes or enables the [Permittee] at a minimum to . . . (B) Prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer; (C) Control through ordinance, order or similar means the discharge to a municipal separate storm sewer of spills, dumping or disposal of materials other than storm water . . . ."

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(A)(1) requires "a description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B) requires "shall be based on a description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(2) requires "a description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(3) requires "a description of procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water."

Federal NPDES regulations 40 CFR 122.26(d)(2)(iv)(B)(4) requires "a description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer."

Federal NPDES regulations 40 CFR § 122.44(d)(1)(i) requires limitations for pollutants which are or may be discharged at a level which has the reasonable potential to cause or contribute to an excursion above any water quality standard, including any narrative criteria for water quality.

San Francisco Bay Basin Plan contains these narrative water quality objectives applicable to trash: floating material (waters shall not contain floating material,

including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses); settleable material (waters shall not contain substances in concentrations that result in the deposition of material that cause nuisance or adversely affect beneficial uses); and suspended material (waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses). Trash is being discharged at levels that have the reasonable potential to cause or contribute to excursions of these narrative water quality objectives. There are currently 26 waterbodies in the Region impaired by trash on the Clean Water Act section 303(d) list and most are receiving waters of discharges from Permittees' municipal storm drain systems. In additional, all Permittees have identified trash hot spots in their receiving water in a July 2010 submittal required by the previous permit. NPDES permitting authorities have discretion to include requirements for reducing pollutants in storm water as necessary for compliance with water quality standards. (*Defenders of Wildlife v. Browner* (9th Cir. 1999) 191 F.3d 1159, 1166.) U.S. EPA recommends that for MS4 discharges with reasonable potential to cause or contribute to a water quality excursion, a permitting authority exercises its discretion to include clear, specific, and measurable requirements and, where feasible, numeric effluent limitations as necessary to meet water quality standards.[54] The permit contains such requirements to meet water quality standards.

The Basin Plan also contains includes Chapter 4 – Implementation, Table 4-1 Prohibitions, Prohibition 7, which prohibits the discharge of rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas. This prohibition was adopted by the Water Board in the 1975 Basin Plan, primarily to protect recreational uses such as boating.

In addition to the foregoing, it should be noted that the State Water Board on April 7, 2015, adopted amendments to the Ocean Plan and the Inland Surface Waters and Inland Bays and Estuaries Plans that establish a narrative water quality objective for trash; establish a prohibition on the discharge of trash; provide implementation requirements for permitted storm water and other dischargers; set a time schedule for compliance, and provide a framework for monitoring and reporting requirements (collectively, Trash Amendments). These Trash Amendments are subject to review by the Office of Administrative Law and U.S. EPA and are not yet effective. Nonetheless, the C.10 requirements of this Permit are consistent with the Trash Amendments.

[54] U.S. EPA, November 26, 2014, "Revisions to the November 22, 2002 Memorandum 'Establishing Total Maximum Daily Load Waste Allocations for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs.'"

Fact Sheet Findings in Support of Provision C.10

C.10-1 Trash is a pervasive problem near and in creeks and in San Francisco Bay. Controlling trash continues to be one of the priorities for this Permit reissuance, not only because of the trash discharge prohibition, but also because trash causes major impacts on our enjoyment of creeks and the Bay. There are also significant impacts on aquatic life and habitat in those waters, and eventually to the global ocean ecosystem, where plastic often floats; persists in the environment for hundreds of years - if not forever; concentrates organic toxins; and is ingested by aquatic life. There are also physical impacts, as aquatic species can become entangled and ensnared, and can ingest plastic that looks like prey, losing the ability to feed properly.

For the purposes of this provision, trash is defined to consist of litter and particles of litter. Manmade litter is defined in California Government Code section 68055.1 (g): *Litter* means all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the state, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling, or manufacturing.

C.10-2 Data collected by Water Board staff using the SWAMP Rapid Trash Assessment (RTA) Protocol,[55] over the 2003–2005 timeframe,[56] suggested that the approach to managing trash in waterbodies was not reducing the adverse impact on beneficial uses. The levels of trash in the waters of the San Francisco Bay Region were and are alarmingly high, considering the Basin Plan prohibits discharge of trash and that littering is illegal with potentially large fines. Even during dry weather conditions, a significant quantity of trash, particularly plastic, is making its way into waters and being transported downstream to San Francisco Bay and the Pacific Ocean. On the basis of 85 surveys conducted at 26 sites throughout the Bay Area, staff has found an average of 2.93 pieces of trash for every foot of stream. All the trash was removed when it was surveyed, indicating high return rates of trash over the 2003–2005 study period. There did not appear to be one county within the Region with significantly higher trash in waters relative to other counties—the highest wet weather deposition rates were found in western Contra Costa County, and the highest dry weather deposition was found in Sonoma County. Results of the trash in waterbodies assessment work by staff show that rather than adjacent neighborhoods polluting the sites at the bottom of the watershed, these areas, which tend to have lower property values, are subject to trash washing off with urban stormwater runoff cumulatively from the entire watershed.

C.10-3 A number of key conclusions can be made on the basis of the trash measurement in streams:

[55] SWAMP Rapid Trash Assessment Protocol, Version 8
[56] SWAMP S.F. Bay Region Trash Report, January 23, 2007

- Lower watershed sites have higher densities of trash.
- All watersheds studied in the San Francisco Bay Region have high levels of trash.
- There are trash source hotspots (usually associated with parks, schools, or poorly-kept commercial facilities located near creek channels) that appear to contribute a significant portion of the trash deposition at lower watershed sites.
- Homeless encampments and creekside litter from a variety of sources is a significant source of trash directly dumped and placed in the riparian zone where it can be swept into receiving waters by storm flows.
- Dry season deposition of trash, associated with wind and dry season runoff, contributes measurable levels of trash to downstream locations.
- The majority of trash is plastic at lower watershed sites where trash accumulates in the wet season. This suggests that urban runoff is a major source of floatable plastic found in the ocean and on beaches as marine debris. While much of the initial trash deposited and washed into receiving waters is paper, the plastic trash, both floatable and non-floatable is the most persistent trash that survives, significantly impacting the Bay and Ocean.
- Parks that have more evident management of trash by city staff and local volunteers, including cleanup within the creek channel, have measurably less trash pieces and higher RTA scores.

C.10-4 The ubiquitous, unacceptable levels of trash in waters of the San Francisco Bay Region warrant a comprehensive and progressive program of education, warning, and enforcement, and certain areas warrant consideration of structural controls and treatment.

C.10-5 Trash in urban waterways of coastal areas can become marine debris, known to harm fish and wildlife and cause adverse economic impacts.[57] Trash is a regulated water pollutant that has many characteristics of concern to water quality. It accumulates in streams, rivers, bays, and ocean beaches throughout the San Francisco Bay Region, particularly in urban areas.

C.10-6 Trash adversely affects numerous beneficial uses of waters, particularly recreation and aquatic habitat. Not all trash and debris delivered to streams are of equal concern with regards to water quality. Besides the obvious negative aesthetic effects, most of the harm of trash in surface waters is imparted to wildlife in the form of entanglement or ingestion.[58,59] Some elements of trash exhibit significant threats to human health, such as discarded medical waste,

[57] Moore, S.L., and M.J. Allen. 2000. Distribution of anthropogenic and natural debris on the mainland shelf of the Southern California Bight. *Mar. Poll. Bull*. 40:83-88.

[58] Laist, D. W. and M. Liffmann. 2000. *Impacts of marine debris: research and management needs*. Issue papers of the International Marine Debris Conference, Aug. 6-11, 2000. Honolulu, HI, pp. 16–29.

[59] McCauley, S.J. and K.A. Bjorndahl. 1998. Conservation implications of dietary dilution from debris ingestion: sublethal effects in post-hatchling loggerhead sea turtles. *Conserv. Biol.* 13(4):925-929.

human or pet waste, and broken glass.[60] Also, some household and industrial wastes can contain toxic batteries, pesticide containers, and fluorescent light bulbs that contain mercury. Large trash items, such as discarded appliances, can present physical barriers to natural stream flow, causing physical impacts such as bank erosion. From a management perspective, the persistent accumulation of trash in a waterbody is of particular concern, and signifies a priority for prevention of trash discharges. Also of concern are trash hotspots where illegal dumping, littering, and/or accumulation of trash occur.

C.10-7 The Water Board, at its February 11, 2009, hearing, adopted a resolution proposing that 26 waterbodies in the region be added to the 303(d) list for the pollutant trash. The adopted Resolution and supporting documents are contained in Attachment 10.1 – 303(d) Trash Resolution and Staff Report Feb 2009.

C.10-8 The trash control strategies, monitoring requirements, and mandatory deadlines for trash reductions meet the "Maximum Extent Practicable" (MEP) standard contemplated by the CWA and include such other provisions as the Board determines appropriate for control to ultimately meet the narrative water quality objectives for floating material, settleable material, and suspended material. (CWA §402(p)(3)(B)(iii)) This Permit builds on the data and information collected in the last permit term and increases expectations of Permittees in this Permit. In particular, this Permit requires that the Permittees make significant progress toward having no trash impact on receiving waters by implementing a combination of increased full trash capture, and trash reduction and elimination measures that have similar effect to full trash capture. This is consistent with the statewide amendment to the Ocean Plan and the Inland Surface Waters, Bays and Estuaries Plan relating to trash controls. This Permit includes trash generation source identification and control, visual assessment data collection, and development of receiving water monitoring protocols. These requirements reflect the most current knowledge and data available concerning effectiveness of trash control strategies such as full trash capture, enhanced maintenance methods and current thinking regarding the best methods to assess trash reduction outcomes for the various trash reduction methods.

Specific Provision C.10 Requirements

C.10.a. Trash Reduction Requirements

C.10.a.i. Trash Reduction Schedule – This provision includes compliance deadlines of 70 percent trash load reduction by 2017 and 80 percent trash load reduction by 2019. To provide assurance that Permittees are making timely progress towards meeting the 2017 deadlines, this provision includes a performance guideline of 60 percent trash load reduction by 2016.. This performance guideline is a reporting requirement, but not an enforceable end point. It is a benchmark for assessing progress, and Permittees that do not attain the 60 percent performance guideline are

[60] Sheavly, S.B. 2004. *Marine Debris: an Overview of a Critical Issue for our Oceans.* 2004 International Coastal Cleanup Conference, San Juan, Puerto Rico. The Ocean Conservancy.

required to provide documentation in a report to the Water Board that adequate trash management actions to attain the forthcoming 2017 mandatory deadline is underway or scheduled. The compliance deadlines are consistent with the previous permits goals of 70 percent trash load reduction by 2017 and 100 percent trash load reduction (or no adverse trash impact) by 2022.

C.10.a.ii. Trash Generation Area Management – The overarching strategy for reducing trash involves mapping trash generation areas within a Permittee's jurisdiction, then applying effective trash reduction actions to the areas of trash generation and assessing the effectiveness of those actions in delineated trash generation areas, until trash generation is reduced to the no impact level over a Permittee's entire jurisdiction. The Permittees reported these trash generation maps with their Long Term Trash Reduction Plans February, 2014, and these maps provide the 2009 trash generation levels, which were required by the previous permit. Permittees that find inaccuracies in their submitted maps may submit corrected 2009 trash generation maps with their 2016 Annual Reports. Permittees developed their 2009 generation maps by dividing their jurisdiction into Very High, High, Moderate, and Low trash generation areas based on the following ranges of trash generation rates:

Low = less than 5 gal/acre/yr;
Moderate = 5-10 gal/acre/yr;
High = 10-50 gal/acre/yr; and
Very High = greater than 50 gal/acre/yr.

C.10.a.ii.a. Actual trash loading values, particularly in areas of high and very high trash generation areas, may vary significantly, but these delineated ranges provide a frame of reference for tracking and demonstrating trash load reductions and provide relative trash generation weight of these four categories. Permittees likely will need to reduce trash generation to at least Low to attain the ultimate required water quality-based outcome of no trash loads that cause or contribute to adverse trash impacts in receiving waters, i.e., the 2022 goal. Whether attainment of Low trash generation rates are sufficient will be evaluated and considered in the development of requirements in the next permit. Demonstration that trash management actions reduce trash generation from Very High, High, or Moderate to a Low trash generation rate during this permit term provides a practicable means of demonstrating trash load reduction and attainment of the 2017 and 2019, 70 and 80 percent trash load reduction requirements, respectively, and consideration of the 2016 performance guideline.

C.10.a.ii.b. Permittees are responsible for trash discharges from their storm drain systems. Permittees have direct control over their properties and right of way, but must also exert control over other lands, such as commercial parking lots, that are plumbed directly into their storm drain system, since trash washed into such conveyance by stormwater will then directly impact receiving waters without encountering trash control actions on public right of way. Permittees may use a variety of means to ensure that either full trash capture devices are installed on such conveyances prior to intersection with the public storm drain system or that other

control actions equivalent to full trash capture are implemented on those private lands and such actions are verified through assessment, similar to the on-land visual assessment. Permittees must report the status of all such lands in parcel sizes over 10,000 ft^2 and place them on their trash generation maps or otherwise record location and status information about them. While Permittees are responsible for all such land in their jurisdictions, the Permit sets a reporting threshold of 10,000 ft^2 with the goal of balancing appropriate oversight over those lands and limiting the total number of specific parcels or area that must be identified and mapped.

C.10.a.iii. Minimum Full Trash Capture - This provision requirement is carried forward from the previous permit. Full trash capture systems provide a direct and effective mean to control trash discharges to and from storm drain systems. Commercial retail/wholesale land use area is a simple surrogate of trash generation area, and the minimum amount of area that was required to be treated with full trash capture systems was considered reasonable and achievable. Most, if not all, Permittees have already met or exceeded the minimum full trash capture requirement. Full trash capture system screening and treatment flow capacity specifications are the same as those specified in the previous permit. They are also the same as the full trash capture specifications in the Trash Amendments adopted by the State Water Board.

C.10.b Demonstration of Trash Reduction Outcomes

C.10.b.i.(a.-c.) Full Trash Capture Systems - Full trash capture systems must be maintained to be effective. If a full trash capture systems enters a rain period with a full trash reservoir, or is clogged with leaves or trash, trash may bypass the device and it will not function as a full trash capture device. Therefore these devices must be frequently inspected and maintained at a sufficient level. These requirements allow for Permittees to conduct inspections and maintenance in a flexible, as-needed, manner. Permittees are required to maintain adequate maintenance records and report any full trash capture devices found to be not adequately maintained or improperly functioning. Permittees are also required to certify annually that all of their full trash capture devices are adequately operated and maintained.

C.10.b.ii. Other Trash Management Actions

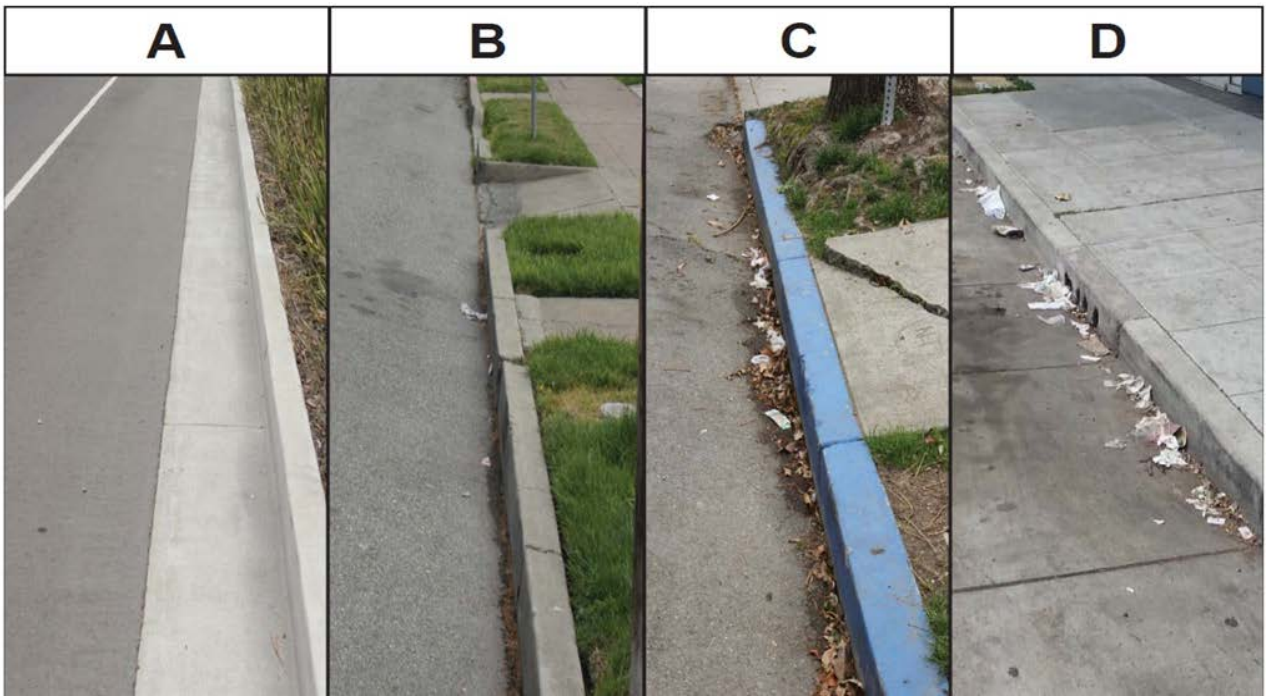
C.10.b.ii.a. Implementation Documentation – Documentation of trash management or control actions implemented and areas of implementation is essential to support trash reduction effectiveness and trash condition improvement.

C.10.b.ii.b.((i)-(iv)) Visual Assessment of Outcomes of Other Trash Management Actions – The primary tool currently available for determining trash reduction action success and positive outcomes is visual assessment, with photo documentation of trash generation and conditions in areas that drain to storm drains. Visual assessment involves observing a sufficient portion of each, e.g., sidewalk and curb area, at a frequency that adequately represents the trash management area condition relative to the type(s) of management actions implemented in the area. The frequency of required visual assessments depends on the rate of trash generation, the sources and types of trash, trash management actions deployed, and time of year. During the wet season, October through April, visual assessments in a trash

management area must be conducted at a frequency that determines whether there may be trash discharges to the storm drain system from sources or areas of trash accumulations before a trash management action or combination of actions is implemented or between recurring trash management actions. The degree of trash reduction that a Permittee claims also affects the frequency of visual assessment necessary to make the claim. Higher reduction claims typically require higher frequency of assessments.

During the wet season, for claims that a trash generation area has been reduced to a low trash generation area, this should be at least once per month in what was a very high trash generation area, at least twice per quarter in what was a high trash generation area, and once per quarter in what was a moderate trash generation area. Permittees, with justification, may conduct less frequent visual assessments for claims that a trash generation area has been reduced from what was a very high trash generation area to a high or moderate trash generation area or from what was a high trash generation area to a moderate trash generation area. Frequency of visual assessments during the dry season, May through September, should be at least once per quarter, including, and preferably, within the month (September) before the wet season begins. Higher frequencies of visual assessments than those illustrated above may be required to demonstrate effectiveness of trash control actions and claimed trash reduction. Lower frequencies than those illustrated above may also be acceptable with justification.

At this point in time, due to the lack of a standard method or protocol to effectively measure trash in receiving waters from municipal storm drains, visual assessment is the best type of monitoring to assure compliance with the Permit's requirements to implement trash management actions to reduce trash discharges into municipal storm drains. (See 40 CFR § 122.44(i).) The required amount, type, interval and frequency will yield data that is representative of the monitored activity, as required by 40 CFR § 122.48(b). This graphic demonstrates four trash visual conditions that correspond to the four trash generation categories of Very High (D), High (C), Moderate (B) and Low (A).



It is also possible to assess trash reduction outcome by documenting and verifying that trash management actions in a trash management area are equivalent to trash management actions implemented in an equivalent trash management area, and the actions in the equivalent trash management area have been assessed to be effective in accordance with a specified performance standard and the assessment results are reproducible. In such cases, it may be possible to extrapolate the performance assessment results to the equivalent trash management area with some verification. If this evidence is proposed by Permittees and accepted by the Executive Officer, Permittees may claim a similar trash reduction outcome by demonstrating that they have performed these trash reduction actions within similar trash management areas to the same performance standard.

C.10.b.iii. Percentage Discharge Reduction – Demonstration that trash management actions reduce trash generation from Very High, High, or Moderate to lower trash generation categories and the Low generation status during this permit term provides a practicable means of demonstrating trash load reduction and attainment of the 70 and 80 percent trash load reduction deadlines and consideration of the 2016 performance guideline (C.10.a.ii.a)**.** However, trash management actions in Very High and High trash generation areas will result in more trash load reduction than actions in Moderate trash generation. Accordingly, a trash reduction demonstration methodology that provides relative benefit weight to actions in Very High and High areas is preferable to one that just considers percentage change in Very High, High, and Moderate trash generation area. The trash generation rates used by Permittees to delineate and map their 2009 trash generation area maps provide a means to provide a relative benefit weight to demonstrated reductions in the areas of Very High and High trash generation, even if they are not reduced all the way to Low generation.

The delineation of trash generation areas were based on ranges of trash generation rates (C.10.a.ii.). Therefore, the ratios of the approximate midpoints of the categorical trash generation ranges provides a means of weighing relative benefit to actions in Very High and High areas compared to actions in Moderate areas. The Moderate range is 5-10 gal/acre/yr, with a midpoint of 7.5 gal/acre/yr. The High range is 10-50 gal/acre/yr with a midpoint of 30 gal/acre/yr. Therefore, the weighed ratio of High to Moderate is 30/7.5 = 4. The Very High range, greater than 50 gal/acre/yr, does not have a specified upper bound that allows calculation of a midpoint. An alternative that provides reasonable weighing of Very High is 90 gal/acre/yr, which is 40 percent higher than the low end of the Very High range. This results in a weighed ratio of Very High to Moderate of 90/7.5 = 12.

The following formula provides a means of demonstrating attainment of the percent trash load reduction deadline and performance guidelines with weighted benefit of Very High and High trash generation area percent reductions relative to Moderate trash generation area percent reductions:

$$\% \text{ Reduction} = 100\ [(12\ A_{VH(2009)} + 4\ A_{H(2009)} + A_{M(2009)})\ - (12\ A_{VH} + 4\ A_{H} + A_{M})]\ /\ (12\ A_{VH2009} + 4\ A_{H2009} + A_{M2009})$$

where:

$A_{VH(2009)}$ = total amount of the 2009 very high trash generation category jurisdictional area

$A_{H(2009)}$ = total amount of the 2009 high trash generation category jurisdictional area

$A_{M(2009)}$ = total amount of the 2009 moderate trash generation category jurisdictional area

A_{VH} = total amount of very high trash generation category jurisdictional area in the reporting year

A_{H} = total amount of high trash generation category jurisdictional area in the reporting year

A_{M} = total amount of moderate trash generation category jurisdictional area in the reporting year

12 = Very High to Moderate weighing ratio

4 = High to Moderate weighing ratio

100 = fraction to percentage conversion factor

C.10.b.iv. Source Control – Jurisdiction-wide source control actions will have trash generation and load reduction benefit beyond what can be accounted for in trash management area specific assessment-based percentage discharge reduction (C.10.b.iii). These include Permittee efforts to adopt and implement source control on certain types of trash, particularly persistent, floating litter and other particularly difficult types of trash that are easily blown by the wind or clog full trash capture devices. This type of trash has been documented to be a significant percentage of the trash collected in full trash capture devices, and Permittees that have implemented such source control have documented significantly less such litter types in their hand collection of trash and litter on land. Permittees will be allowed to claim load

reduction compliance value of up to ten percent load reduction total for all such actions. This would be added to the % Reduction amount calculated by the C.10.b.iii - Percentage Discharge Reduction formula in demonstrating attainment of the percent trash load reduction deadline requirements and performance guideline. To claim a load percentage reduction value, Permittees must provide substantial evidence that these actions reduce trash by the claimed value. A Permittee may reference studies in other jurisdictions if it provides evidence that the implementation of source control in its jurisdiction is similarly implemented as the source control assessed in the reference studies. Source control load reduction value(s) will be reviewed during reissuance of the Permit, and value(s) for source control load reductions might not be continued and allowed in the next permit, particularly in areas where the value of source controls will be accounted for in observed reductions in trash in trash generation areas, to avoid double counting. Also, the focus of the next permit will move to attainment of the 2022 goal and consideration of receiving water condition compliance indicators, and source control load reduction values may no longer be relevant.

C.10.b.v. Receiving Water Monitoring – Receiving water monitoring for trash provides additional evidence and can verify that full trash capture systems and other trash management actions are preventing trash from discharging into receiving waters and whether additional actions may be necessary associated with sources within a Permittee's jurisdiction. They can also show whether there are ongoing sources outside of the Permittee's jurisdiction that are causing or contributing to adverse trash impacts in the receiving water(s). There are currently no standard methods and protocols for monitoring trash in receiving waters. However, BASMAA is developing and testing some trash monitoring tools and protocols via a California Proposition 84 grant funded project (Agreement # 12-420-550), *Tracking California's Trash*. During this Permit term, the Permittees will develop and test trash receiving water monitoring tools and protocols designed, to the extent possible, to answer the following questions:

1. Have a Permittee's trash control actions effectively prevented trash within a Permittee's jurisdiction from discharging into receiving water(s)?
2. Is trash present in receiving water(s), including transport from one receiving water to another, e.g., from a creek to a San Francisco Bay segment, at levels that may cause adverse water quality impacts?
3. Are trash discharges from a Permittee's jurisdiction causing or contributing to adverse trash impacts in receiving water(s)?
4. Are there sources outside of a Permittee's jurisdiction that are causing or contributing to adverse trash impacts in receiving water(s)?

The monitoring tools and protocols may include direct measurements and/or observation of trash in receiving waters. In scenarios where direct measurements or observations are not feasible, surrogates for trash in receiving waters, such as measurement or observation of trash on shorelines or creek banks may provide a practicable means of monitoring trash. This includes consideration and appropriate simplification of the shoreline and creek bank trash assessment method developed by

Water Board staff, *Rapid Trash Assessment Method Applied to Waters of the San Francisco Bay Region: Trash Measurement in Streams. Surface Water Ambient Monitoring Program.* April 2007.

> The goal is to establish the least expensive and simplest to use monitoring methods and protocols that are applicable to the various discharge and receiving water scenarios that accounts for the various receiving waters and watershed, community, and drainage characteristics within Permittees' jurisdictions that affect the discharge of trash and its fate and effect in receiving water(s). These and other factors, such as feasibility, location logistics, types of trash, complexity, and costs, provide a means to focus and limit the number of monitoring tools and protocols, and determine spatial and temporal representativeness of the tools and protocols, representativeness of scenarios that will be tested.
>
> Keys to establishing the least expensive and simplest to use monitoring methods and protocols include: their acceptance and use by interested parties; ensuring their scientific integrity by having them peer reviewed; and a user-friendly system to manage and access monitoring results. To provide a balance between allowing time to develop and test the tools and protocols and allowing enough time to review the proposed monitoring program in advance of reissuance of the Permit, Permittees must submit a preliminary report on the proposed monitoring program by July 1, 2019, a year in advance of the final proposed monitoring program due July 1, 2020, six months before the Permit expires. This should allow for early resolution of some monitoring program issues that are not dependent on completion of tests. Given the interest in receiving water monitoring by multiple parties, Permittees are encouraged to conduct development and testing of the tools and protocols and development of the monitoring program through an independent third party, such as the San Francisco Estuary Institute, that provides for interested party participation and scientific peer review of the work. Permittees will not be required to submit the preliminary monitoring program report if the work is conducted by an independent third party.

C.10.c. Trash Hot Spot Selection and Clean Up

The previous permit included a requirement for Permittees to cleanup a minimum number of Trash Hot Spots in receiving waters or on shorelines or creek banks associated with their jurisdictions. Trash Hot Spot cleanups remove trash discharged from a Permittee's jurisdiction and lessen the adverse impacts from the discharges until they are abated by a Permittee's trash management actions. Trash Hot Spot cleanups have an added benefit in that may also remove discharges of trash from non-storm drain sources, e.g., direct dumping or homeless encampments. They also provide an additional means of assessing the effectiveness or Permittees' trash management actions and identification of the types and sources of trash. The required Trash Hot Spot assessment is based on the SWAMP Rapid Trash Assessment Protocol.

C.10.d. Trash Load Reduction Plans

The previous permit required Permittees to prepare a Plan to achieve the 2017 and 2022 trash reduction deadline requirements. A Trash Load Reduction Plan provides a means for Permittees to determine and account for appropriate trash management actions in their

trash management areas and their schedule of implementation, and it provides documentation of planned actions that can be referenced if annual performance guidelines are not met. It also provides a basis for justifying and accounting for the types and locations of Permittees' assessments of trash management actions, and for optional trash load offset opportunities allowed by C.10e.

C.10.e. Optional Trash Load Reduction Offset Opportunities

C.10.e.i. Additional Creek and Shoreline Cleanup - Some Permittees cleanup more than the minimum required C.10.c Trash Hot Spot cleanups. These additional creek and shoreline cleanups are of value in removing trash from shorelines and creeks or creek banks that are causing or may cause adverse impacts to receiving waters. Permittees conduct some of these additional cleanups with community volunteers, which creates additional public outreach and participation benefits.

The volume of trash removed in these cleanups tends to be high compared to the estimated volume rate loads calculated using the average (nominal midpoint) trash generation rates (C.10.a.ii). This is due in part to Trash Hot Spot locations, which are often downstream of Very High and High trash generation areas with actual generation rates at the upper end of those category ranges. Another reason may be that these cleanups likely remove trash from direct discharges other than from Permittees' storm drain systems. Also, these cleanups sometimes occur just one-time so the volume of trash removed cannot be directly compared with required trash reduction rate volumes.

One way to recognize the value of these additional cleanups and to account for the short-term benefit (volume) of cleanups compared to ongoing trash load discharges (average volume /time) is to use an offset ratio of three to one for the 2016 performance guideline and 2017 mandatory trash load reduction deadline, and ten to one for the 2019 mandatory trash load reduction deadline, when comparing additional cleanup volumes with 2009 trash load estimates based on using average trash generation category values and to cap the offset amount. The following formula generates a Permittee-specific trash volume amount, based on its 2009 categorical trash generation areas and a three to one or ten to one offset ratio, which may be used to offset one percent of a required percent load reduction value:

$$1\%\ \text{Reduction Offset (volume)} = (12\ A_{VH(2009)} + 4\ A_{H(2009)} + A_{M(2009)})\ OF$$

where:

$A_{VH(2009)}$	=	total amount of 2009 very high trash generation category jurisdictional area
$A_{H(2009)}$	=	total amount of 2009 high trash generation category jurisdictional area
$A_{M(2009)}$	=	total amount of 2009 moderate trash generation category jurisdictional area
12	=	Very High to Moderate weighing ratio
4	=	High to Moderate weighing ratio
OF	=	offset factor equal to (7.5 x 0.033) for the 2016 performance guideline and 2017 mandatory trash load reduction deadline, where 7.5 is the conversion from acres to gallons based on trash

generation rates and 0.033 is the three to one offset ratio, or (7.5 x 0.1) for the 2019 mandatory trash load reduction deadline, where 7.5 is the conversion from acres to gallons based on trash generation rates and 0.1 is the ten to one offset ratio.

A Permittee can compare trash volumes collected from additional cleanups to this calculated offset volume and apply one percent offset to a C.10.a.i percent load reduction requirement for each collected volume that equals the 1% Reduction Offset (volume). However, the total offset that can be claimed to avoid over-compensation associated with the short-term benefit (volume) of cleanups compared to ongoing trash load discharges (average volume/time) is limited to ten percent. Furthermore, to justify the offset the associated cleanups must occur more than once per year and preferably at a frequency sufficient to demonstrate sustained improvement of a creek or shoreline area. Offset values will be reviewed during reissuance of the permit, and value(s) for cleanups might not be continued and allowed in the next permit, particularly in areas where Permittees have responsibility for discharges of trash to a cleanup area. The focus of the next permit will move to attainment of the 2022 goal and consideration of receiving water condition compliance indicators, and cleanup values may no longer be relevant.

C.10.e.ii. Direct Discharge Controls - Some Permittees are faced with the challenge that large amounts of trash are discharged to receiving waters in their jurisdiction from homeless encampments and direct dumping. These trash discharges are separate from and in addition to discharges from Permittee storm drain systems. Elimination and prevention of adverse water quality impacts due to trash and attainment of water quality standards in receiving waters will require management of these non-storm drain system discharges in addition to control of storm drain system trash discharges by Permittees. Accordingly, some Permittees are taking or are willing to take actions to control these other sources by implementing a comprehensive plan to control all sources of trash discharged to receiving waters in their jurisdiction. Accordingly, Permittees should be allowed to offset some of their percent load reduction requirements if they control these other sources.

Permittees have and likely will continue to demonstrate the benefit of controlling these additional sources by accounting for the volume of trash collected. As with additional creek and shoreline cleanups, the volume of trash removed cannot be compared directly with trash load discharge rate (volume/time).The simplest, and possibly only way to account for these additional control actions, until more rigorous assessment and accountability methods are developed, is to allow a Permittee to offset part of its C.10.a trash load percent reduction requirement using the C.10.e.i formula to determine an offset from additional creek and shoreline cleanup. However, since control of these other sources by Permittees will be through implementation of a comprehensive and sustained program, Permittees that implement a comprehensive plan approved by the Executive Officer merit a higher offset cap than that allowed by C.10.e.i for additional creek and shoreline cleanup. A fifteen percent offset-cap based on the C.10.e.i formula provides a balance between incentive and reward for control of these non-storm drain system sources and the uncertainties associated with the

simple formula. It is likely that this offset will be removed from this provision during the next permit term. This will occur as the 2022 target deadline approaches and the focus turns to determining the condition of the receiving waters to determine compliance.

C.10.f. Reporting
The reporting requirements reflect the minimum amount of information needed to demonstrate compliance with all Provision C.10 requirements.

Costs of Trash Control

With the assistance of a $5 million grant from the American Recovery and Reinvestment Act obtained and distributed by the San Francisco Estuary Partnership, the Permittees cumulatively exceeded the full trash capture permit requirement acreage by over a factor of four. Therefore, it would appear that the following cost estimate produced in 2008 significantly over-estimated the costs of full trash capture installation at the time.

Costs for either enhanced trash management measure implementation or installation and maintenance of trash capture devices are significant, but when spread over several years, and when viewed on a per-capita basis, are reasonable.

Trash is costly to remove from our aquatic resource environments. Staff from the California Coastal Commission report that the Coastal Cleanup Day budget statewide: $200,000-250,000 for Coastal Commission staff, and much more from participating local agencies. The main component of this event is the 18,000 volunteer-hours, which translates to $3,247,200 in labor, and so is equivalent to $3,250,000-3,500,000 per year to clean up 903,566 pounds of trash and recyclables at $3.60 to $3.90 per pound. This is one of the most cost-effective events because of volunteer labor and donations. The County of Los Angeles spends $20 million per year to sweep beaches for trash, according to Coastal Commission staff.

Mr. Morad Sedrak, the TMDL Implementation Program Manager, Bureau of Sanitation, Department of Public Works, City of Los Angeles, reports that the City plans to invest $72 million dollars for storm drain catch basin based capture device installation primarily, for a City of 4 million population, for a per-capita cost of $18 dollars. This effort is occurring over a span of over five years, for an annual per-capita cost of under $4.

Mr. Sedrak reports that O&M costs are not anticipated to increase, as the City of L.A. is already budgeted for 3 catch basin cleanings per year. He also states that catch basin inserts installed inside the catch basin in front of the lateral pipe, which have been certified by the Los Angeles Regional Water Board as total capture trash control devices, cost approximately $800 to $3,000 (including installation) depending on the depth of the catch basin. .

Furthermore, the price for catch basin opening screen covers, which are designed to retain trash at the street level for removal by sweepers, and also to open if there is a potential flooding blockage, ranges roughly from $800 to $4,500, depending on the opening size of the catch basin.

The City of Los Angeles has currently spent 27 million dollars on a retrofit program to install catch basin devices in approximately 30% of its area, with either inserts or screens or both. Mr. Sedrak states that Los Angeles plans to spend $45 million over the next 3 years to retrofit the remaining catch basins within the City. The total number of catch basins within the City is approximately 52,000.

The following are links to information about the Los Angeles trash control approach:

http://www.lastormwater.org/Siteorg/program/TMDLs/trashtmdl.htm

http://www.lastormwater.org/Siteorg/download/pdfs/general_info/Request-Certification-10-06.pdf)

http://www.lastorhttp://www.lastormwater.org/Siteorg/download/pdfs/general_info/Request-Certification-10-06.pdfmwater.org/Siteorg/program/poll_abate/cbscreens.htm

http://www.lastormwater.org/Siteorg/program/poll_abate/cbinserts.htm

http://www.lastormwater.org/Siteorg/program/poll_abate/cbscreens.htm

In Oakland, the Lake Merritt Institute is currently budgeted at $160,000 per year, with trash and litter removal from the Lake as a major task. The budget has increased from about $45,000 in 1996 to current levels. In the period of 1996-2005 the Lake Merritt Institute staff, utilizing significant volunteer resources, and accomplishing other education tasks, removed 410,859 pounds of trash from the Lake at cost of $951,725, or $2.30 per pound.

The City of Oakland reports that installation of two vortex and screen separators cost $821,000 for installations and treat tributary catchments of 192 acres before discharge to Lake Merritt (a cost of $4,276 per acre). The following table details these costs and other pertinent information

City of Oakland—CDS Unit Overview 9-07

Existing CDS unit location	Outfall number	Treatment area (acres)	Cost of implementation	Sizing	Maintenance requirements	Comments
Intersection of 27th and Valdez Streets	56*	71	$203,000 to contactor; plus ~$100,000 City costs	73 cfs peak flow; 36" stormdrain; Unit sizing: 18'6'6' box with 10'11"diam x 9'6" long cylinder	Visually inspect CDS Unit; remove trash and debris with Hydro Flusher bi-monthly	Installed in 2006. Required relocation of electrical conduit. Water main and gas line were also in the way; the box was adjusted to accommodate these conflicts.
Intersection of 22nd and Valley Streets	56*	121	$368,000 to contactor; plus ~$150,000 City costs	115 cfs peak flow; 54" storm drain; Unit sizing: 18'8.5'6' box with 12'diam x 9'6" long cylinder	Visually inspect CDS Unit; remove trash and debris with Hydro Flusher bi-monthly	Installed in 2006. Installation costs were higher than anticipated. Sewer lines and PGE facilities were exposed that were not known before. Unit had to be modified and poured-in-place.

* The City is treating 192 acres or 72 percent of the 252 acres draining to outfall number 56.

Additional cost information on various trash capture devices is included in the Santa Clara Valley Urban Runoff Pollution Prevention Program BMP Trash Toolbox (July 2007). The Toolbox contains cost information for both trash capture devices and enhanced trash management measure implementation, covers a broad range of options and also discusses operation and maintenance costs. Catch basin screens are included with an earlier estimate by the City of Los Angeles of $44 million over 10 years to install devices in 34,000 inlets.

The City of Oakland provided information on the cost of trash booms. The Damon Slough trash boom or sea curtain cost $36,000 for purchase and installation, including slough side access improvements for maintenance and trash removal. Annual maintenance costs have been $77,000 for weekly maintenance, which includes use of a crane for floating trash removal.

C.11. Mercury Controls

The purpose of this provision is to implement the urban runoff requirements of the San Francisco Bay and Guadalupe River Watershed mercury TMDLs and reduce mercury loads to make substantial progress toward achieving the urban runoff mercury wasteload allocations established for the TMDLs.

The C.11 provisions follow the general approach for sediment-bound pollutants discussed above (General Strategy for Sediment-Bound Pollutants (Mercury and PCBs**))** and accordingly, build on understanding gained from pilot testing many control measures during the Previous Permit term. During this Permit term Permittees are expected to continue to improve the level of certainty concerning control measure benefit and effectiveness by implementing actions in a phased approach, and then expand implementation of those actions that prove effective, and perhaps scale back or discontinue those that are not effective.

However in contrast to the Previous Permit term, this Permit does not specify control measures to implement to achieve load reductions. Rather, the permit requires development and implementation of a load reduction accounting scheme along with a quantitative demonstration of the load reductions that result from implementation of all relevant control measures. The Permittees may comply with any requirement of this provision through a collaborative effort. Many of the control measures may be chosen primarily for the purpose of achieving PCBs load reductions, but substantial mercury load reductions may result as a tangential benefit and should be accounted for.

Fact Sheet Findings in Support of Provision C.11

C.11-1 On August 9, 2006, the Water Board adopted a Basin Plan amendment including a revised TMDL for mercury in San Francisco Bay, two new water quality objectives, and an implementation plan to achieve the TMDL. The State Water Board and U.S. EPA have also approved this Basin Plan amendment. C.11-3 through C.11-7 are components of the Mercury TMDL implementation plan relevant to implementation through the municipal stormwater permit.

C.11-2 On October 8, 2008, the Water Board adopted a Basin Plan amendment including a TMDL for mercury in the Guadalupe River Watershed (GRW) and an implementation plan to achieve the TMDL. The State Water Board and U.S. EPA have also approved this Basin Plan amendment. The GRW mercury TMDL assigns an urban stormwater runoff allocation proportionally equivalent to the mass allocation in the San Francisco Bay mercury TMDL. Accordingly, the GRW urban stormwater runoff mercury allocation is simply the fraction of the Santa Clara Valley Urban Runoff Pollution Prevention Program allocation attributed to the Guadalupe River watershed. The urban stormwater runoff allocation implicitly includes all current and future permitted discharges within the geographic boundaries of municipalities and unincorporated areas including, but not limited to, California Department of Transportation (Caltrans) roadways and non-roadway facilities and rights-of-way, atmospheric deposition, public

facilities, properties proximate to stream banks, industrial facilities, and construction sites.

C.11-3 The 2003 load of mercury from urban runoff was estimated to be 160 kg/yr, and the aggregate WLAs for urban runoff is 82 kg/yr and shall be implemented through the NPDES stormwater permits issued to urban runoff management agencies and Caltrans. The urban stormwater runoff allocations implicitly include all current and future permitted discharges, not otherwise addressed by another allocation, and unpermitted discharges within the geographic boundaries of urban runoff management agencies (collectively, *source category*) including, but not limited to, Caltrans roadway and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.

C.11-4 The allocations for this source category shall be achieved within 20 years, and, as a way to measure progress, an interim loading milestone of 120 kg/yr, halfway between the current load and the allocation, should be achieved within 10 years. If the interim loading milestone is not achieved, NPDES-permitted entities shall demonstrate reasonable and measurable progress toward achieving the 10-year loading milestone.

C.11-5 The NPDES permits for urban runoff management agencies shall require the implementation of BMPs and control measures designed to achieve the allocations or accomplish the load reductions derived from the allocations. In addition to controlling mercury loads, BMPs or control measures shall include actions to reduce mercury-related risks to humans and wildlife. Requirements in the permit issued or reissued and applicable for the term of the permit shall be based on an updated assessment of control measures intended to reduce pollutants in stormwater runoff and remain consistent with the section of the Basin Plan chapter titled, *Surface Water Protection and Management—Point Source Control—Stormwater Discharges*.

C.11-6 The following additional requirements are or shall be incorporated into NPDES permits issued or reissued by the Water Board for urban runoff management agencies.

a. Evaluate and report on the spatial extent, magnitude, and cause of contamination for locations where elevated mercury concentrations exist;

b. Continue to develop and implement a mercury source control program;

c. Implement a monitoring system to quantify either mercury loads or loads reduced through treatment, source control, and other management efforts;

d. Monitor levels of methylmercury in discharges. This requirement was satisfactorily accomplished during the last permit term and will not be included in the permit during this permit term;

e. Conduct or cause to be conducted studies aimed at better understanding mercury fate, transport, and biological uptake in San Francisco Bay and tidal

areas. This requirement is not necessary at the moment and will not be included in the permit during this permit term;

f. Develop an equitable allocation-sharing scheme in consultation with Caltrans to address Caltrans roadway and non-roadway facilities in the program area, and report the details to the Water Board (This was satisfactorily accomplished during the last permit term);

g. Prepare an Annual Report that documents compliance with the above requirements and documents either mercury loads discharged, or loads reduced through ongoing pollution prevention and control activities; and

h. Demonstrate progress toward (a) the interim loading milestone, or (b) attainment of the allocations shown in Individual WLAs (see Table 4-w of the Basin Plan amendment), by using one of the following methods:

(1) Quantify the annual average mercury load reduced by implementing

i. Pollution prevention activities, and
ii. Source and treatment controls. The benefit of efforts to reduce mercury-related risk to wildlife and humans should also be quantified. The Water Board will recognize such efforts as progress toward achieving the interim milestone and the mercury-related water quality standards upon which the allocations and corresponding load reductions are based. Loads reduced as a result of actions implemented after 2001 (or earlier if actions taken are not reflected in the 2001 load estimate) may be used to estimate load reductions.

(2) Quantify the mercury load as a rolling 5-year annual average using data on flow and water column mercury concentrations.

(3) Quantitatively demonstrate that the mercury concentration of suspended sediment that best represents sediment discharged with urban runoff is below the suspended sediment target.

C.11-7 Urban runoff management agencies have a responsibility to oversee various discharges within the agencies' geographic boundaries. However, if it is determined that a source is substantially contributing to mercury loads to the Bay or is outside the jurisdiction or authority of an agency, the Water Board will consider a request from an urban runoff management agency that may include an allocation, load reduction, and/or other regulatory requirements for the source in question.

C.11-8 Recent estimates using the latest available data suggest that the urban runoff mercury loading to San Francisco Bay is on the order of 115 kg/yr (McKee and Yee 2015[61]). While this figure is based on environmental data and thus has

[61] McKee, L.J. and Yee, D., 2015. Sources, Pathways and Loadings: Multi-Year Synthesis. A technical report prepared for the Regional Monitoring Program for Water Quality in San Francisco Bay (RMP), Sources, Pathways and Loadings Workgroup (SPLWG), Small Tributaries Loading Strategy (STLS). San Francisco Estuary Institute, Richmond, California.

inherent uncertainty associated with it, it suggests that current mercury loading is approximately equal to the interim TMDL loading milestone (to be reached at the half-way point of TMDL implementation, 2017) of 120 kg/yr. If mercury loads can be reduced by approximately 35 additional kg/yr, urban runoff loading would meet the TMDL wasteload allocation.

C.11-9 Mercury is distributed more uniformly throughout the urban landscape than PCBs. For example, loading from older industrial and other polluted source areas accounts for only 6% of the average annual mercury load, but these areas account for over 50% of the average annual PCBs load (McKee and Yee 2015). The likely stronger role of atmospheric deposition in the case of mercury, which may account for up to 50% of the mercury found in urban runoff, is part of the reason for the more uniform mercury distribution in the landscape (McKee and Yee 2015).

C.11-10 Monitoring data indicate that, while not always the case, watersheds with high PCB~~s~~ concentrations often contain high or moderately high mercury concentrations (McKee and Yee 2015). Therefore, control strategies focused on finding and managing PCBs-contaminated drainages will often yield mercury load reduction benefits as well.

C.11-11 This provision is consistent with a recent U.S. EPA memorandum[62] providing guidance on implementing TMDL WLAs in NPDES stormwater permits. Specifically, this provision establishes clear and concrete milestones and deadlines (see C.11.a.iii) for the activities associated with achieving mercury load reductions as well as other requirements (see C.11.b-h.), necessary to achieve receiving water limits of this Permit term relative to the mercury TMDL WLA.

Specific Provision C.11 Requirements

Provision C.11.a. requires Permittees to implement control measures to achieve mercury load reductions. In order to comply with this requirement, Permittees must identify the mercury control measures and the watersheds and management areas in which these measures will be implemented and a time schedule for implementation. Moreover, Permittees must demonstrate quantitatively the load reductions achieved through use of the accounting scheme developed through C.11.b.

This provision is critical to the successful implementation of the urban runoff requirements from the mercury TMDL. The accountability mechanism for control measure implementation consists of three parts: 1) the identification of control measures and associated watersheds and management areas, 2) a commitment to an implementation schedule, and 3) the quantification of load reductions resulting from control measure implementation. Many or most of the control measures that will generate mercury reduction benefits will be chosen based on the benefit for PCBs load reductions.

[62] U.S. EPA. November 26, 2014. Revisions to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs"

Available data indicate that this strategy of focusing on PCBs will yield mercury load reductions in many circumstances. However, there are conceivable control measures that are unique to mercury, like those addressing collection and recycling of mercury-containing devices, and these are, in fact, required by household hazardous waste and producer responsibility laws.

Recent loading estimates suggest that current mercury loading to the Bay is at or below the interim loading milestone established in the TMDL. Moreover, mercury is more evenly distributed in the landscape than PCBs so there are fewer opportunities to find and address heavily contaminated (with mercury) sites to achieve substantial, short-term load reductions. Instead, much of the additional benefit to reduce mercury urban runoff loads will come from a combination of proper disposal and management of mercury containing products as well as much more extensive treatment elements (e.g., green infrastructure) incorporated into the stormwater infrastructure. For these reasons, short-term load reduction performance criteria are not included in C.11.a (in contrast to C.12.a for PCBs).

Provision C.11.b. requires Permittees to develop and implement an assessment methodology and data collection program to quantify mercury loads reduced through implementation of any and all pollution prevention, source control and treatment control efforts required by the provisions of this Permit or load reductions achieved through other relevant efforts not explicitly required by the provisions of this Permit.

Permittees submitted land-use mass yields of mercury in their 2014Integrated Monitoring Report (IMR) for the Previous Permit. When these yields were multiplied by the total area of various land-use categories, the estimated regionwide (for the entire region that discharges to the Bay) mercury load was lower than the load estimated in the mercury TMDL by approximately a factor of 1.3. Therefore, the land-use yields were multiplied by a factor of 1.3 in order to normalize to the estimated baseline mercury load in the mercury TMDL and to agree with recent load estimates from runoff. The resultant (adjusted) mass yields for three land-use types shown here are based on data Permittees collected during the Previous Permit term and provide a reasonable means of calculating the mercury load reductions for control measures implemented in corresponding areas. Permittees may refine these yields when they submit supporting documentation in their 2016 Annual Report.

- Old Industrial Land Use = 1300 mg mercury/acre/year
- Old Urban Land Use = 215 mg mercury/acre/year
- New Urban areas and Other = 33 mg mercury/acre/year

The land-use yield provides a convenient way to calculate the resulting load reduction of various sorts of control measure strategies. For example, when contaminated areas are **newly or redeveloped**, the pollutant yield of the area will be reduced through a variety of mechanisms (i.e., removal, capping, paving of contaminated sediment). So, the amount of mercury load reduction can be obtained by multiplying the area of new/redevelopment by the difference in yield (either old industrial minus new urban or old urban minus new urban, whichever pre-development land-use is applicable).

The mercury load reductions for **retrofits or other treatment controls** (including green infrastructure) can be calculated by multiplying the area treated by the assumed land-use yield of the treated area multiplied by the efficiency factor of the treatment method (using a default value of 70 percent or an efficiency established through documentation of implemented method and reported in annual reports).

For **contaminated private properties** that are referred to the Water Board or other agencies for subsequent remediation, the estimated load reduction can be derived by assuming that the mercury yield of the source area is reduced over the course of site cleanup from a high yield to the old urban yield (215 mg mercury/acre/year). Source areas identified for the purpose of referral tend to have much higher areal yields, but data are not currently available to provide an interim estimate for the mercury yield of such contaminated sites. Permittees would need to provide this information prior to receiving mercury load reduction credit from referral of private properties for cleanup.

This provision allows the opportunity for Permittees to update their default load reduction accounting factors, as adjusted by the Water Board, and in some cases extending the accounting framework presented in the IMR, justifying assumptions and parameters used to quantify the load reduction for each type of control measure, and indicating what information will be collected to confirm the load reduction for each type of implemented control measure. Any adjustments to the default accounting framework must be submitted for Executive Officer approval.

Provision C.11.c Available information suggests that mercury is distributed more uniformly throughout the Bay Area landscape than is the case for PCBs. Therefore, a focus on highly contaminated areas (with mercury) may not be enough to achieve the TMDL-required load reductions. A critical part of the strategy to reduce urban runoff mercury loads will be the widespread implementation of green infrastructure control measures to intercept mercury-containing sediment and stormwater before it is discharged to receiving water. Provision C.11.c requires Permittees to implement green infrastructure projects during the term of the permit to achieve mercury load reductions of 48 g/year by June 30, 2020. This green infrastructure load reduction requirement is feasible in that these load reductions are approximately equivalent to the scale of load reduction achieved during the Previous Permit term through green infrastructure and C.3-related treatment controls (Integrated Monitoring Report 2014). It is reasonable to expect that a similar or greater pace of redevelopment plus green infrastructure implementation on public property can be achieved during this Permit term. The green infrastructure load reduction requirement is warranted because it is important to provide a clear performance expectation for Permittees for green infrastructure implementation because widespread and effective green infrastructure implementation will be an important component of achieving the load reductions necessary to achieve the mercury TMDL wasteload allocation.

County-specific load reductions are derived from the allocations and load reductions stated in the mercury TMDL. Namely, the TMDL-required load reduction for a county was divided by the total TMDL-required load reduction for the permit area (the area covered by this Permit) and this fraction was multiplied by 48 g/yr to derive the county-

specific green infrastructure load reduction requirement. While not required in the Permit, it will be essential to develop effective and easy-to-use tracking and visualization tools so Permittees, regulators, and stakeholders can monitor progress of green infrastructure implementation and its water quality impacts.

Because mercury is distributed throughout the urban landscape, extensive implementation of green infrastructure elements is going to be necessary to achieve the load reductions required by the TMDL. However, the planning, financing and implementation of green infrastructure is going to take a long time, perhaps as much as 25 years or more. This also means that the load reduction benefits of such implementation will also be realized over an extended time frame. To ensure that Bay Area municipalities are working effectively and expeditiously in implementing appropriate green infrastructure controls to reduce loads of mercury, PCBs and other pollutants of concern, the Permit requires Permittees to prepare a reasonable assurance analysis to rigorously and quantitatively demonstrate that mercury load reductions of at least 10 kg/yr throughout the permit area will be achieved over the course of the next 25 years (i.e., by 2040) through implementation of green infrastructure throughout the permit area..

Preparing the reasonable assurance analysis will be a step-wise process. Permittees must: establish the relationship between areal extent of green infrastructure implementation and mercury load reductions, estimate the amount and characteristics of land area that will be treated through green infrastructure in future years, and estimate the amount of mercury load reductions that will result from green infrastructure implementation by specific future years. Ultimately, the reasonable assurance analysis will require the use of one or more models. Permittees must therefore ensure that the calculation methods, models, model inputs and modeling assumptions used to make the demonstration have been validated through a peer review process.

Fortunately, the permittees in the Bay Area can take advantage of related (reasonable assurance analysis) efforts already underway in Southern California. The Los Angeles Regional Water Board has produced a useful set of guidelines for conducting a Reasonable Assurance Analysis (RAA) for the watershed management programs that are required through their MS4 permits.[63] These guidelines provide an excellent reference and starting point for the RAA required through C.11/12.c in terms of the mechanics of the analysis, BMP identification, critical condition selection, choice of models, model calibration criteria, modeling inputs, and model outputs. The crucial feature of the Southern California RAAs is that they must demonstrate with sufficient analytical rigor that the suite of foreseeable control measures to reduce loads will result in compliance with final WLAs. The RAA performed for PCBs and mercury for the San Francisco Bay Area will be similar in many respects to the type of analysis described in the Southern California guidance document, but they must also account for the local watershed characteristics as well as what has been learned about the distribution, fate, and transport characteristics of PCBs and mercury.

[63] Los Angeles Regional Water Quality Control Board (LARWQCB) 2015. *Guidelines for Conducting Reasonable Assurance Analysis in a Watershed Management Program, Including an Enhanced Watershed Management Program.*

Provisions C.11.d requires Permittees to prepare a long-term plan and schedule for mercury control measure implementation and corresponding reasonable assurance analysis quantitatively demonstrating that sufficient control measures will be implemented to attain the mercury TMDL wasteload allocations. The type of analysis for this provision shares many features with the one conducted as part of C.11.c.

The mercury TMDL anticipated the challenge of achieving the urban runoff mercury load reductions required to meet the TMDL allocations within the twenty-year implementation time frame. The TMDL implementation plan states that

"the Water Board will consider modifying the schedule for achievement of the load allocations for a source category or individual discharger provided that they have complied with all applicable permit requirements and all of the following have been accomplished relative to that source category or discharger:"

- *A diligent effort has been made to quantify mercury loads and the sources of mercury and potential bioavailability of mercury in the discharge;*
- *Documentation has been prepared that demonstrates that all technically and economically feasible and cost effective control measures recognized by the Water Board as applicable for that source category or discharger have been fully implemented, and evaluates and quantifies the comprehensive water quality benefit of such measures;*
- *A demonstration has been made that achievement of the allocation will require more than the remaining 10 years originally envisioned; and*
- *A plan has been prepared that includes a schedule for evaluating the effectiveness and feasibility of additional control measures and implementing additional controls as appropriate.*

Provision C.11.d provides the opportunity for Permittees to describe the full suite of actions that will be required to achieve the TMDL along with realistic timelines for this achievement. For example, as explained previously the load reductions for mercury are going to depend heavily on long-term implementation of control strategies (like green infrastructure) that extend beyond the current implementation timeframe of the mercury TMDL. The long-term plan and schedule required as part of this provision will lay the foundation for a formal recognition of an implementation timeframe that is longer than originally conceived in the TMDL.

Provision C.11.e requires actions that manage human health risk due to mercury and PCBs. These may include efforts to communicate the health risks of eating Bay fish and other efforts aimed at high risk-communities such as subsistence fishers and their families. The risk reduction framework developed in the previous permit term, which funded community based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach.

C.12. PCBs Controls

The purpose of this provision is to implement the urban runoff requirements of the San Francisco Bay PCBs TMDL and reduce PCBs loads to make substantial progress toward achieving the urban runoff PCBs wasteload allocations established for the TMDL. In order to make substantial progress, Permittees must implement PCBs control measures strategically during this Permit term. Moreover, aggressive control measure implementation combined with thoughtful planning for the future (see C.12.d) are conditions that must be satisfied before the Water Board can consider an implementation timeframe longer than the 20 years provided in the TMDL.

The C.12 requirements follow the general approach for sediment-bound pollutants discussed above (General Strategy for Sediment-Bound Pollutants (Mercury and PCBs**))** and accordingly, build on understanding gained during the Previous Permit term. During the Previous Permit, Permittees were required to pilot test a variety of control measures in a limited number of watersheds or portions of a watershed (management area). Building on that knowledge, this provision requires Permittees to implement PCBs control measures (source control, treatment control and/or pollution prevention strategies) in areas where benefits are most likely to accrue (focused implementation) and to report on the loads reduced through implementation of those control measures.

In contrast to the Previous Permit, this Permit does not require implementation of specific control measures. Rather, the Permittees must use their judgment and knowledge of their watersheds to choose the optimum suite of control measures in order to optimize PCBs load reductions. A technically sound load reduction accounting method, based on information gained during the testing phase and based on information reported at the end of the Previous Permit, is provided in this Permit Fact Sheet to provide certainty for Permittees.

As discussed below, based on information gained during control measure pilot testing and reported during the Previous Permit term, load reductions on the order of those required by this Permit are achievable (see Basis for Required PCBs Load Reductions in MRP *2*, February 23, 2015) and necessary in order to make progress toward achieving the regionwide urban runoff wasteload allocation of 2 kg/yr (representing a load reduction from all urban runoff sources of approximately 18 kg/yr compared to loads estimated using data collected in 2003) within the 20-year TMDL timeframe. Further, load reductions resulting from a variety of PCBs control measures may be feasibly calculated in a straightforward manner (see below), and numeric load reduction requirements provide an unambiguous accountability metric against which to evaluate the sufficiency of control measure implementation. In contrast, it is problematic to assess the sufficiency of Permit requirements that merely call for the implementation of BMPs without a specification of the extent or intensity of such BMP implementation. Because specific load reductions are called for by the TMDL, the approach employed in the Permit (specific load reduction requirements) is both more straightforward and appropriate.

The area covered by the Permit (permit area) is smaller than the region that discharges to the Bay. The discharges in the permit area have been allocated 1.6 kg/yr of the total 2 kg/yr wasteload allocation and the total load reductions required from Permittees in the permit area during TMDL implementation is 14.4 kg/yr of the 18 kg/yr regionwide total.

Fact Sheet Findings in Support of Provision C.12

C.12-1 On February 13, 2008, the Water Board adopted a Basin Plan amendment establishing a TMDL for PCBs in San Francisco Bay and an implementation plan to achieve the TMDL. U.S. EPA approved the TMDL on March 29, 2010.

C.12-2 The following excerpts from the TMDL implementation plan are relevant to implementation of the municipal stormwater permit:

"The 2003 load of PCBs from urban runoff is 20 kg/yr, and the aggregate WLAs for urban runoff total 2 kg/yr. Stormwater runoff wasteload allocations shall be achieved within 20 years and shall be implemented through the NPDES stormwater permits issued to stormwater runoff management agencies and the California Department of Transportation (Caltrans). The urban stormwater runoff wasteload allocations implicitly include all current and future permitted discharges, not otherwise addressed by another allocation, and unpermitted discharges within the geographic boundaries of stormwater runoff management agencies including, but not limited to, Caltrans roadway and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.

Requirements in each NPDES permit issued or reissued shall be based on an updated assessment of best management practices and control measures intended to reduce PCBs in urban stormwater runoff. Control measures implemented by stormwater runoff management agencies and other entities … shall reduce PCBs in stormwater runoff to the maximum extent practicable….

In the first five-year permit term, stormwater Permittees will be required to implement control measures on a pilot scale to determine their effectiveness and technical feasibility. In the second permit term, stormwater Permittees will be required to implement effective control measures, that will not cause significant adverse environmental impacts, in strategic locations, and to develop a plan to fully implement control measures that will result in attainment of allocations, including an analysis of costs, efficiency of control measures and an identification of any significant environmental impacts. Subsequent permits will include requirements and a schedule to implement technically feasible, effective and cost efficient control measures to attain allocations. If, as a consequence, allocations cannot be attained, the Water Board will take action to review and revise the allocations and these implementation requirements as part of adaptive implementation.

In addition, stormwater Permittees will be required to develop and implement a monitoring system to quantify PCBs urban stormwater runoff loads and the

load reductions achieved through treatment, source control and other actions; support actions to reduce the health risks of people who consume PCBs-contaminated San Francisco Bay fish; and conduct or cause to be conducted monitoring, and studies to fill critical data needs identified in the adaptive implementation section."

C.12-3 Urban runoff management agencies have a responsibility to oversee various discharges within the agencies' geographic boundaries. However, if it is determined that a source is substantially contributing to PCBs loads to the Bay or is outside the jurisdiction or authority of an agency, the Water Board will consider a request from an urban runoff management agency that may include an allocation, load reduction, and/or other regulatory requirements for the source in question. If these sources are contributing to urban runoff loads (as opposed to direct Bay discharge), load reductions from these sources will count toward meeting the urban runoff wasteload allocations.

C.12-4 Some PCB congeners have dioxin-like properties. Dioxins are persistent, bioaccumulative, toxic compounds that are produced from the combustion of organic materials in the presence of chlorine. Dioxins enter the air through fuel and waste emissions, including diesel and other motor vehicle exhaust fumes and trash incineration, and are carried in rain and contaminate soil. Dioxins bioaccumulate in fat, and most human exposure occurs through the consumption of animal fats, including those from fish. Therefore, the actions targeting PCBs will likely have the simultaneous benefit of addressing a portion of the dioxin impairment resulting from dioxin-like PCBs.

C.12-5 Recent estimates using the latest available data suggest that the urban runoff PCBs loading to San Francisco Bay is on the order of 19 kg/yr (McKee and Yee 2015). While this figure is based on environmental data and thus has inherent uncertainty associated with it, it agrees very well with the regional urban runoff load estimate of 20 kg/yr provided in the TMDL report.

C.12-6 Studies suggest that PCBs load reductions of approximately 6 kg/yr are possible by 2030 through control measures like street sweeping, control of PCBs during building demolition and renovation, drop inlet cleaning, treatment retrofits, redevelopment of contaminated areas, pump station diversion, and street flushing (McKee and Yee 2015). While there are substantial uncertainties associated with these estimates, these results suggest that a substantial portion of the additional load reductions (~ 12 kg/yr) necessary to achieve the PCBs TMDL may need to come from identification and cleanup of PCBs-contaminated properties.

C.12-7 The distribution of PCBs in the urban landscape is much more variable than it is for mercury. For example, data indicate that PCBs-contaminated land uses yield perhaps 800 times more PCBs per unit area compared to the least contaminated land uses. By contrast, there is a 70-fold difference between the highest and lowest yielding land uses for mercury (McKee and Yee 2015). A large proportion (about 53 percent) of annual average urban runoff PCB loading is

likely coming from old industrial or other contaminated areas (McKee and Yee 2015).

C.12-8 A significant recent accomplishment of the Sources, Pathways, and Loadings workgroup of the Regional Monitoring Program has been the development and refinement of a regional watershed spreadsheet model (RWSM). This GIS-based model estimates relative land use and source area yields, and integrates them to provide a transparent, mutually accepted, and peer-reviewed analysis of relative watershed scale yield. Outputs from model runs to date suggest yields for the most polluted watershed in excess of 1000 g/km^2 for PCBs and mercury and a variation between watersheds of ~100,000-fold for PCBs and ~200-fold for mercury. To date, modeling results have a large amount of uncertainty in terms of absolute magnitude, but the results are capturing the patterns of contaminant distribution and transport. The model output is generally consistent with what is known about the distribution of these contaminants in the landscape from stormwater and bedded sediment data. The results are also consistent with what monitoring data tell us about the relative mercury and PCBs loads from land use and source area categories. The predictive power of this modeling tool will be improved as more data are available to characterize PCBs and mercury concentrations in the watersheds and will be useful in predicting regional and sub-regional scale loads of PCBs and other contaminants under a variety of management scenarios (McKee and Yee 2015).

C.12-9 Sufficient information is available to establish default factors for PCBs load reduction credit resulting from foreseeable control measures implemented during this permit term (see information under C.12.b below). For treatment controls, the estimated load reductions can be calculated by multiplying the assumed land-use PCB yearly mass yield by the treated area and by a treatment efficiency factor. The load reduction resulting from cleaning up contaminated properties can be estimated by recognizing that the yield of the contaminated property will be reduced to an assumed background level over the course of site cleanup. The load reduction resulting from controlling PCBs in building materials during demolition can be estimated by estimating the amount of PCBs in the building, the fraction of those PCBs that would enter the storm drain system in the absence of controls, and the efficiency of control measures applied to the demolished building to prevent such PCBs release.

C.12-10 Limited sampling data from Bay Area structures built between 1950 and 1980 suggest that PCB concentrations in caulks here are similar to those in other parts of North America and Europe. Samples collected in about 1350 buildings in Switzerland constructed between 1950 and 1980 found almost half the buildings contained PCBs in caulk, with most samples containing >100 ppm and 20 percent containing 10,000 ppm or more. In Bay Area samples, 40 percentcontained > 50 ppm PCBs and 20% contained > 10,000 ppm PCBs. The study estimates that certain types of Bay Area structures built 1950-1980 contain a mid-range average of 4.7 kg PCBs per building. An estimated 6300 currently standing non-residential buildings in the MRP area were built between

1954 and1974. The mid-range estimate of the total PCB mass in caulk in these buildings is 10,500 kg[64].

C.12-11 Currently there are no protocols for identifying PCBs-containing structures at the time of demolition so that PCBs do not enter municipal storm drains. Some demolition sites, especially high-profile sites such as hospitals, bridges and sports arenas, comply with federal law (Toxic Substances Control Act) and State regulations (California Code of Regulations Title 22) that require a project proponent to determine the presence of PCBs and other hazardous substances and to follow applicable disposal requirements. Soil sampling data from such demolition projects indicate that significant concentrations of PCBs can be present in site soils. Such PCB-laden sediment, particularly at a demolition site without adequate controls, is transported by vehicle tracking, wind erosion or precipitation runoff to the storm drain. PCBs entering the storm drain system during dry weather are non-stormwater discharges that must be effectively prohibited pursuant to CWA § 402(p)(3)(B)(ii). PCBs that are discharged into storm drain systems and waters of the U.S. through stormwater runoff are appropriate for control in order to make progress in achieving the PCBs TMDL wasteload allocations for urban runoff, pursuant to CWA § 402(p)(3)(B)(iii).

C.12-12 U.S. EPA has developed guidelines, available at its "Steps to Safe Renovation and Abatement of Buildings That Have PCB-Containing Caulk" website, for identifying and removing PCBs in building materials that can help in the effort to manage PCBs so that they do not enter municipal storm drains. In addition, during the Previous Permit term, starting in 2009, the Permittees participated in the grant-funded "PCBs in Caulk Project", which addressed potential impacts of PCBs released into stormwater runoff during demolition or remodeling projects in the San Francisco Bay Area. This project fulfilled the permit requirement to investigate the costs, effectiveness, and technical feasibility of PCBs control measures to minimize the release of PCBs in caulks and sealants to stormwater runoff during demolition or remodeling projects. Products developed through this grant-funded project include a fact sheet for developers; a fact sheet on sampling methods; BMPs to control PCBs in caulk at demolition or renovation sites; a Model Implementation Process to incorporate a requirement to use BMPs into the municipal demolition permitting process; a training strategy to train and deploy municipal staff, such as hazardous material or building inspectors, to ensure proper implementation of BMPs; and a technical memorandum on relevant regulations and policies.

C.12-13 This provision is consistent with a recent U.S. EPA memorandum[65] providing guidance on implementing TMDL WLAs in NPDES stormwater permits.

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[64] Klosterhaus S. and McKee L. et al. 2014. *Polychlorinated Biphenyls in the exterior caulk of San Francisco Bay Area buildings, California, USA.* Environment International 66 (2014) 38–43.

[65] U.S. EPA. November 26, 2014. Revisions to the November 22, 2002 Memorandum "Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs."

Specifically, this provision establishes clear and concrete milestones and deadlines (see C.12.a.iii) for the achievement of specific PCBs load reductions as well as other requirements (see C.12.b-h.), necessary to achieve receiving water limits of this permit term relative to the PCBs TMDL WLAs.

Specific Provision C.12 Requirements

Provision C.12.a. requires Permittees to implement control measures to achieve specific PCBs load reductions. In order to comply with this requirement, Permittees must identify the PCBs control measures and the watersheds and management areas in which these measures will be implemented and a time schedule for implementation.

In the first year, the Permittees have to identify watersheds and management areas and control measures sufficient to achieve the near term load reduction performance criterion (0.5 kg/yr by June 30, 2018). In subsequent years, the Permittees have to report annually any new watersheds and management areas and control measures necessary to achieve the ultimate PCB load reduction performance criterion (3 kg/yr) by June 30, 2020.

Moreover, Permittees must quantitatively demonstrate the load reductions achieved through use of the load reduction accounting scheme described below and/or further developed through the actions required under C.12.b. This provision element is critical to the successful implementation of the urban runoff requirements of the PCBs TMDL. The accountability mechanism for control measure implementation consists of three parts: 1) the identification of control measures and associated watersheds, 2) a commitment to an implementation schedule, and 3) the quantification of load reductions resulting from control measure implementation.

This provision requires that Permittees achieve annual PCBs load reductions totaling 0.5 kg/yr by June 30, 2018, and 3.0 kg/yr by June 30, 2020. These load reductions are achievable with the associated deadlines and are based on an assessment of BMPs and control measures controls to reduce PCBs as further described below.

The PCBs load reductions achieved through implementation of Provision C.12.a can be estimated for a unit of activity for a number of anticipated control measures. The effectiveness and benefits of control measures remain uncertain because of limited implementation experience and relatively scarce data on control measure effectiveness for a range of conditions. However, there are sufficient data to develop a starting point for a reasonable system of estimating load reductions as a function of the scale and intensity of control measure implementation.

A simple approach for estimating the load reductions associated with certain control measures involves use of a land-use pollutant yield. A land-use yield is an estimate of the mass of a contaminant contributed by an area of a particular land-use per unit time. Essentially, different types of land uses yield different amounts of pollutants because land use types differ in their degree of contamination resulting from differing intensities of historical or ongoing use of pollutants in those land uses. PCBs were more heavily used in older industrial areas so older industrial land use areas yield a much higher mass of PCBs per unit area than newer urban land use areas where PCBs were never intensively used.

Permittees submitted land-use mass yields of PCBs in their 2014 Integrated Monitoring Report. When these yields were multiplied by the total area of various land-use categories, the estimated region-wide (the entire region that discharges to the Bay) PCBs load was lower than the load estimated in the PCBs TMDL by approximately a factor of 1.73. Therefore, the land-use yields were multiplied by a factor of 1.73 in order to normalize to the estimated baseline PCBs load in the PCBs TMDL and to agree with recent load estimates from runoff. The resultant (adjusted) mass yields for three land-use types shown below are based on data Permittees collected during the Previous Permit term and provide a reasonable means of establishing the PCBs load reductions for control measures implemented in corresponding areas[66]. Permittees may refine these yields when they submit supporting documentation in their 2016 Annual Report.

- Old Industrial Land Use = 86.5 mg PCBs/acre/year
- Old Urban Land Use = 30.3 mg PCBs/acre/year
- New Urban areas and Other = 3.5 mg PCBs/acre/year
- Open Space = 4.3 mg/acre/year

The land-use yield provides a convenient way to estimate the load reduction of various sorts of control measure strategies. For example, when contaminated areas are **newly or redeveloped**, the pollutant yield of the area will be reduced through a variety of mechanisms (i.e., removal, capping, paving of contaminated sediment). So, the amount of PCBs load reduction can be obtained by multiplying the area of new/redevelopment by the difference in yield (either old industrial minus new urban or old urban minus new urban, whichever pre-development land-use is applicable).

The PCBs load reductions for **retrofits or other treatment controls** (including green infrastructure) can be calculated by multiplying the area treated by the assumed land-use yield of the treated area multiplied by the efficiency factor of the treatment method (using a default value of 70 percent or an efficiency established through documentation of implemented method and reported in annual reports).

For **contaminated private properties** that are referred to the Water Board or other agencies for subsequent remediation, the estimated load reduction can be derived by assuming that the PCBs yield of the source area is reduced over the course of site cleanup. Source areas identified for the purpose of referral tend to have much higher areal yields, based on an analysis of the Ettie Street pump station watershed in Oakland. Information adapted from the IMR suggests that 3975 mg PCBs/acre/year is a reasonable interim estimate for the yield of such contaminated sites (Geosyntec 2015). The cleanups will be assumed to take ten years from the date of referral to the Water Board. The assumed result of the cleanup is that the PCBs yield will be reduced over the course of ten years from 3975 mg PCBs/acre/year to the old urban yield of 30.3 mg PCBs/acre/year, or a reduction of 3940 mg PCBs/acre/yr.

Fifty percent of this load reduction will be credited during this Permit term for properties that are referred to the Water Board during the first three years of the Permit term and for which Permittees implement enhanced operation and maintenance measures in the vicinity of the referred property. Often, contaminated properties have a “halo” of

[66] *PCBs Yield Coefficients for MRP 2.0*. Geosyntec Consultants. September 23, 2015.

contamination, and contaminated sediments in this halo can be transported to receiving waters through the stormwater conveyance system. Further, pollutants from the source area may continue to be transported offsite while remediation occurs. Therefore, enhancing operation and maintenance measures in areas immediately adjacent to the source area while the source property is being remediated is a priority to prevent PCBs transport to receiving waters. If enhanced maintenance measures are not implemented in the immediate vicinity of the referred property, the calculated load reduction will be recognized upon completion of the cleanup project.

PCBs load reductions resulting from implementing control measures to prevent discharge to storm drains of **PCBs in building materials during demolition** will be computed as: the mass of PCBs contained in applicable buildings[67] multiplied by the fraction of PCBs entering stormwater conveyances in the absence of controls multiplied by the effectiveness of controls preventing PCBs from entering stormwater conveyances. Each term in this calculation can be represented by a range of values, and information is limited on some of these terms (particularly the fraction of PCBs entering storm drains). However, reasonable values, derived from information available from Klosterhaus (2011) are:

- Mass of PCBs per building = 5 kg
- Number of regulated buildings demolished = 50
- Average fraction of PCBs that enters MS4s during demolition without controls = 1 percent
- Average effectiveness of controls at preventing PCBs from entering storm drains = 80 percent

Multiplying these parameters suggests that about 2 kg/yr of PCBs loads can be reduced by effectively controlling PCBs during demolition. The actual number of demolitions will vary, but 2 kg represents a reasonable estimate and is the basis for establishing the yearly load reduction credit for controlling the release of PCBs to storm drains from such demolitions. If a Permittee implements a control program consistent with these assumptions, a share of the 2 kg/yr credit, pro-rated by population, will be allocated to that Permittee. Permittees may propose an alternative means (other than population-based) of allocating the permit-area-wide load reduction credit associated with implementing C.12.f with the 2019 Annual Report.

Permittees will also likely employ **enhanced operation and maintenance control measures** to reduce loads of mercury and PCBs. These strategies include: street sweeping, drain inlet cleaning, pump station maintenance, PCBs captured by full trash capture devices, etc. It is not possible to state, in advance, specific parameters to allow for load reduction estimates. However, the load reduction calculation is straightforward. The pollutant load reduction (either baseline or enhanced) is the product of the volume of material collected by the control measure multiplied by the percent of the collected material that is sediment multiplied by the density of that sediment multiplied by the concentration of the pollutant in that sediment. The load reduction credit is then simply

[67] Applicable buildings include buildings (excluding single family residential and wood frame buildings) constructed from 1950 through 1980 with PCBs concentration in caulks/sealants greater than 50 ppm.

the difference between the load reductions achieved with enhanced effort and those achieved with a baseline level of effort (which may be zero if the control measure is new rather than an increased intensity of an existing measure).

PCBs load reduction from other activities can be similarly established and documented through quantification of the amount of material (e.g., sediment or water or other waste) prevented from entering receiving waters multiplied by the concentration of PCBs in that material. The load reduction calculated for all implemented measures shall be summed and compared to the load reduction requirements in Tables 12.1 and 12.2. Permittees can demonstrate compliance with the load reduction requirements by summing the load reduction assigned to each type of activity they undertake. For example, if Permittees meet the Permit requirements for demolitions of regulated buildings (C.12.f) designed to achieve the control effectiveness consistent with the calculation outlined above, then a permit-area-wide load reduction of 2 kg/yr will be applied to the 3 kg/yr by the June 30, 2020, load reduction requirement. Further, Permittees would account for the area treated by green infrastructure, apply the appropriate land use PCB yield, and sum the load reduction over all such treatment installations. Similarly, the calculated load reduction resulting from property referrals and enhanced operation and maintenance can be accounted for using the approach described previously. Summing up all PCBs load reductions from all relevant control measures would constitute the permit-area-wide PCBs load reduction, county-specific, or Permittee-specific PCBs load reduction. Permittees, as a group, are encouraged to implement PCBs controls in the locations with the greatest opportunities for load reduction and be held accountable as a group. However, if the overall load reduction criteria (for all Permittees combined) are not met, the Permit provides an accountability mechanism in the form of load reduction performance criteria for each county in the permit area, calculated according to the proportions used to establish county-specific load allocations in the PCBs TMDL. For example, the load allocation for all Permittees within Alameda County in the PCBs TMDL is 0.5 kg/yr. The estimated baseline load according to the TMDL is 5 kg/yr. This represents achieving a load reduction over 20 years of 4.5 kg/yr (of the 18 kg/yr reduction from urban runoff sources to the Bay overall). However, the Permittees' jurisdictions have an estimated total load reduction responsibility of 14.4 kg/yr, because some of the urban runoff load comes from areas not under the Permittees' jurisdiction. Therefore, the Permittees within Alameda County are responsible for 4.5/14.4 (~ 31.25 %) of the load reductions from the permit area. Applying this same fraction to the required 3,000 g/yr load reduction results in a load reduction for the Alameda County Permittees of 940 g/yr. The load reduction for other counties (e.g., all Contra Costa Permittees combined, all Santa Clara Permittees combined, all San Mateo Permittees combined, and Solano Permittees [Suisun City, Vallejo, Fairfield] combined) can be derived similarly by subtracting the TMDL load allocations from the baseline load estimates and then dividing by 14.4 and then multiplying by either 500 g/yr (for the June 30, 2018, load reductions) or 3,000 g/yr (for the June 30, 2020, load reductions).

Load reduction opportunities almost certainly vary by jurisdiction. Some jurisdictions (e.g., those with a higher proportion of old industrial land use) may have more PCBs-contaminated sites and, hence, greater potential opportunities to implement control measures to reduce loads. Further, the total PCBs load reduction across the entire area

covered under this Permit is relevant to the recovery of San Francisco Bay. Therefore, as long as the total load reductions (500 g/yr by June 30, 2018, and 3 kg/yr by June 30, 2020) are achieved, the load reduction distribution among the counties is much less of a concern.

However, if the permit-areawide total load reduction performance criteria are not achieved, the Permittees in counties meeting the county-level load reduction criteria in the Permit will be deemed in compliance with the performance criteria. If both the permit-area-wide total load reduction criterion and county-specific load reduction criterion are not achieved, those Permittees will be deemed in compliance if they have achieved load reductions consistent with their proportion of the county total established under C.12.b.iii(1). Allocation of the county-wide load reduction responsibility to individual Permittees is based on the fraction of county population in each Permittees' municipality. This is consistent with the assumptions and requirements of the PCBs TMDL in that the permit-area-wide load allocation was distributed to each county based on the proportion of permit-area-wide population contained in each county. Other methods could be used to distribute the county-wide PCBs load reduction performance criteria to individual municipalities (e.g., proportion of county total of certain land-uses associated with PCB presence contained in each municipality). Permittees may propose another alternative as part of reporting on C.12.b.iii(2).

Provision C.12.b. requires Permittees to develop and implement an assessment methodology and data collection program to quantify PCBs loads reduced through implementation of any and all pollution prevention, source control and treatment control efforts required by the provisions of this Permit or load reductions achieved through other relevant efforts not explicitly required by the provisions of this Permit. The default approach for establishing load reductions for various implementation activities is described above. Early in the Permit term (2016), Permittees will submit documentation supporting this default approach for load reduction accounting along with a description of the data to be collected to establish load reduction value. In particular, C.11/12.b.iii(1) requires Permittees to submit specific details showing how they will perform the calculations to account for mercury and PCBs load reductions from all types of control measures for the reduction of these pollutants. This information includes what data will be used to assign treated areas; how to assign land use to select a yield; and how material will be sampled to determine the contaminant concentration (for control measures requiring such information). Permittees should also identify the types of supporting information that will be submitted so that the calculations can be reproduced. As Permittees gain implementation experience and collect information on this implementation, they may request refinement of the accounting system for use in subsequent Permit terms.

Permittees are encouraged to build on the framework developed in response to a Previous Permit requirement and submitted by Permittees in January 2014 in their Integrated Monitoring Report. This could include updating and in some cases extending the framework presented in that document, justifying assumptions and selected parameters used for each type of control measure, and indicating what information will be collected and submitted to calculate the load reduction for each implemented control measure. The accounting scheme for use in this Permit term and summarized above along with the

refined accounting scheme submitted near the end of the permit term (for use in subsequent Permits) must both be submitted for Executive Officer approval.

Many of the legacy sources of PCBs are found in Bay margins contaminated by historical industrial activity. These legacy sources may be contributing to storm drain runoff conveyances, but Permittees may have jurisdictional challenges in addressing the sources in private property. In addition, Permittees are responsible for contamination in public rights of way. Permittees are expected to make diligent efforts both to address contamination on public property and to refer source properties to the Water Board for possible cleanup and abatement.

Provision C.12.c. requires Permittees to implement green infrastructure projects during the term of the Permit to achieve PCBs load reductions of 120 g/year by June 30, 2020. The county-specific responsibilities for this load reduction are shown in Table 12.2 of the Permit. These county-specific green infrastructure load reduction requirements were derived using the same methodology described above for Provision C.12.a.

Some Bay Area drainages contain notably elevated PCBs concentrations in suspended or bedded sediment (e.g., > 500 ppb in bedded sediment). A recent analysis of soil PCBs and mercury data collected in the Bay Area identifies 15 sites where maximum concentrations exceed 3.8 mg/kg for PCBs and 1.6 mg/kg for total mercury. Areas with moderately high PCBs concentrations (e.g., 100-500 ppb) were found throughout areas where historical industrial activity involved use of PCBs (McKee and Yee 2015). Placing green infrastructure in highly- and moderately-contaminated areas will form an important element in achieving the PCBs TMDL-required load reductions. However, green infrastructure implementation is a long-term proposition and there is value in placing green infrastructure across the broader landscape to intercept PCBs before they are discharged to receiving water.

To ensure that Bay Area municipalities are working effectively and expeditiously in implementing appropriate green infrastructure controls to reduce loads of mercury, PCBs, and other pollutants of concern, the Permit requires Permittees to prepare a reasonable assurance analysis that rigorously and quantitatively demonstrates PCBs load reductions of at least 3 kg/yr throughout the permit area will be achieved by 2040 through implementation of green infrastructure throughout the permit area. The effort to prepare a reasonable assurance analysis is described above under C.11.c.

Provision C.12.d. requires Permittees to prepare a plan and schedule for PCBs control measure implementation and corresponding reasonable assurance analysis to quantitatively demonstrate that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations. The Permit requires that this plan must: identify all technically and economically feasible PCBs control measures (including green infrastructure projects) to be implemented; include a schedule according to which these technically and economically feasible control measures will be fully implemented; and provide an evaluation and quantification of the PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency, and significant environmental impacts resulting from their implementation:

The PCBs TMDL anticipated the challenge of achieving the urban runoff load reductions required to meet the TMDL allocations within the twenty-year implementation time frame. The TMDL implementation plan states that

"... achievement of the allocations for stormwater runoff, which is projected to take 20 years, will be challenging. Consequently, the Water Board will consider modifying the schedule for achievement of the load allocations for stormwater runoff provided that dischargers have complied with all applicable permit requirements and accomplished all of the following:

- *A diligent effort has been made to quantify PCBs loads and the sources of PCBs in the discharge;*
- *Documentation has been prepared that demonstrates that all technically and economically feasible and cost-effective control measures recognized by the Water Board have been fully implemented, and evaluates and quantifies the PCBs load reduction of such measures;*
- *A demonstration has been made that achievement of the allocation will require more than the remaining 10 years originally envisioned; and*
- *A plan has been prepared that includes a schedule for evaluating the effectiveness and feasibility of additional control measures and implementing additional controls as appropriate.*"

Provision C.12.d provides the opportunity for Permittees to describe the full suite of actions that will be required to achieve the TMDL along with realistic timelines for this achievement. The load reductions for PCBs are difficult and time-consuming to achieve because of the distribution of sources in the landscape; challenges associated with finding and reducing these existing sources; and unpredictability related to demolition of PCBs containing structures. Further, some part of the expected PCB load reduction will come from long-term implementation of control strategies (like green infrastructure) that extend beyond the current implementation timeframe of the TMDL. The long-term plan and schedule required by this provision will help lay the foundation for an implementation timeframe that is longer than that stated in the TMDL.

Provision C.12.e. requires that Permittees collect samples of caulk and other sealants used in storm drains and between concrete curbs and street pavement and investigate whether PCBs are present in such material and in what concentrations. PCBs are most likely present in material applied during the 1970s, so the focus of the investigations should be on structures installed during this era. The Washington Department of Ecology discovered that PCBs-containing caulk (sealant) was used inside the City of Tacoma's storm drains during a 1970s repair. There is reason to believe that such use was not isolated to this one location. The sampling and analysis required by this Provision C.12 element will count toward partial fulfillment of the monitoring effort aimed at finding PCBs sources (see management information need in C.8.f).

Provision C.12.f. requires Permittees to develop a protocol for controlling PCBs during building demolition so that PCBs are not transmitted to storm drains via vehicle trackout, airborne releases, soil erosion or stormwater runoff during or after demolition. Because this is a new management practice, three years are allotted to working with entities, such as the Bay Air Quality Management District, U.S. EPA, and waste management entities,

to coordinate oversight functions and otherwise develop a coordinated protocol. After the development period, Permittees shall implement the protocol such that PCBs are controlled during the demolition of applicable structures so that they do not enter municipal storm drains. During this Permit term, applicable structures are limited to potential PCB-containing industrial, public, and commercial structures. Single-family residential and wood frame structures are excluded. In future permits, other types of structures and renovations may be included in the protocol.

The Integrated Monitoring Report (IMR)[68] presents estimates of the mass of PCBs per building (constructed or renovated prior to 1979) ranging from 0.6-16 kg and contribution to stormwater ranging from 0.8 to 4000 grams/year. This is one of the largest known sources of PCBs, although it is distributed throughout the region. For a building with 4.7 kg of PCBs and current control measures of medium effectiveness, there may be 280 grams of PCBs released to stormwater during demolition, assuming control measures are only moderately effective. If only control measures of low effectiveness were in place, such a building would release 560 grams PCBs during demolition.

Permittee 2014 Annual Reports, New and Redevelopment Section "Projects Approved" tables (C.3.b.v.(1)) provided a means to gauge the potential number of redevelopment projects involving applicable structures. While these tables are not required to list all the information necessary to determine if applicable structures will be demolished during redevelopment, in some cases enough information is provided. In 6 of the 11 Permittees reviewed, potential PCB-containing structures are planned to be demolished, including one project in which 14 buildings likely built between 1950 and 1980 will be demolished.

Water Board staff also contacted Bay Area waste management entities, such as county recycling and construction debris recovery programs. Brief discussions revealed the following:

- In general, demolition project proponents must submit debris recovery plans to these entities prior to commencing demolition. These plans could be modified to include information on the likelihood and/or actual existence of PCB-containing materials in the structure.
- Waste management entities tend to have technical advisory committees that could advise on appropriate approaches/frameworks for controlling PCBs during demolition so that they do not enter storm drains.
- Applicable structures are a small subset of all demolitions in the Bay Area.
- Some cities use software for recording demolition projects that could be modified by adding a form(s) for applicable structures.
- There are a limited number (approximately 30-40) of construction and debris processing facilities in the Bay Area, and they are listed on county web sites. At least two of these facilities are known PCB-containing sites, although both include metal processing facilities in addition to other debris recycling.
- One waste management entity has produced a video documenting a large-scale demolition project at a former Army Base that had a variety of hazardous

[68] Integrated Monitoring Report Part B: PCB and Mercury Loads Avoided and Reduced via Stormwater (IMR). Prepared by Geosyntec Consultants for the Bay Area Stormwater Management Agencies Association. 2013.

materials to dispose of, including PCBs. Another pointed to You-Tube videos showing how to remove PCB-containing caulk prior to demolition.

These facts (see also C.10, C.11 and C.12 above) indicate that a workable protocol for controlling PCBs during demolition so that they do not enter storm drain systems could be built upon existing demolition requirements and utilize existing information resources.

Some municipalities may have no applicable structures (i.e., the only structures that existed pre-1980 were single-family residential or wood-frame structures). Such Permittees may provide documentation acceptable to the Executive Officer in their 2017 Annual Reports to seek exemption from the requirement to develop a PCBs demolition control program. This allows time for compilation of this documentation, such as historic maps or other historic records, and for determining which Permittees are exempt prior to year the July 1, 2019, requirement to begin implementing the protocols.

Provision C.12.g. There are still uncertainties surrounding the magnitude and nature of PCBs reaching the Bay in urban runoff and the ultimate fate of such PCBs, including biological uptake. Provision C.12.g requires that Permittees ensure that fate and transport studies of PCBs in urban runoff are completed. The specific information needs include understanding the in-Bay transport of PCBs discharged in urban runoff, the sediment and food web PCBs concentrations in margin areas receiving urban runoff, the influence of urban runoff on the patterns of food web PCBs accumulation, especially in Bay margins, and the identification of drainages where urban runoff PCBs are particularly important in food web accumulation.

Provision C.12.h. requires actions that manage human health risk due to mercury and PCBs. These may include efforts to communicate the health risks of eating Bay fish and other efforts aimed at high risk-communities such as subsistence fishers and their families. The risk reduction framework developed in the Previous Permit term, which funded community-based organizations to develop and deliver appropriate communications to appropriately targeted individuals and communities, is an appropriate approach.

C.13. Copper Controls

Chronic and acute site-specific objectives (SSOs) for dissolved copper have been established in all segments of San Francisco Bay. The plan to implement the SSOs and ensure the achievement and ongoing maintenance of the SSOs in the entire Bay includes three types of actions for urban runoff management agencies. These actions are implemented through this Permit as provisions to control urban runoff sources of copper.

The control measures for urban runoff target significant sources of copper identified in a report produced in 2004 for the Clean Estuary Partnership.[69] This report updated information on sources of copper in urban runoff, loading estimates and associated level of uncertainty, and summarized feasible control measures and priorities for further investigation. Accordingly, the Permit provisions target major sources of copper including architectural copper, copper pesticides, and industrial copper use.

Fact Sheet Findings in Support of Provision C.13.

C.13-1 Urban runoff is a conveyance mechanism by which copper reaches San Francisco Bay.

C.13-2 Copper has the reasonable potential to cause or contribute to exceedances of copper water quality standards in San Francisco Bay.

C.13-3 SSOs for dissolved copper have been adopted for all segments of San Francisco Bay.

C.13-4 The Permit requirements to control copper to the MEP are necessary to implement and support ongoing achievement of the SSOs.

C.13-5 One of the major sources of copper to urban runoff has been addressed through passage of Senate Bill 346 in 2010, which requires brake pad manufacturers to reduce the use of copper in brake pads sold in California to no more than 5% by weight by 2021, and no more than 0.5% by 2025. The law also provides an objective process to ensure that any new brake materials meet all applicable safety and performance standards. To make sure that new materials will not cause future environmental problems, the law requires brake manufacturers to screen potential alternatives for their impacts on human health and the environment using the Toxic Information Clearinghouse, and to select less hazardous options.

C.13-6 A scientific uncertainty regarding sediment toxicity was identified during the development of SSOs for copper. Bay sediment copper concentrations are somewhat elevated above the natural background (from native soils). Local soils contain 30- 35 ppm (DW, dry weight) based on deep (> 2 meter) sediment core results for SF Bay. The copper ERL (effects range low) is 34 ppm (DW)

[69] TDC (TDC Environmental), 2004. *Copper Sources in Urban Runoff and Shoreline Activities*. Prepared for the Clean Estuary Partnership.

and the ERM (effect range median) is 240 ppm (DW). Thus, the natural concentration of local soils is very close to the ERL. There has never been an exceedance of the ERM in the 975 samples collected and analyzed through RMP data. The maximum copper sediment concentration ever recorded in RMP samples (94 ppm DW) is well below the LC50 of the amphipod *Eohaustorius estaurius* (534 ppm) or the amphipod crustacean *Hyalella azteca* (260 ppm). Surface sediment copper concentrations have trended lower over the last 20 years according to monitoring in the Bay. The median surface concentration of copper was 40 ppm (DW) during the period 1993-2004 and dropped to 38 ppm in 2005-2014. This reduced concentration occurred despite significant population increases in the Bay Area and despite the fact that much more sampling effort was conducted in the shallower parts of the Bay (where copper concentrations would be expected to be higher due to human activities and urban sources) during the latter period because of a re-design of RMP sampling strategies. There was some evidence of possible copper-related toxicity in the late 1990s, but there has not been additional evidence of this phenomenon. The possible sediment toxicity occurred in the northern portions of San Francisco Bay (Suisun Bay and San Pablo Bay) where sediment copper concentrations are higher. However, the decrease in median sediment copper concentrations in the northern estuary from the time period 1993-2004 (52 ppm DW) to 2005-2014 (45 ppm DW) has been even more pronounced than the reduction for the Bay as a whole. Because there has not been additional evidence of copper sediment toxicity and copper concentrations in surface sediments appear to be decreasing over time, Permit requirements to further investigate copper sediment toxicity in San Francisco Bay were satisfied by information collected under MRP 1.0 and are no longer needed. If more evidence of such toxicity does appear, this requirement may be re-instated.

C.13-7 A scientific uncertainty regarding the olfactory impairment of salmonids was identified during development of SSOs for copper. Exposure to dissolved copper has been shown to cause olfactory impairment at relatively low concentrations in freshwater fish, resulting in an impaired avoidance response to predators. When the SSOs were established, studies were planned to address whether or not this phenomenon occurred in estuarine water. The studies[70] were supported in part through requirements in the Previous Permit and were conducted by David Baldwin of NOAA's Northwest Fisheries Science Center. Dr. Baldwin measured the firing of neurons in response to exposure to odorant chemicals. The studies indicate that salmon in saline or moderately saline water are much less sensitive than salmon in freshwater, and that the potential effect of copper on salmon olfaction is not a concern in the Bay.

[70] David Baldwin, NOAA Fisheries, Northwest Fisheries Science Center, 2015. *Impact of dissolved copper on the olfactory system of juvenile salmon, Phase II: Effect of estuarine salinity on olfactory toxicity.*

Specific Provision C.13. Requirements

Provision C.13.a. Copper is used as an architectural feature in roofs, gutters and downspouts. When these roofs are cleaned with aggressive cleaning solutions, substantial amounts of copper can be liberated. Provision C.13.a for architectural copper involves a variety of strategies ranging from BMPs to prohibition against discharge of these cleaning wastes to the storm drain.

Provision C.13.b. Copper is commonly used as an algaecide in pools, spas, and fountains. Provision C.13.b prohibits discharge to the storm drain of copper-containing wastewater from such amenities.

Provision C.13.c. Some industrial facilities likely use copper or have sources of copper (e.g., plating facilities, metal finishers, and auto dismantlers). This control measure requires municipalities to include these facilities in their inspection program plans.

C.14. Bacteria Controls

The purpose of this provision is to implement the stormwater runoff and dry weather flow (urban runoff) requirements of the San Pedro Creek and Pacifica State Beach Bacteria TMDL (TMDL) and reduce bacteria loads to make substantial progress toward achieving the urban runoff bacteria wasteload allocations established for the TMDL.

Fact Sheet Findings in Support of Provision C.14

C.14-1 This Permit implements the Basin Plan amendment adopted by the Water Board on November 14, 2012, that establishes a TMDL and an Implementation Plan for bacteria in San Pedro Creek and at Pacifica State Beach. The State Water Board and U.S. EPA have also approved this Basin Plan amendment.

C.14-2 The implementation plan requires the City of Pacifica and San Mateo County (the Pacifica and San Mateo Permittees) to implement bacteria control measures, conduct education and outreach to others, and conduct water quality monitoring efforts. Control measures implemented by the Pacifica and San Mateo Permittees shall reduce bacteria in urban runoff to achieve TMDL wasteload allocations.

C.14-3 The TMDL is allocated to all urban runoff, including urban runoff associated with MS4s and Caltrans facilities. The allocations are expressed in terms of allowable exceedances of single sample bacteria water quality objectives for the water contact recreation beneficial use and shall be achieved by August 2021 for Pacifica State Beach and August 2028 for San Pedro Creek.

C.14-4 The Pacifica and San Mateo Permittees may comply with any requirement of this provision through a collaborative effort.

Specific Provision C.14 Requirements

Provision C.14.a. requires the Pacifica and San Mateo Permittees to implement various control measures and education and outreach activities to achieve bacteria load reductions. In order to comply with this requirement, the Pacifica and San Mateo Permittees must implement measures such as: effectively prohibit potential illicit discharges to the storm drain from the sanitary sewer collection system; address bacteria discharges from existing and future commercial horse facilities; install dog waste-clean-up signs, waste bag dispensers, and trash receptacles at high priority areas; develop and implement a visual inspection and clean-up plan for high dog waste accumulation areas; and develop and implement an enhanced public outreach and education campaign for managing pet waste. This provision also requires the Pacifica and San Mateo Permittees to modify or refocus control measure implementation efforts as appropriate.

This provision is critical to the successful implementation of the urban runoff requirements for the TMDL. The accountability mechanism for control measure implementation consists of three parts: 1) the identification of control measures and associated watersheds or locations, 2) a commitment to an implementation schedule, and 3) the quantification of the benefit resulting from control measure implementation.

Provision C.14.b. requires the Pacifica and San Mateo Permittees to conduct a water quality monitoring program to assess attainment of wasteload allocations. The monitoring and reporting requirements of Provision C.14 are authorized under Clean Water Act § 308, 40 C.F.R. §§ 122.26(d)(2), 122.41(h),(j) and (l), 122.42(c), 122.44(i) and 122.48, and Water Code § 13383. In order to comply with this requirement, the Pacifica and San Mateo Permittees are required to monitor bacteria levels in San Pedro Creek and at Pacifica State Beach and analyze, summarize, and report the results of the monitoring to the Water Board. Further, they must provide an annual report of the quantitative analysis of trends in bacteria densities and exceedances of applicable water quality objectives. This provision is necessary to determine whether or not wasteload allocations are being attained, so additional or enhanced measures are implemented, if necessary.

Provision C.14.c. requires the Pacifica and San Mateo Permittees to conduct a water quality monitoring program to 1) better characterize bacteria sources and 2) evaluate the effectiveness of the bacteria control measures. The results of the monitoring shall be reported to the Water Board on an annual basis. The findings from these assessments will be used throughout this and future Permit terms to revise, refocus, and enhance bacteria control measures to make them as effective and efficient as possible. Future permits will be based on an updated assessment of bacteria sources and control measure effectiveness. This provision is necessary to allow the Pacifica and San Mateo Permittees to identify and implement effective BMPs in an efficient manner.

C.15. Exempted and Conditionally Exempted Discharges

Legal Authority

Broad Legal Authority: CWA section 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F), and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B) requires MS4 operators "to detect and remove (or require the discharger to the municipal separate storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer."

Federal NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(1) provides that the Permittees shall prevent all types of illicit discharges into the MS4 except for certain non-stormwater discharges. Illicit discharge means "any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities" (40 CFR 122.26(b)(2)).

Fact Sheet Findings in Support of Provision C.15.

Prohibition A.1. effectively prohibits the discharge of non-stormwater discharges into the storm sewer system. However, certain types of non-stormwater discharges may be exempted from this prohibition if they are unpolluted and do not violate water quality standards. Other types of non-stormwater discharges may be conditionally exempted from Prohibition A.1. if the discharger employs appropriate control measures and BMPs prior to discharge, and monitors and reports on the discharge.

Removal of Conditional Exemption for Planned and Unplanned Discharges of the Potable Water System

The Previous Permit contained requirements for planned and unplanned discharges from the potable water systems owned and/or operated by Permittees who are water purveyors. The discharges were conditionally exempted provided the Permittees complied with the BMP, monitoring, and reporting requirements in the Previous Permit. The requirements were necessary because potable water discharges contain chlorine and chloramines, two very toxic chemicals to aquatic life, and can cause erosion, scouring of stream and creek banks, and sedimentation. The conditional exemption and requirements were included as an interim measure until such time an NPDES permit regulating potable water discharges was adopted. The State Water Board has since adopted the statewide General NPDES Permit for Drinking Water System Discharges to Waters of the United States, Order WQ 2014-0194-DWQ (Potable Water General Permit) on November 18, 2014. Therefore, the conditional exemption and requirements for planned and unplanned discharges from the Permittees' potable water systems is no longer necessary. The Permittees should seek coverage under the Potable Water General Permit for their potable water system discharges. NPDES-permitted discharges, such as those permitted by the Potable Water General Permit, are exempt from Discharge Prohibition A.1.

Specific Provision C.15. Requirements

Provision C.15.a. Exempted Non-Stormwater Discharges. This section of the Permit identifies the types of non-stormwater discharges that are exempted from Discharge Prohibition A.1. if such discharges are unpolluted and do not violate water quality standards. If any exempted non-stormwater discharge is identified as a source of pollutants to receiving waters, the discharge shall be addressed as a conditionally exempted discharge and must meet the requirements of Provision C.15.b.

Provision C.15.b. Conditionally Exempted Non-Stormwater Discharges. This section of the Permit identifies the types of non-stormwater discharges that are conditionally exempted from Discharge Prohibition A.1. if they are identified by Permittees or the Executive Officer as not being sources of pollutants to receiving waters. To eliminate adverse impacts from such discharges, project proponents shall implement appropriate pollutant control measures and BMPs, and where applicable, shall monitor and report on the discharges in accordance with the requirements specified in Provision C.15.b. The intent of Provision C.15.b.'s requirements is to facilitate Permittees in regulating these non-stormwater discharges to the storm drains since the Permittees have ultimate responsibility for what flows in those storm drains to receiving waters. For all planned discharges, the nature and characteristic of the discharge must be verified prior to the discharge so that effective pollution control measures are implemented, if deemed necessary. Such preventative measures are cheaper by far than post-discharge cleanup efforts.

Provision C.15.b.i.(1). Pumped Groundwater from Non Drinking Water Aquifers. These aquifers tend to be shallower than drinking water aquifers and more subject to contamination. The wells must be purged prior to sample collection. Since wells are purged regularly, this section of the Permit requires twice a year monitoring of these aquifers. Discharges of pumped groundwater from nondrinking water aquifers, which are owned and/or operated by Permittees who pump groundwater as drinking water, are conditionally exempted as long as the discharges meet the requirements in this section of the Permit.

Provision C.15.b.i.(2). Pumped Groundwater, Foundation Drains, and Water from Crawl Space Pumps and Footing Drains. This section of the Permit encourages these types of discharges to be directed to landscaped areas or bioretention units, when feasible. If the discharges cannot be directed to vegetated areas, it requires testing to determine if the discharge is uncontaminated. Uncontaminated discharges shall be treated, if necessary, to meet specified discharge limits for turbidity and pH.

Provision C.15.b.ii. Air Conditioning Condensate. Small air conditioning units are usually operated during the warm weather months. The condensate from these units is uncontaminated and unlikely to reach a storm drain or waters of the State because it tends to be low in volume and tends to evaporate or percolate readily. Therefore, condensate from small air conditioning units should be discharged to landscaped areas or the ground. Commercial and industrial air conditioning units tend to produce year-round continuous flows of condensate. It may be difficult to direct a continuous flow to a landscaped area large enough to accommodate the volume. While the

condensate tends to be uncontaminated, it picks up contaminates on its way to the storm drain and/or waters of the State and can contribute to unnecessary dry weather flows. Therefore, discharges from new commercial and industrial air conditioning units should be discharged to landscaped areas, if they can accommodate the continuous volume, or to the sanitary sewer, with the local sanitary sewer agency's approval. If none of these options are feasible, air conditioning condensate can be directly discharged into the storm drain. If descaling or anti-algal agents are used to treat the air conditioning units, residues from these agents must be properly disposed of.

Provision C.15.b.iii. Emergency Discharges of the Potable Water. Potable water discharges contribute pollution to water quality in receiving waters because they contain chlorine or chloramines, two very toxic chemicals to aquatic life. Potable water discharges can cause erosion and scouring of stream and creek banks, and sedimentation can result if effective BMPs are not implemented. This section of the Permit acknowledges that in cases of emergency discharge, such as from firefighting and disasters, priority of efforts shall be directed toward life, property, and the environment, in that order. Therefore, Permittees are required to implement BMPs that do not interfere with immediate emergency response operations or impact public health and safety. Reporting requirements for such events shall be determined by Water Board staff on a case-by-case basis.

Provision C.15.b.iv. Individual Residential Car Washing. Soaps and automotive pollutants such as oil and metals can be discharged into storm drains and waterbodies from individual residential car washing activities. However, it is not feasible to prohibit individual residential car washing because it would require too much resources for the Permittees to regulate the prohibition. This section of the Permit requires Permittees to encourage residents to implement BMPs such as directing car washwaters to landscaped areas, using as little detergent as possible, and washing cars at commercial car washing facilities.

Provision C.15.b.v. Swimming Pool, Hot tub, Spa, and Fountain Water Discharges. These types of discharges can contain high levels of chlorine and copper. Permittees shall prohibit the discharge of such waters that contain chlorine residual, copper algaecide, filter backwash, or other pollutants to the storm drains or to waterbodies. High flow rates into the storm drain or a waterbody could cause erosion and scouring of the stream or creek banks. These types of discharges should be directed to landscaped areas large enough to accommodate the volume or to the sanitary sewer, with the local sanitary sewer's approval. If these discharge options are not feasible and the swimming pool, hot tub, spa, or fountain water discharges must enter the storm drain, they must be dechlorinated to non-detectable levels of chlorine and they must not contain copper algaecide. Flow rate should be regulated to minimize downstream erosion and scouring. We strongly encourage local sanitary sewer agencies to accept these types of non-stormwater discharges, especially for new and rebuilt ones where a connection could be achieved with marginal effort. This provision also requires Permittees to coordinate with local sanitary agencies in these efforts.

Provision C.15.b.v.i. Irrigation Water, Landscape Irrigation, and Lawn or Garden Watering. Fertilizers and pesticides can be washed off of landscaping and discharged into storm drains and waterbodies. However, it is not feasible to prohibit excessive irrigation because it would require too much resource for the Permittees to regulate such a prohibition. It is also not feasible for individual Permittees to ban the use of fertilizers and pesticides. This section of the Permit requires Permittees to promote and/or work with potable water purveyors to promote measures that minimize runoff and pollutant loading from excess irrigation, such as conservation programs, outreach regarding overwatering and less toxic options for pest control and landscape management, the use of drought tolerant and native vegetation, and to implement appropriate illicit discharge response and enforcement for ongoing, large-volume landscape irrigation runoff to the storm drains.

C.16. Discharges to Areas of Special Biological Significance

Legal Authority

Broad Legal Authority: CWA section 402(p)(3)(B)(ii-iii), CWC sections 13377 and 13263, 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F), and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority:
In 1972, the State Water Board adopted the Water Quality Control Plan for Ocean Waters of California, California Ocean Plan (Ocean Plan). The State Water Board adopted the most recent amendment to the Ocean Plan on October 16, 2012, and the plan was subsequently approved by the State Office of Administrative Law and U.S. EPA. The State Water Board is responsible for reviewing the Ocean Plan water quality standards and for modifying and adopting standards in accordance with CWA section 303(c)(1) and CWC section 13170.2. Pursuant to CWA sections 13263 and 13377, this Permit implements the Ocean Plan. In accordance with the Ocean Plan, the State Water Board granted an exception to the prohibition of stormwater discharges to Areas of Special Biological Significance (ASBSs), as discussed further below.

Fact Sheet Findings in Support of Provision C.16.

The Ocean Plan prohibits the discharge of waste to designated ASBSs. ASBSs are designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. On March 20, 2012, the State Water Board approved Resolution No. 2012-0012, approving a general exception to the Ocean Plan prohibition against discharges to ASBSs for certain nonpoint source discharges and NPDES-permitted municipal storm water discharges (ASBS Exception), as long as those discharges are covered under an appropriate authorization to discharge, such as this Order and comply with the Special Protections contained in Attachment B (Special Protections) to that resolution, among other requirements. The ASBS Exception was subsequently amended by State Water Board Resolution No. 2012-0031, which required pollutant reductions to be achieved within six years, in accordance with ASBS Compliance Plans. This provision applies to discharges from the County of San Mateo into the James V. Fitzgerald Marine Reserve ASBS. The provision authorizes the County of San Mateo's stormwater discharge as set forth in the provision and implements the Ocean Plan and the exceptions granted under it by the State Water Board to allow the County of San Mateo to discharge stormwater into the ASBS. The requirements of the Provision are from the ASBS Exception and its Special Protections, which are incorporated into the Order as Attachment E.

Attachment G: Standard NPDES Stormwater Permit Provisions

The following legal authority applies to Attachment J:

Broad Legal Authority: CWA sections 402(p)(3)(B)(ii-iii), CWC section 13377, and federal NPDES regulations 40 CFR 122.26(d)(2)(i)(B, C, D, E, and F) and 40 CFR 122.26(d)(2)(iv).

Specific Legal Authority: Standard provisions, reporting requirements, and notifications are consistent to all NPDES permits and are generally found in federal NPDES regulation 40 CFR 122.41.

Attachment G includes Standard Provisions. These Standard Provisions ensure that NPDES stormwater permits are consistent and compatible with USEPA's federal regulations. Some Standard Provision sections specific to publicly owned sewage treatment works are not included in Attachment G.

Fact Sheet Attachment C10

303(d) Trash Resolution and Staff Report February 2009

Available
at http://www.waterboards.ca.gov/sanfranciscobay/board_decisions/adopted_orders/2009/R2-2009-0008.pdf

ATTACHMENT B

Provision C.3.b.
Sample Reporting Table

Provision C.3.b. Sample Reporting Table
Regulated Projects Approved During the Reporting Period 07/15 to 06/16
City of Eden Annual Report FY 2015-16

Project Name, Project Number, Location, Street Address,	Name of Developer, Project Phase No.,[1] Project Type & Description	Project Watershed[2]	Total Site Area, Total Area of Land Disturbed	Total New and/or Replaced Impervious Surface Area[3]	Total Pre- and Post-Project Impervious Surface Area[4]	Status of Project[5]	Source Control Measures	Site Design Measures	Treatment Systems Installed[6]	Operation & Maintenance Responsibility Mechanism	Hydraulic Sizing Criteria	Alternative Compliance Measures[7,8]	HM Controls[9,10]
Private Projects													
Nirvana Estates; Project #05-122; Property bounded by Paradise Lane, Serenity Drive, and Eternity Circle; Eden, CA	Heavenly Homes; Phase 1; Construction of 156 single-family homes and 45 townhomes with commercial shops and underground parking.	Runoff from site drains to Babbling Brook	25 acres site area, 21 acres disturbed	20 acres new	20 acres post-project	Application submitted 12/29/14, Application deemed complete 1/30/15, Project approved 7/16/15	Stenciled inlets, street sweeping, covered parking, car wash pad drains to sanitary sewer	Pervious pavement for all driveways, sidewalks, and commercial plaza	vegetated swales, detention basins,	Conditions of Approval require Homeowners Association to perform regular maintenance. Written record will be made available to City inspectors.	WEF Method	n/a	Contra Costa sizing charts used to design detention basin at Peace Park. Also contributed to in-stream projects in Babbling Brook
Barter Heaven; Project #05-345; Shoppers Lane & Bargain Avenue; 14578 Shoppers Lane, Eden, CA	Deals Galore Development Co.; Demolition of strip mall and parking lot and construction of 500-unit 5-story shopping mall with underground parking and limited outdoor parking.	Runoff from site drains to Bargain River	5 acres site area, 3 acres disturbed	1 acre new, 2 acres replaced	3.5 acres pre-project, 4.5 acres post-project	Application submitted 7/9/15, Application deemed complete 8/2/15, Project approved 12/12/15	Stenciled inlets, trash enclosures, underground parking, street sweeping	One-way aisles to minimize outdoor parking footprint; roof drains to planter boxes	tree wells with bioretention; planter boxes with bioretention	Conditions of Approval require property owner (landlord) to perform regular maintenance. Written record will be made available to City inspectors.	BMP Handbook Method	$ 250,000 paid to Renew Regional Project sponsored by Riverworks Foundation, 243 Water Way, Eden, CA 408-345-6789	Renew Project includes treatment and HM Controls

Provision C.3.b. Sample Reporting Table
Regulated Projects Approved During the Reporting Period 07/15 to 06/16
City of Eden Annual Report FY 2015-16

Project Name, Project Number, Location, Street Address,	Name of Developer, Project Phase No.,[1] Project Type & Description	Project Watershed[2]	Total Site Area, Total Area of Land Disturbed	Total New and/or Replaced Impervious Surface Area[3]	Total Pre- and Post-Project Impervious Surface Area[4]	Status of Project[5]	Source Control Measures	Site Design Measures	Treatment Systems Installed[6]	Operation & Maintenance Responsibility Mechanism	Hydraulic Sizing Criteria	Alternative Compliance Measures[7,8]	HM Controls[9,10]
New Beginnings; Project No. #05-456; Hope Street & Chance Road; 567 Hope Boulevard, Eden, CA	Fresh Start Corporation; Demolition of abandoned warehouse and construction of a 5-story building with 250 low-income rental housing units.	Runoff from site drains to Poor Man Creek	5 acres site area, 100,000 ft^2 disturbed	1 acre replaced	2 acres pre-project, 1 acre post-project	Application submitted 2/9/16, Application deemed complete 4/10/16; Project approved 6/30/16	Trash enclosures, underground parking, street sweeping, car wash pad drains to sanitary sewer	roof drains to landscaping	parking runoff flows to six bioretention units/gardens	Conditions of Approval require property owner (landlord) to perform regular maintenance. Written record will be made available to City inspectors.	BMP Handbook Method	n/a	n/a
Public Projects													
Gridlock Relief, Project No. #05-99, ABC Blvd between Main and Huett Streets, Eden, CA	City of Eden. Widening of ABC Blvd from 4 to 6 lanes	Runoff from site drains to Congestion River	6 acres site area, 3 acres disturbed	2 acres new, 1 acre replaced	4 acres pre-project, 6 acres post-project	Application submitted 7/9/15, Application deemed complete 10/6/15, Project approved 12/9/15, Construction scheduled to begin 7/10/16	none	ABC Blvd sloped to drain runoff into landscaped areas in median	Runoff leaving underdrain system of landscaped median is pumped to bioretention gardens along either side of ABC Blvd	Signed statement from City of Eden assuming post-construction responsibility for treatment BMP maintenance.	WEF Method	n/a	BAHM used to design and size stormwater treatment units so that increased runoff is detained.

Sample Reporting Table C.3.b. Footnotes

1. If a project is being constructed in Phases, use a separate row entry for each Phase.
2. State the watershed(s) that the Regulated Project drains to. Optional but recommended: Also state the downstream watershed(s).
3. State both the total new impervious surface area and the total replaced impervious surface area, as applicable.
4. For redevelopment projects state both the pre-project impervious surface area and the post-project impervious surface area.
5. State project application date; application deemed complete date; and final, major, staff-level discretionary review and approval date.
6. List stormwater treatment system(s) installed onsite or at a joint stormwater treatment system facility.
7. For Alternative Compliance at an offsite location in accordance with Provision C.3.e.i.(1), on a separate page, give a discussion of the alternative compliance site including the information specified in Provision C.3.b.iv.(2)(m)(i) for the offsite project.
8. For Alternative Compliance by paying in-lieu fees in accordance with Provision C.3.e.i.(2), on a separate page, provide the information specified in Provision C.3.b.iv.(2)(m)(ii) for the Regional Project.
9. If HM control is not required, state why not.
10. If HM control is required, state control method used (e.g., method to design and size device(s) or method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), biodetention unit(s), regional detention basin, or in-stream control).

Instructions for Provision C.3.b. Sample Reporting Table

1. **Project Name, Number, Location, and Street Address** – Include the following information:
   - Name of the project
   - Number of the project (if applicable)
   - Location of the project with cross streets
   - Street address of the project (if available)

2. **Name of Developer, Project Phase Number, Project Type, and Project Description** – Include the following information:
   - Name of the developer
   - Project phase name and/or number (only if the project is being developed in phases) – each phase should have a separate row entry
   - Type of development (i.e., new and/or redevelopment)
   - Description of development (e.g., 5-story office building, residential with 160 single-family homes with five 4-story buildings to contain 200 condominiums, 100 unit 2-story shopping mall, mixed use retail and residential development (apartments), industrial warehouse)

3. **Project Watershed**
   - State the watershed(s) that the Project drains into
   - Optional but recommended: Also state the downstream watershed(s)

4. **Total Site Area and Total Area of Land Disturbed** – State the total site area and the total area of land disturbed.

5. **Total New and/or Replaced Impervious Surface Area**
   - State the total new impervious surface area
   - State the total replaced impervious surface area, as applicable

6. **Total Pre- and Post-Project Impervious Surface Area** – For redevelopment projects, state both the pre-project impervious surface area and the post-project impervious surface area.

7. **Status of Project –** Include the following information:
   - Project application submittal date
   - Project application deemed complete date
   - Final, major, staff-level discretionary review and approval date

8. **Source Control Measures** – List all source control measures that have been or will be included in the project.

9. Site Design Measures – List all site design measures that have been or will be included in the project.

10. Treatment Systems Installed – List all post-construction stormwater treatment system(s) installed onsite and/or at a joint stormwater treatment system facility.

11. Operation and Maintenance Responsibility Mechanism – List the legal mechanism(s) that have been or will be used to assign responsibility for the maintenance of the post-construction stormwater treatment systems.

12. Hydraulic Sizing Criteria Used – List the hydraulic sizing criteria used for the Project.

13. Alternative Compliance Measures

- **Option 1: LID Treatment at an Offsite Location (Provision C.3.e.i.(1))** – On a separate page, give a discussion of the alternative compliance project including the information specified in Provision C.3.b.v.(1)(m)(i) for the offsite project.
- **Option 2: Payment of In-Lieu Fees (Provision C.3.e.i.(2))** – On a separate page, provide the information specified in Provision C.3.b.v.(1)(m)(ii).

14. HM Controls

- If HM control is not required, state why not
- If HM control is required, state control method used (e.g., method to design and size device(s), method(s) used to meet the HM Standard, and description of device(s) or method(s) used, such as detention basin(s), biodetention unit(s), regional detention basins, or in-stream control)

ATTACHMENT C

Provision C.3.g.
Hydromodification Applicability Map

Attachment A:
HMP susceptibility map

Alameda Countywide
Clean Water Program
November 13, 2006

LEGEND (see text also)

- Major highways
- Major watersheds
- County boundary
- Streets

Channel type

- Natural creek or stream (susceptible)
- Earthen channel or connector
- Engineered channel - materials unknown
- Engineered channel - concrete
- Enclosed pipe or culvert

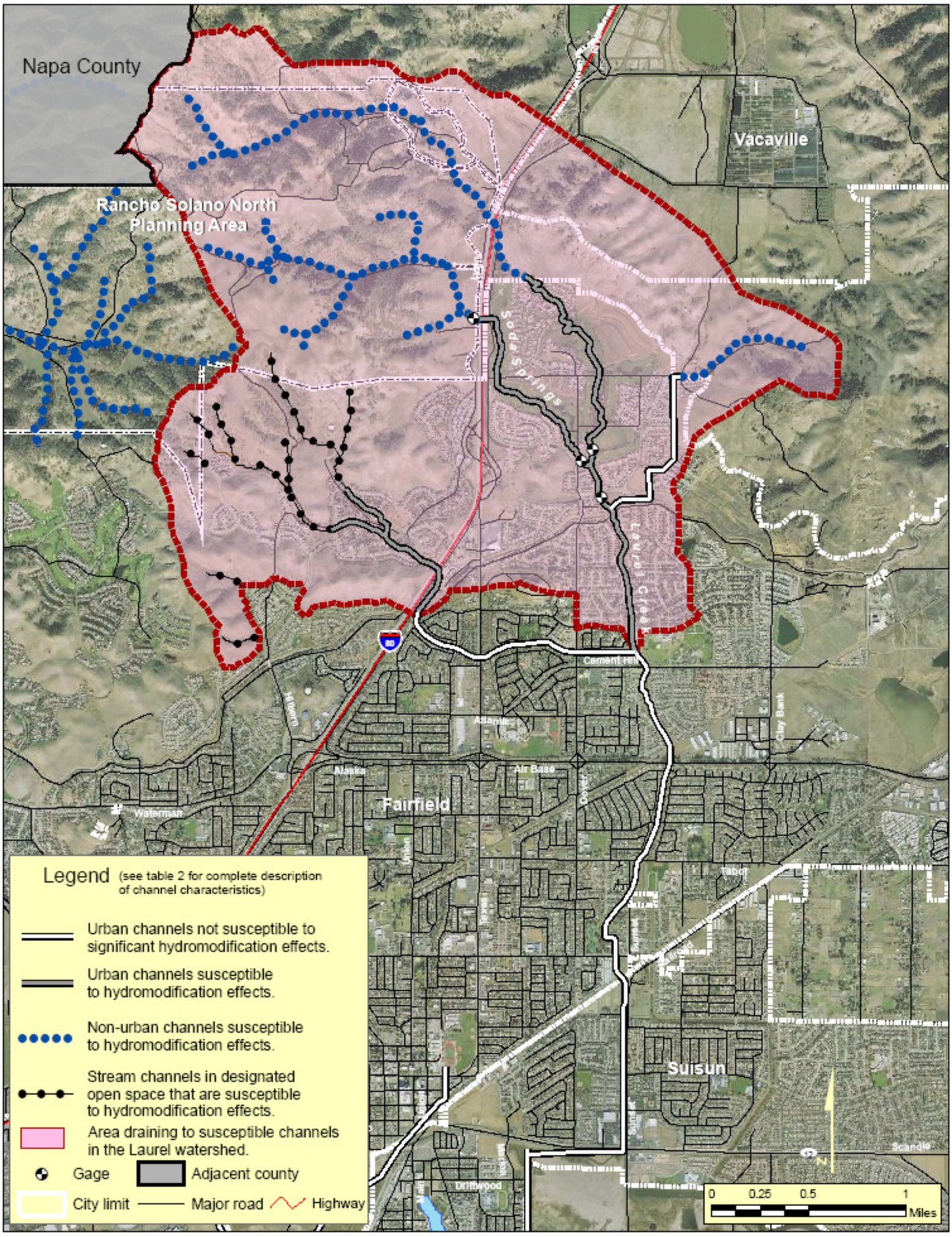
- Special consideration - San Lorenzo & Alameda Creeks
- Special consideration - Codornices Creek
- Hill or high slope region (susceptible)
- Tidally influenced / depositional - exempt
- Not included in HMP

Data sources:
Alameda County Flood Control and Water Conservation District; ACCWP;
Zone 7 Water Agency; U.S. Census Bureau; U.S. Geological Survey;
William Lettis Associates (Oakland Museum creek and watershed mapping project);
Balance Hydrologics and EIP Associates (Proposed test of the approach for the
ACCWP HMM Preliminary Map, July 2003)

N
W E
S

2 0 2 4 6 Miles

Contra Costa County
Alameda County
Contra Costa County
Alameda County
Alameda County
Santa Clara County
Alameda County
Santa Clara County
Alameda County
San Joaquin County



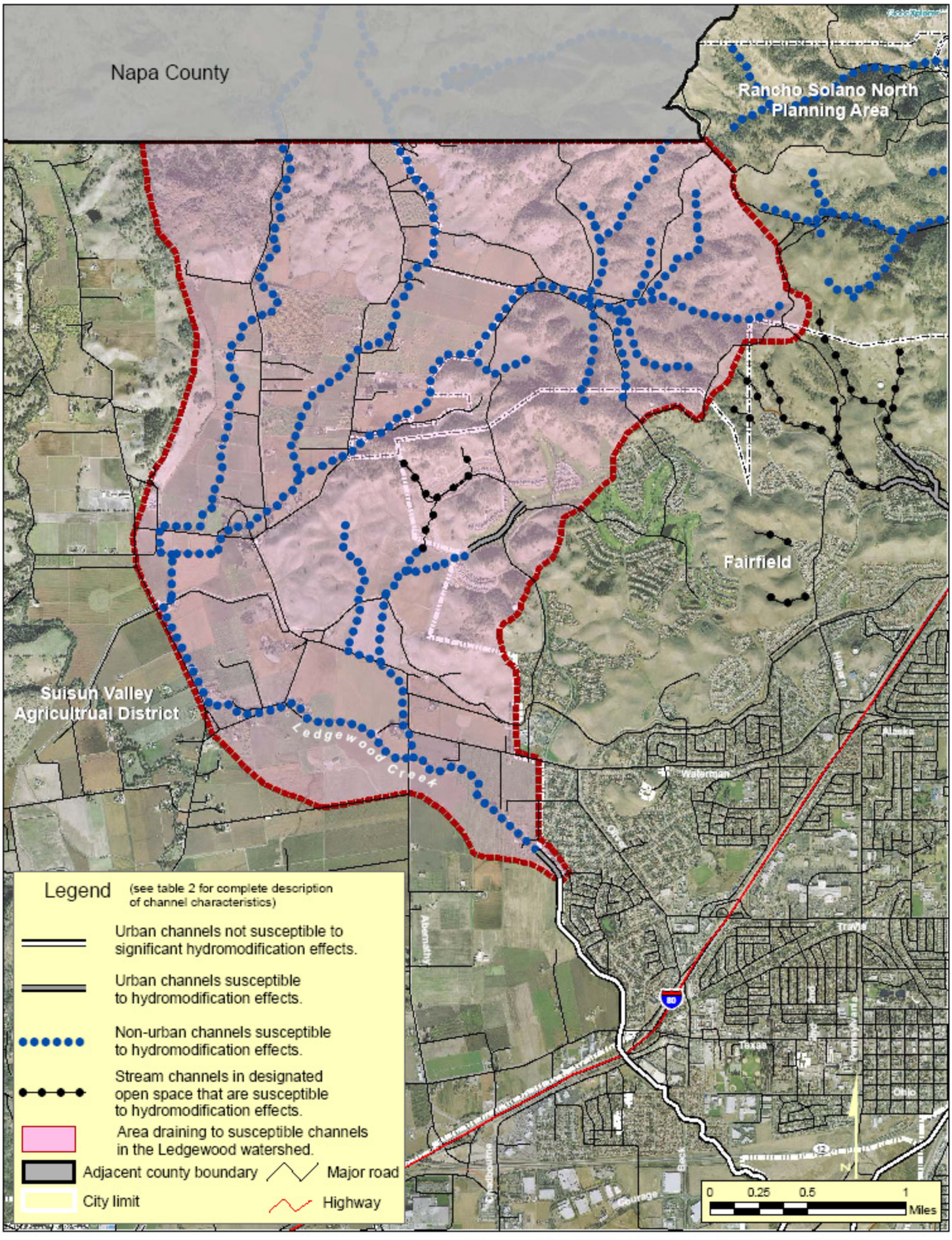
Source: Basemap data provided by Fairfield-Suisun Sewer District. Note that the roads layer does not include the most recently urbanized areas (north of Cement Hill Road, for example).

Balance Hydrologics, Inc.

Figure 2. Map showing HMP channel Classification for the Laurel Creek watershed. The mid- to upper reaches include all channels within the watershed that are susceptible to hydromodification effects (dotted and gray-shaded channels on this map). Hydromodification controls are not required for projects that drain directly to non-susceptible urban channels.

W:\Projects\204126 Fairfield HMP\204003\204126_Figure2_edits.mxd

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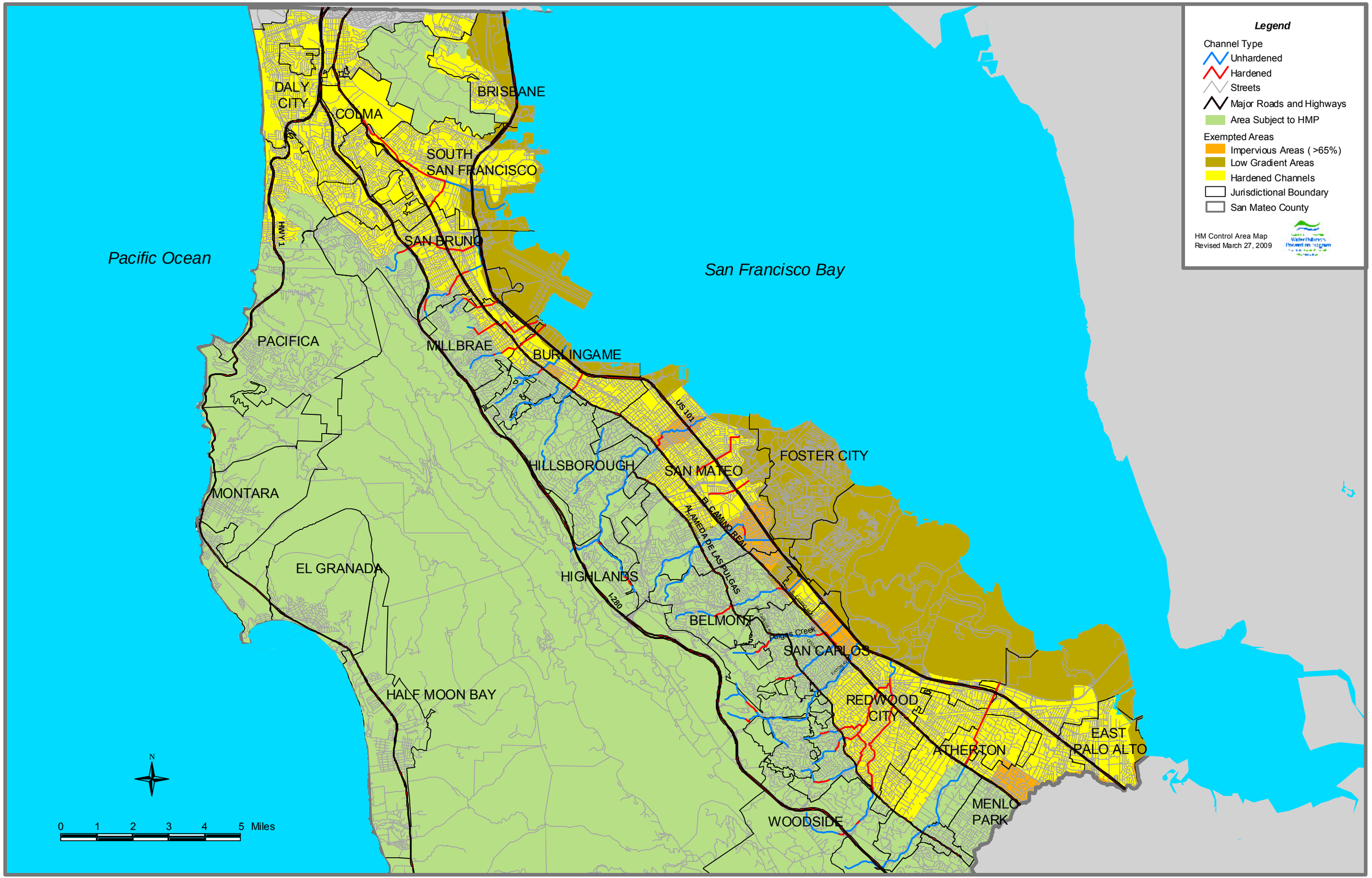
Basemap data provided by Fairfield-Suisun Sewer District. Note that the roads layer does not include the most recently urbanized areas, as shown in the aerial photo.

Balance Hydrologics, Inc.

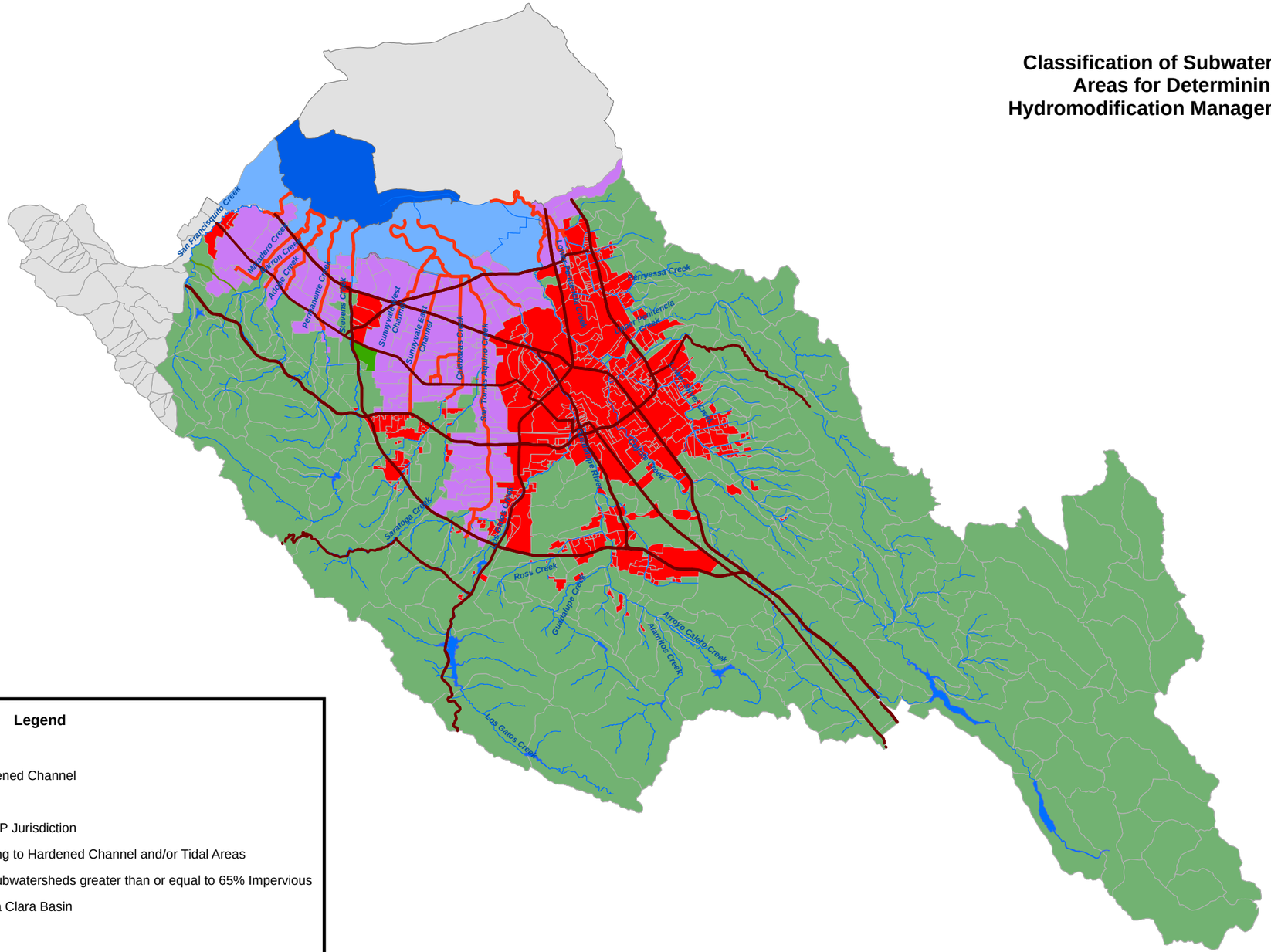
Figure 3. Map showing HMP channel Classification for the Ledgewood Creek watershed. The mid- to upper reaches include all channels within the watershed that are susceptible to hydromodification effects (dotted and gray-shaded channels on this map), however areas outside the City of Fairfield are not included in this permit unless annexed by the city. The non-developed areas within the current city limits are designated open space in relatively steep terrain, and are unlikely to be converted to urban areas however the HMP still applies in these areas.

W:\Projects\204126 Fairfield HMP\204003\204126_Figure3_edits.mxd

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Legend
Channel Type
Unhardened
Hardened
Streets
Major Roads and Highways
Area Subject to HMP
Exempted Areas
Impervious Areas (>65%)
Low Gradient Areas
Hardened Channels
Jurisdictional Boundary
San Mateo County
HM Control Area Map
Revised March 27, 2009
Pacific Ocean
San Francisco Bay
DALY CITY
COLMA
BRISBANE
SOUTH SAN FRANCISCO
SAN BRUNO
HWY 1
PACIFICA
MILLBRAE
BURLINGAME
US 101
FOSTER CITY
SAN MATEO
HILLSBOROUGH
EL CAMINO REAL
ALAMEDA DE LAS PULGAS
MONTARA
EL GRANADA
HIGHLANDS
I-280
BELMONT
San Carlos Creek
Pulgas Creek
SAN CARLOS
HALF MOON BAY
REDWOOD CITY
ATHERTON
EAST PALO ALTO
MENLO PARK
WOODSIDE
N
0 1 2 3 4 5 Miles

Classification of Subwatersheds and Catchment Areas for Determining Applicability of Hydromodification Management (HM) Requirements



Legend

- Major Roads
- Continuously Hardened Channel
- Major Creeks
- Outside SCVURPPP Jurisdiction
- Catchments Draining to Hardened Channel and/or Tidal Areas
- Catchments and Subwatersheds greater than or equal to 65% Impervious
- Reservoirs in Santa Clara Basin
- Baylands
- Subwatersheds less than 65% Impervious

Revision Date: November 2010

N

0 0.5 1 2 3 4 5 Miles

This map contains revisions to the March 2009 version to reflect updated impervious surface data and/or catchment boundaries in the Cities of San Jose, Sunnyvale, Mountain View, and Milpitas, as described in the report to the Water Board dated October 14, 2010, consistent with the HM applicability criteria set forth in Attachment F, Section 4 of the MRP.

Legend

- HMP Boundary
- Fully Hardened Channels
- Non-Hardened Channels (Non-Tidal)
- Non-Hardened Channels (Tidal)
- Storm Drain System
- Open Water
- Areas Draining to Continuously Hardened Conveyances to the Bay
- HMP Applicable Areas
- Subcatchments with greater than or equal to 65% Impervious
- Baylands

N

0 1.25 2.5 3.75 Miles

P:\GIS\Vallejo_HMP\Projects\Figure3-1.mxd

HMP Applicability Map

Vallejo HMP

Geosyntec consultants

WW1538 | April 2013

Figure 3-1

ATTACHMENT D

Provision C.8.
Standard Monitoring Provisions

All monitoring activities shall meet the following requirements:

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. [40 CFR 122.41(j)(1)]
2. Permittees shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, and copies of all reports required by this Order for a period of at least five (5) years from the date of the sample, measurement, report, or application. This period may be extended by request of the Water Board or USEPA at any time and shall be extended during the course of any unresolved litigation regarding this discharge. [40 CFR 122.41(j)(2), CWC section 13383(a)]
3. Records of monitoring information shall include [40 CFR 122.41(j)(3)]:
   a. The date, exact place, and time of sampling or measurements;
   b. The individual(s) who performed the sampling or measurements;
   c. The date(s) analyses were performed;
   d. The individual(s) who performed the analyses;
   e. The analytical techniques or methods used; and,
   f. The results of such analyses.
4. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four years, or both. [40 CFR 122.41(j)(5)]
5. Calculations for all limitations that require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the monitoring Provisions. [40 CFR 122.41(l)(4)(iii)]
6. All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services or a laboratory approved by the Executive Officer.
7. For priority toxic pollutants that are identified in the California Toxics Rule (CTR) (65 Fed. Reg. 31682), the Permittees shall instruct their laboratories to establish calibration standards that are equivalent to or lower than the Minimum Levels (MLs) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP). If a Permittee can demonstrate that a particular ML is not attainable, in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure (assuming that all the method specified sample weights, volumes, and processing steps have been followed) may be used instead of the ML listed in Appendix 4 of the SIP. The Permittee must submit documentation from the laboratory to the Water Board for approval prior to raising the ML for any priority toxic pollutant.

8. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than six months per violation, or by both. [40 CFR 122.41(k)(2)]

9. If a Permittee monitors any pollutant more frequently than required by the Permit, unless otherwise specified in the Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the reports requested by the Water Board. [40 CFR 122.41(l)(4)(ii)]

ATTACHMENT E

Supporting Information for Provision C.10.

Permittee 2009 Mapped Acreages of Trash Generation Rates

Minimum Full Trash Capture Area

Minimum Trash Hot Spots to be Annually Cleaned

And

Example Trash Generation Rate Map

Table 1. Trash Generation Areas Mapped as of June 2015

County	Permittee	Trash Generation Category (acres) as presented in Long-Term Trash Reduction Plans				
		Low	Moderate	High	Very High	Total
Alameda	Alameda	3,729	1,496	263	10	**5,498**
Alameda	Alameda County	229,012	2,434	347	-	**231,793**
Alameda	Albany	555	305	119	12	**991**
Alameda	Berkeley	2,792	2,317	763	216	**6,088**
Alameda	Dublin	6,498	859	289	-	**7,645**
Alameda	Emeryville	68	351	171	125	**715**
Alameda	Fremont	30,166	6,465	740	-	**37,372**
Alameda	Hayward	10,745	7,008	1,395	165	**19,312**
Alameda	Livermore	11,355	3,325	534	-	**15,214**
Alameda	Newark	2,918	1,816	631	25	**5,391**
Alameda	Oakland	14,432	5,663	4,860	3,465	**28,420**
Alameda	Piedmont	977	109	1	-	**1,086**
Alameda	Pleasanton	13,172	1,416	176	-	**14,765**
Alameda	San Leandro	2,818	4,044	790	77	**7,729**
Alameda	Union City	10,234	1,660	228	-	**12,122**
Contra Costa	Concord	10,832	2,415	678	72	**13,997**
Contra Costa	Contra Costa County	174,854	3,707	1,717	118	**180,396**
Contra Costa	Danville	11,282	106	3	-	**11,391**
Contra Costa	El Cerrito	1,817	311	169	4	**2,301**
Contra Costa	Hercules	3,753	188	12	-	**3,952**
Contra Costa	Lafayette	9,252	245	1	-	**9,498**
Contra Costa	Martinez	5,004	1,777	93	1	**6,875**
Contra Costa	Moraga	5,711	92	125	-	**5,929**
Contra Costa	Orinda	7,764	232	50	-	**8,046**
Contra Costa	Pinole	2,827	136	171	-	**3,134**
Contra Costa	Pittsburg	5,824	2,892	210	132	**9,058**

County	Permittee	Trash Generation Category (acres) as presented in Long-Term Trash Reduction Plans				
		Low	Moderate	High	Very High	Total
Contra Costa	Pleasant Hill	2,873	1,080	371	22	**4,346**
Contra Costa	Richmond	10,704	4,538	1,774	269	**17,285**
Contra Costa	San Pablo	325	682	481	72	**1,560**
Contra Costa	San Ramon	10,536	1,184	-	-	**11,720**
Contra Costa	Walnut Creek	11,329	963	115	-	**12,407**
San Mateo	Atherton	2,984	230	-	-	**3,214**
San Mateo	Belmont	2,517	240	62	-	**2,820**
San Mateo	Brisbane	1,220	473	60	21	**1,775**
San Mateo	Burlingame	1,964	592	99	-	**2,654**
San Mateo	Colma	1,026	122	74	4	**1,225**
San Mateo	Daly City	2,553	1,015	407	-	**3,975**
San Mateo	East Palo Alto	97	879	356	97	**1,428**
San Mateo	Foster City	2,187	109	-	-	**2,296**
San Mateo	Half Moon Bay	3,657	187	51	-	**3,895**
San Mateo	Hillsborough	3,944	7	-	-	**3,950**
San Mateo	Menlo Park	4,811	292	3	-	**5,106**
San Mateo	Millbrae	1,512	369	79	-	**1,959**
San Mateo	Pacifica	7,321	472	104	-	**7,898**
San Mateo	Portola Valley	5,786	5	-	-	**5,790**
San Mateo	Redwood City	7,128	398	1,576	398	**9,502**
San Mateo	San Bruno	2,065	965	57	-	**3,088**
San Mateo	San Carlos	2,584	604	78	-	**3,265**
San Mateo	San Mateo	4,340	2,343	302	-	**6,985**
San Mateo	San Mateo County	172,050	272	362	-	**172,683**
San Mateo	South San Francisco	2,724	2,321	337	-	**5,382**
San Mateo	Woodside	6,989	2	-	-	**6,991**
Santa Clara	Campbell	2,335	1,133	273	-	**3,741**
Santa Clara	Cupertino	5,446	1,161	274	-	**6,881**
Santa Clara	Los Altos	3,966	10	14	-	**3,990**
Santa Clara	Los Altos Hills	5,377	6	-	-	**5,383**
Santa Clara	Los Gatos	6,275	698	-	-	**6,973**
Santa Clara	Milpitas	5,065	3,002	98	2	**8,167**

County	Permittee	Trash Generation Category (acres) as presented in Long-Term Trash Reduction Plans				
		Low	**Moderate**	**High**	**Very High**	**Total**
Santa Clara	Monte Sereno	1,018	9	-	-	**1,027**
Santa Clara	Mountain View	3,882	2,626	460	-	**6,968**
Santa Clara	Palo Alto	12,592	1,539	53	-	**14,184**
Santa Clara	San Jose	73,366	21,823	5,709	549	**101,447**
Santa Clara	Santa Clara	5,217	4,855	841	12	**10,925**
Santa Clara	Santa Clara County	380,316	678	1,123	-	**382,117**
Santa Clara	Saratoga	7,207	409	-	-	**7,616**
Santa Clara	Sunnyvale	7,082	4,075	907	11	**12,075**
Solano	Fairfield	18,578	240	57	-	**18,875**
Solano	Suisun City	2,043	12	9	-	**2,064**
Solano	Vallejo	10,980	4,314	1,948	476	**17,718**
	Total	**1,404,362**	**118,302**	**33,046**	**6,355**	**1,562,066**

Table 2. Minimum Trash Capture Area and Trash Hot Spots for Population Based Permittees

Data Source: http://quake.abag.ca.gov/mitigation/pickdbh2.html and Association of Bay Area Governments, 2005 ABAG Land Use Existing Land Use in 2005: Report and Data for Bay Area Counties

	Population	Retail / Wholesale Commercial Acres	**Minimum Full Trash Capture Catchment Area (Acres)**[1]	# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	**Minimum # of Trash Hot Spots**[2]
Alameda County						
San Leandro	73,402	721	**216**	2	7	4
Oakland	420,183	759	**228**	14	8	8
Dublin	46,934	377	**113**	1	3	**3**
Emeryville	9,727	69	**21**	1	1	1
Albany	16,877	95	**28**	1	1	1
Berkeley	106,697	183	**55**	3	1	3
Alameda County Unincorporated.	140,825	375	**112**	4	3	4
Alameda	75,823	402	**121**	2	4	**4**
Fremont	213,512	698	**209**	7	6	7
Hayward	149,205	726	**218**	4	7	**7**
Livermore	83,604	423	**127**	2	4	**4**
Newark	43,872	314	**94**	1	3	**3**
Piedmont	11,100	1	**0**	1	1	1
Pleasanton	69,388	366	**110**	2	3	**3**
Union City	73,402	183	**55**	2	1	2

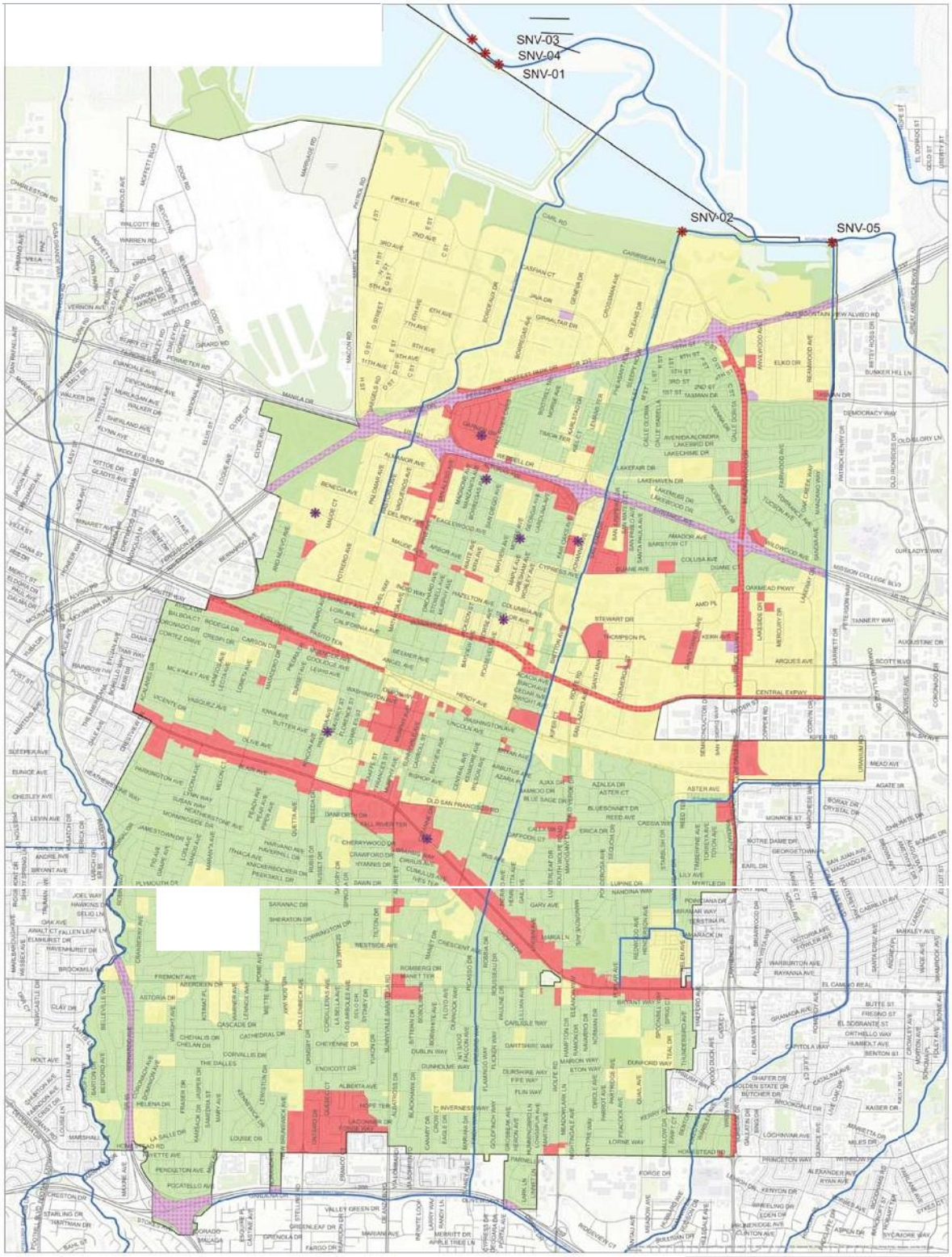
[1] 30% of Retail / Wholesale Commercial Acres – If population under 12,000 and Retail/Wholesale Commercial < 40 acres, Permittee is exempt from Minimum Full Trash Capture Requirement – C.10.iii.a.

[2] If the hot spot # based on % commercial area is more than twice that based on population, the minimum hot spot # is double the population based #.

	Population	Retail / Wholesale Commercial Acres	**Minimum Full Trash Capture Catchment Area (Acres)[1]**	# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	**Minimum # of Trash Hot Spots[2]**
San Mateo County						
San Mateo County Unincorporated.	65,844	71	**21**	2	1	2
Atherton	7,475	0	**0**	1	1	1
Belmont	26,078	58	**17**	1	1	1
Brisbane	3,861	16	**0**	1	1	1
Burlingame	28,867	123	**37**	1	1	1
Colma	1,613	106	**0**	1	1	1
Portola Valley	4,639	9	**0**	1	1	1
Daly City	106,361	242	**73**	3	2	3
East Palo Alto	32,897	59	**18**	1	1	1
Foster City	30,308	67	**20**	1	1	1
Half Moon Bay	13,046	49	**15**	1	1	1
Hillsborough	11,272	0	**0**	1	1	1
Menlo Park	31,490	83	**25**	1	1	1
Millbrae	21,387	68	**20**	1	1	1
Pacifica	39,616	100	**30**	1	1	1
Redwood City	77,269	309	**93**	2	3	**3**
San Bruno	43,444	137	**41**	1	1	1
San Carlos	28,857	129	**39**	1	1	1
San Mateo	95,776	275	**82**	3	2	3
South San Francisco	63,744	195	**58**	2	1	2
Woodside	5,625	9	**0**	1	1	1

	Population	Retail / Wholesale Commercial Acres	**Minimum Full Trash Capture Catchment Area (Acres)** [1]	# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	**Minimum # of Trash Hot Spots** [2]
Contra Costa County						
Contra Costa County Unincorporated.	152,744	524	**157**	5	5	5
Concord	123,776	1016	**305**	4	10	8
Walnut Creek	65,306	329	**99**	2	3	**3**
Clayton	10,784	21	**(0)**	1	1	1
Danville	42,629	134	**40**	1	1	1
El Cerrito	23,320	105	**32**	1	1	1
Hercules	24,324	37	**11**	1	1	1
Lafayette	23,962	68	**20**	1	1	1
Martinez	36,144	142	**43**	1	1	1
Moraga	16,138	108	**32**	1	1	1
Orinda	17,542	24	**7**	1	1	1
Pinole	19,193	140	**42**	1	1	1
Pittsburg	63,652	520	**156**	2	5	4
Pleasant Hill	33,377	219	**66**	1	2	**2**
Richmond	103,577	391	**117**	3	3	3
San Pablo	31,190	131	**39**	1	1	1
San Ramon	59,002	274	**82**	1	2	**2**
Santa Clara County						
Santa Clara County Unincorporated	99,122	270	**47**	3	3	3
Campbell	38,889	137	**41**	1	1	1
Cupertino	55,551	213	**64**	2	2	2
Los Altos	28,291	65	**20**	1	1	1

	Population	Retail / Wholesale Commercial Acres	**Minimum Full Trash Capture Catchment Area (Acres)** [1]	# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	**Minimum # of Trash Hot Spots**[2]
Los Altos Hills	8,837	0	**0**	1	1	1
Los Gatos	30,296	163	**49**	1	1	1
Milpitas	69,419	457	**137**	2	4	**4**
Monte Sereno	3,579	0	**0**	1	1	1
Mountain View	73,932	375	**112**	2	3	**3**
Santa Clara	115,503	560	**168**	3	5	**5**
Saratoga	31,592	41	**12**	1	1	1
San Jose	989,496	2983	**895**	32	29	32
Sunnyvale	137,538	548	**164**	3	5	**5**
Palo Alto	63,367	282	**84**	2	2	2
Solano County						
Vallejo	120,416	559	**168**	4	5	**5**
Fairfield	106,142	486	**146**	3	4	**4**
Suisun	28,031	75	**22**	1	1	1
Totals	4,930,339	19057	**5718**	165	184	349


SNV-03
SNV-04
SNV-01
SNV-02
SNV-05

ATTACHMENT F

State Water Resources Control Board
Resolution No. 2012-0031, Attachment B
Special Protections for Areas of Biological Significance

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 2012-0031

Attachment B - Special Protections for Areas of Special Biological Significance, Governing Point Source Discharges of Storm Water and Nonpoint Source Waste Discharges

I. PROVISIONS FOR POINT SOURCE DISCHARGES OF STORM WATER AND NONPOINT SOURCE WASTE DISCHARGES

The following terms, prohibitions, and special conditions (hereafter collectively referred to as special conditions) are established as limitations on point source storm water and nonpoint source discharges. These special conditions provide Special Protections for marine aquatic life and natural water quality in Areas of Special Biological Significance (ASBS), as required for State Water Quality Protection Areas pursuant to California Public Resources Code Sections 36700(f) and 36710(f). These Special Protections are adopted by the State Water Board as part of the California Ocean Plan (Ocean Plan) General Exception.

The special conditions are organized by category of discharge. The State Water Resources Control Board (State Water Board) and Regional Water Quality Control Boards (Regional Water Boards) will determine categories and the means of regulation for those categories [e.g., Point Source Storm Water National Pollutant Discharge Elimination System (NPDES) or Nonpoint Source].

A. PERMITTED POINT SOURCE DISCHARGES OF STORM WATER

1. General Provisions for Permitted Point Source Discharges of Storm Water

   a. Existing storm water discharges into an ASBS are allowed only under the following conditions:

      (1) The discharges are authorized by an NPDES permit issued by the State Water Board or Regional Water Board;

      (2) The discharges comply with all of the applicable terms, prohibitions, and special conditions contained in these Special Protections; and

      (3) The discharges:

         (i) Are essential for flood control or slope stability, including roof, landscape, road, and parking lot drainage;

         (ii) Are designed to prevent soil erosion;

         (iii) Occur only during wet weather;

         (iv) Are composed of only storm water runoff.

b . Discharges composed of storm water runoff shall not alter natural ocean water quality in an ASBS.

c. The discharge of trash is prohibited.

d. Only discharges from existing storm water outfalls are allowed. Any proposed or new storm water runoff discharge shall be routed to existing storm water discharge outfalls and shall not result in any new contribution of waste to an ASBS (i.e., no additional pollutant loading). "Existing storm water outfalls" are those that were constructed or under construction prior to January 1, 2005. "New contribution of waste" is defined as any addition of waste beyond what would have occurred as of January 1, 2005. A change to an existing storm water outfall, in terms of re-location or alteration, in order to comply with these special conditions, is allowed and does not constitute a new discharge.

e. Non-storm water discharges are prohibited except as provided below:

(1) The term "non-storm water discharges" means any waste discharges from a municipal separate storm sewer system (MS4) or other NPDES permitted storm drain system to an ASBS that are not composed entirely of storm water.

(2) (i) The following non-storm water discharges are allowed, provided that the discharges are essential for emergency response purposes, structural stability, slope stability or occur naturally:

(a) Discharges associated with emergency fire fighting operations.

(b) Foundation and footing drains.

(c) Water from crawl space or basement pumps.

(d) Hillside dewatering.

(e) Naturally occurring groundwater seepage via a storm drain.

(f) Non-anthropogenic flows from a naturally occurring stream via a culvert or storm drain, as long as there are no contributions of anthropogenic runoff.

(ii) An NPDES permitting authority may authorize non-storm water discharges to an MS4 with a direct discharge to an ASBS only to the extent the NPDES permitting authority finds that the discharge does not alter natural ocean water quality in the ASBS.

(3) Authorized non-storm water discharges shall not cause or contribute to a violation of the water quality objectives in Chapter II of the Ocean Plan nor alter natural ocean water quality in an ASBS.

2. Compliance Plans for Inclusion in Storm Water Management Plans (SWMP) and Storm Water Pollution Prevention Plans (SWPPP).

The discharger shall specifically address the prohibition of non-storm water runoff and the requirement to maintain natural water quality for storm water discharges to an ASBS in an ASBS Compliance Plan to be included in its SWMP or a SWPPP, as appropriate to permit type. If a statewide permit includes a SWMP, then the discharger shall prepare a stand-alone compliance

plan for ASBS discharges. The ASBS Compliance Plan is subject to approval by the Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (for permits issued by Regional Water Boards).

a. The Compliance Plan shall include a map of surface drainage of storm water runoff, showing areas of sheet runoff, prioritize discharges, and describe any structural Best Management Practices (BMPs) already employed and/or BMPs to be employed in the future. Priority discharges are those that pose the greatest water quality threat and which are identified to require installation of structural BMPs. The map shall also show the storm water conveyances in relation to other features such as service areas, sewage conveyances and treatment facilities, landslides, areas prone to erosion, and waste and hazardous material storage areas, if applicable. The SWMP or SWPPP shall also include a procedure for updating the map and plan when changes are made to the storm water conveyance facilities.

b. The ASBS Compliance Plan shall describe the measures by which all non-authorized non-storm water runoff (e.g., dry weather flows) has been eliminated, how these measures will be maintained over time, and how these measures are monitored and documented.

c. For Municipal Separate Storm Sewer System (MS4s), the ASBS Compliance Plan shall require minimum inspection frequencies as follows:

(1) The minimum inspection frequency for construction sites shall be weekly during rainy season;

(2) The minimum inspection frequency for industrial facilities shall be monthly during the rainy season;

(3) The minimum inspection frequency for commercial facilities (e.g., restaurants) shall be twice during the rainy season; and

(4) Storm water outfall drains equal to or greater than 18 inches (457 mm) in diameter or width shall be inspected once prior to the beginning of the rainy season and once during the rainy season and maintained to remove trash and other anthropogenic debris.

d. The ASBS Compliance Plan shall address storm water discharges (wet weather flows) and, in particular, describe how pollutant reductions in storm water runoff, that are necessary to comply with these special conditions, will be achieved through BMPs. Structural BMPs need not be installed if the discharger can document to the satisfaction of the State Water Board Executive Director (statewide permits) or Regional Water Board Executive Officer (Regional Water Board permits) that such installation would pose a threat to health or safety. BMPs to control storm water runoff discharges (at the end-of-pipe) during a design storm shall be designed to achieve on average the following target levels:

(1) Table B Instantaneous Maximum Water Quality Objectives in Chapter II of the Ocean Plan; or

(2) A 90% reduction in pollutant loading during storm events, for the applicant's total discharges.

The baseline for these determinations is the effective date of the Exception, except for those structural BMPs installed between January 1, 2005 and adoption of these Special Protections, and the reductions must be achieved and documented within six (6) years of the effective date.

e. The ASBS Compliance Plan shall address erosion control and the prevention of anthropogenic sedimentation in ASBS. The natural habitat conditions in the ASBS shall not be altered as a result of anthropogenic sedimentation.

f. The ASBS Compliance Plan shall describe the non-structural BMPs currently employed and planned in the future (including those for construction activities), and include an implementation schedule. The ASBS Compliance Plan shall include non-structural BMPs that address public education and outreach. Education and outreach efforts must adequately inform the public that direct discharges of pollutants from private property not entering an MS4 are prohibited. The ASBS Compliance Plan shall also describe the structural BMPs, including any low impact development (LID) measures, currently employed and planned for higher threat discharges and include an implementation schedule. To control storm water runoff discharges (at the end-of-pipe) during a design storm, Permittees must first consider, and use where feasible, LID practices to infiltrate, use, or evapotranspirate storm water runoff on-site, if LID practices would be the most effective at reducing pollutants from entering the ASBS.

g. The BMPs and implementation schedule shall be designed to ensure that natural water quality conditions in the receiving water are achieved and maintained by either reducing flows from impervious surfaces or reducing pollutant loading, or some combination thereof.

h. If the results of the receiving water monitoring described in IV.B. of these special conditions indicate that the storm water runoff is causing or contributing to an alteration of natural ocean water quality in the ASBS, the discharger shall submit a report to the State Water Board and Regional Water Board within 30 days of receiving the results.

(1) The report shall identify the constituents in storm water runoff that alter natural ocean water quality and the sources of these constituents.

(2) The report shall describe BMPs that are currently being implemented, BMPs that are identified in the SWMP or SWPPP for future implementation, and any additional BMPs that may be added to the SWMP or SWPPP to address the alteration of natural water quality. The report shall include a new or modified implementation schedule for the BMPs.

(3) Within 30 days of the approval of the report by the State Water Board Executive Director (statewide permits) or Regional Water Board Executive Officer (Regional Water Board permits), the discharger shall revise its ASBS Compliance Plan to incorporate any new or modified BMPs that have been or will be implemented, the implementation schedule, and any additional monitoring required.

(4) As long as the discharger has complied with the procedures described above and is implementing the revised SWMP or SWPPP, the discharger does not have to repeat the same procedure for continuing or recurring exceedances of natural ocean water quality conditions due to the same constituent.

(5) The requirements of this section are in addition to the terms, prohibitions, and conditions contained in these Special Protections.

3. Compliance Schedule

a. On the effective date of the Exception, all non-authorized non-storm water discharges (e.g., dry weather flow) are effectively prohibited.

b. Within eighteen (18) months from the effective date of the Exception, the discharger shall submit a draft written ASBS Compliance Plan to the State Water Board Executive Director (statewide permits) or Regional Water Board Executive Officer (Regional Water Board permits) that describes its strategy to comply with these special conditions, including the requirement to maintain natural water quality in the affected ASBS. The ASBS Compliance Plan shall include a description of appropriate non-structural controls and a time schedule to implement structural controls (implementation schedule) to comply with these special conditions for inclusion in the discharger's SWMP or SWPPP, as appropriate to permit type. The final ASBS Compliance Plan, including a description and final schedule for structural controls based on the results of runoff and receiving water monitoring, must be submitted within thirty (30) months from the effective date of the Exception.

c. Within 18 months of the effective date of the Exception, any non-structural controls that are necessary to comply with these special conditions shall be implemented.

d. Within six (6) years of the effective date of the Exception, any structural controls identified in the ASBS Compliance Plan that are necessary to comply with these special conditions shall be operational.

e. Within six (6) years of the effective date of the Exception, all dischargers must comply with the requirement that their discharges into the affected ASBS maintain natural ocean water quality. If the initial results of post-storm receiving water quality testing indicate levels higher than the 85th percentile threshold of reference water quality data and the pre-storm receiving water levels, then the discharger must re-sample the receiving water, pre- and post-storm. If after re-sampling the post-storm levels are still higher than the 85th percentile threshold of reference water quality data, and the pre-storm receiving water levels, for any constituent, then natural ocean water quality is exceeded. See attached Flowchart.

f. The Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (Regional Water Board permits) may only authorize additional time to comply with the special conditions d. and e., above if good cause exists to do so. Good cause means a physical impossibility or lack of funding.

If a discharger claims physical impossibility, it shall notify the Board in writing within thirty (30) days of the date that the discharger first knew of the event or circumstance that caused or would cause it to fail to meet the deadline in d. or e. The notice shall describe

the reason for the noncompliance or anticipated noncompliance and specifically refer to this Section of this Exception. It shall describe the anticipated length of time the delay in compliance may persist, the cause or causes of the delay as well as measures to minimize the impact of the delay on water quality, the measures taken or to be taken by the discharger to prevent or minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The discharger shall adopt all reasonable measures to avoid and minimize such delays and their impact on water quality.

The discharger may request an extension of time for compliance based on lack of funding. The request for an extension shall require:

1. for municipalities, a demonstration of significant hardship to discharger ratepayers, by showing the relationship of storm water fees to annual household income for residents within the discharger's jurisdictional area, and the discharger has made timely and complete applications for all available bond and grant funding, and either no bond or grant funding is available, or bond and/or grant funding is inadequate; or

2. for other governmental agencies, a demonstration and documentation of a good faith effort to acquire funding through that agency's budgetary process, and a demonstration that funding was unavailable or inadequate.

B. NONPOINT SOURCE DISCHARGES

1. General Provisions for Nonpoint Sources

   a. Existing nonpoint source waste discharges are allowed into an ASBS only under the following conditions:

      (1) The discharges are authorized under waste discharge requirements, a conditional waiver of waste discharge requirements, or a conditional prohibition issued by the State Water Board or a Regional Water Board.

      (2) The discharges are in compliance with the applicable terms, prohibitions, and special conditions contained in these Special Protections.

      (3) The discharges:

         (i) Are essential for flood control or slope stability, including roof, landscape, road, and parking lot drainage;

         (ii) Are designed to prevent soil erosion;

         (iii) Occur only during wet weather;

         (iv) Are composed of only storm water runoff.

   b. Discharges composed of storm water runoff shall not alter natural ocean water quality in an ASBS.

c. The discharge of trash is prohibited.

d. Only existing nonpoint source waste discharges are allowed. "Existing nonpoint source waste discharges" are discharges that were ongoing prior to January 1, 2005. "New nonpoint source discharges" are defined as those that commenced on or after January 1, 2005. A change to an existing nonpoint source discharge, in terms of relocation or alteration, in order to comply with these special conditions, is allowed and does not constitute a new discharge.

e. Non-storm water discharges from nonpoint sources (those not subject to an NPDES Permit) are prohibited except as provided below:

(1) The term "non-storm water discharges" means any waste discharges that are not composed entirely of storm water.

(2) The following non-storm water discharges are allowed, provided that the discharges are essential for emergency response purposes, structural stability, slope stability, or occur naturally:

(i) Discharges associated with emergency fire fighting operations.

(ii) Foundation and footing drains.

(iii) Water from crawl space or basement pumps.

(iv) Hillside dewatering.

(v) Naturally occurring groundwater seepage via a storm drain.

(vi) Non-anthropogenic flows from a naturally occurring stream via a culvert or storm drain, as long as there are no contributions of anthropogenic runoff.

(3) Authorized non-storm water discharges shall not cause or contribute to a violation of the water quality objectives in Chapter II of the Ocean Plan nor alter natural ocean water quality in an ASBS.

f. At the San Clemente Island ASBS, discharges incidental to military training and research, development, test, and evaluation operations are allowed. Discharges incidental to underwater demolition and other in-water explosions are not allowed in the two military closure areas in the vicinity of Wilson Cove and Castle Rock. Discharges must not result in a violation of the water quality objectives, including the protection of the marine aquatic life beneficial use, anywhere in the ASBS.

g. At the San Nicolas Island and Begg Rock ASBS, discharges incidental to military research, development, testing, and evaluation of, and training with, guided missile and other weapons systems, fleet training exercises, small-scale amphibious warfare training, and special warfare training are allowed. Discharges incidental to underwater demolition and other in-water explosions are not allowed. Discharges must not result in a violation of the water quality objectives, including the protection of the marine aquatic life beneficial use, anywhere in the ASBS.

h. All other nonpoint source discharges not specifically authorized above are prohibited.

2. Planning and Reporting

a. The nonpoint source discharger shall develop an ASBS Pollution Prevention ~~P~~lan, including an implementation schedule, to address storm water runoff and any other nonpoint source discharges from its facilities. The ASBS Pollution Prevention Plan must be equivalent in contents to an ASBS Compliance Plan as described in I (A)(2) in this document. The ASBS Pollution Prevention Plan is subject to approval by the Executive Director of the State Water Board (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements).

b. The ASBS Pollution Prevention Plan shall address storm water discharges (wet weather flows) and, in particular, describe how pollutant reductions in storm water runoff that are necessary to comply with these special conditions, will be achieved through Management Measures and associated Management Practices (Management Measures/Practices). Structural BMPs need not be installed if the discharger can document to the satisfaction of the State Water Board Executive Director or Regional Water Board Executive Officer that such installation would pose a threat to health or safety. Management Measures to control storm water runoff during a design storm shall achieve on average the following target levels:

(1) Table B Instantaneous Maximum Water Quality Objectives in Chapter II of the Ocean Plan; or

(2) A 90% reduction in pollutant loading during storm events, for the applicant's total discharges.

The baseline for these determinations is the effective date of the Exception, except for those structural BMPs installed between January 1, 2005 and adoption of these Special Protections, and the reductions must be achieved and documented within six (6) years of the effective date.

c. If the results of the receiving water monitoring described in IV.B. of these special conditions indicate that the storm water runoff or other nonpoint source pollution is causing or contributing to an alteration of natural ocean water quality in the ASBS, the discharger shall submit a report to the State Water Board and the Regional Water Board within 30 days of receiving the results.

(1) The report shall identify the constituents that alter natural water quality and the sources of these constituents.

(2) The report shall describe Management Measures/Practices that are currently being implemented, Management Measures/Practices that are identified in the ASBS Pollution Prevention Plan for future implementation, and any additional Management Measures/Practices that may be added to the Pollution Prevention Plan to address the alteration of natural water quality. The report shall include a new or modified implementation schedule for the Management Measures/Practices.

(3) Within 30 days of the approval of the report by the State Water Board Executive Director (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements), the discharger shall revise its ASBS Pollution Prevention Plan to incorporate any new or modified Management Measures/Practices that have been or will be implemented, the implementation schedule, and any additional monitoring required.

(4) As long as the discharger has complied with the procedures described above and is implementing the revised ASBS Pollution Prevention Plan, the discharger does not have to repeat the same procedure for continuing or recurring exceedances of natural water quality conditions due to the same constituent.

(5) The requirements of this section are in addition to the terms, prohibitions, and conditions contained in these Special Protections.

3. Compliance Schedule

a. On the effective date of the Exception, all non-authorized non-storm water discharges (e.g., dry weather flow) are effectively prohibited.

b. Within eighteen (18) months from the effective date of the Exception, the dischargers shall submit a draft written ASBS Pollution Prevention Plan to the State Water Board Executive Director (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements) that describes its strategy to comply with these special conditions, including the requirement to maintain natural ocean water quality in the affected ASBS. The Pollution Prevention Plan shall include a description of appropriate non-structural controls and a time schedule to implement structural controls to comply with these special conditions for inclusion in the discharger's Pollution Prevention Plan. The final ASBS Pollution Prevention Plan, including a description and final schedule for structural controls based on the results of runoff and receiving water monitoring, must be submitted within thirty (30) months from the effective date of the Exception.

c. Within 18 months of the effective date of the Exception, any non-structural controls that are necessary to comply with these Special Protections shall be implemented.

d. Within six (6) years of the effective date of the Exception, any structural controls identified in the ASBS Pollution Prevention Plan that are necessary to comply with these special conditions shall be operational.

e. Within six (6) years of the effective date of the Exception, all dischargers must comply with the requirement that their discharges into the affected ASBS maintain natural ocean water quality. If the initial results of post-storm receiving water quality testing indicate levels higher than the 85th percentile threshold of reference water quality data and the pre-storm receiving water levels, then the discharger must re-sample the receiving water pre- and post-storm. If after re-sampling the post-storm levels are still higher than the 85th percentile threshold of reference water quality data and the pre-storm receiving water levels, for any constituent, then natural ocean water quality is exceeded. See attached Flowchart.

f. The Executive Director of the State Water Board (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements) may only authorize additional time to comply with the special conditions d. and e., above if good cause exists to do so. Good cause means a physical impossibility or lack of funding.

If a discharger claims physical impossibility, it shall notify the Board in writing within thirty (30) days of the date that the discharger first knew of the event or circumstance that caused or would cause it to fail to meet the deadline in d. or e. The notice shall describe the reason for the noncompliance or anticipated noncompliance and specifically refer to this Section of this Exception. It shall describe the anticipated length of time the delay in compliance may persist, the cause or causes of the delay as well as measures to minimize the impact of the delay on water quality, the measures taken or to be taken by the discharger to prevent or minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The discharger shall adopt all reasonable measures to avoid and minimize such delays and their impact on water quality.

The discharger may request an extension of time for compliance based on lack of funding. The request for an extension shall require:

1. a demonstration that the discharger has made timely and complete applications for all available bond and grant funding, and either no bond or grant funding is available, or bond and/or grant funding is inadequate; or

2. for governmental agencies, a demonstration and documentation of a good faith effort to acquire funding through that agency's budgetary process, and a demonstration that funding was unavailable or inadequate.

II. ADDITIONAL REQUIREMENTS FOR PARKS AND RECREATION FACILITIES

In addition to the provisions in Section I (A) or I (B), respectively, a discharger with parks and recreation facilities shall comply with the following:

A. The discharger shall include a section in an ASBS Compliance Plan (for NPDES dischargers) or an ASBS Pollution Prevention Plan (for nonpoint source dischargers) to address storm water runoff from parks and recreation facilities.

1. The plan shall identify all pollutant sources, including sediment sources, which may result in waste entering storm water runoff. Pollutant sources include, but are not limited to, roadside rest areas and vistas, picnic areas, campgrounds, trash receptacles, maintenance facilities, park personnel housing, portable toilets, leach fields, fuel tanks, roads, piers, and boat launch facilities.

2. The plan shall describe BMPs or Management Measures/Practices that will be implemented to control soil erosion (both temporary and permanent erosion controls) and reduce or eliminate pollutants in storm water runoff in order to achieve and maintain natural water quality conditions in the affected ASBS. The plan shall include BMPs or

Management Measures/Practices to ensure that trails and culverts are maintained to prevent erosion and minimize waste discharges to ASBS.

3. The plan shall include BMPs or Management Measures/Practices to prevent the discharge of pesticides or other chemicals, including agricultural chemicals, in storm water runoff to the affected ASBS.

4. The plan shall include BMPs or Management Measures/Practices that address public education and outreach. The goal of these BMPs or Management Measures/Practices is to ensure that the public is adequately informed that waste discharges to the affected ASBS are prohibited or limited by special conditions in these Special Protections. The BMPs or Management Measures/Practices shall include signage at camping, picnicking, beach and roadside parking areas, and visitor centers, or other appropriate measures, which notify the public of any applicable requirements of these Special Protections and identify the ASBS boundaries.

5. The plan shall include BMPs or Management Measures/Practices that address the prohibition against the discharge of trash to ASBS. The BMPs or Management Measures/Practices shall include measures to ensure that adequate trash receptacles are available for public use at visitor facilities, including parking areas, and that the receptacles are adequately maintained to prevent trash discharges into the ASBS. Appropriate measures include covering trash receptacles to prevent trash from being wind blown and periodically emptying the receptacles to prevent overflows.

6. The plan shall include BMPs or Management Measures/Practices to address runoff from parking areas and other developed features to ensure that the runoff does not alter natural water quality in the affected ASBS. BMPs or Management Measures/Practices shall include measures to reduce pollutant loading in runoff to the ASBS through installation of natural area buffers (LID), treatment, or other appropriate measures.

B. Maintenance and repair of park and recreation facilities must not result in waste discharges to the ASBS. The practice of road oiling must be minimized or eliminated, and must not result in waste discharges to the ASBS.

III. ADDITIONAL REQUIREMENTS – WATERFRONT AND MARINE OPERATIONS

In addition to the provisions in Section I (A) or I (B), respectively, a discharger with waterfront and marine operations shall comply with the following:

A. For discharges related to waterfront and marine operations, the discharger shall develop a Waterfront and Marine Operations Management Plan (Waterfront Plan). This plan shall contain appropriate Management Measures/Practices to address nonpoint source pollutant discharges to the affected ASBS.

1. The Waterfront Plan shall contain appropriate Management Measures/Practices for any waste discharges associated with the operation and maintenance of vessels, moorings, piers, launch ramps, and cleaning stations in order to ensure that beneficial uses are protected and natural water quality is maintained in the affected ASBS.

2. For discharges from marinas and recreational boating activities, the Waterfront Plan shall include appropriate Management Measures, described in The Plan for California's Nonpoint Source Pollution Control Program, for marinas and recreational boating, or equivalent practices, to ensure that nonpoint source pollutant discharges do not alter natural water quality in the affected ASBS.

3. The Waterfront Plan shall include Management Practices to address public education and outreach to ensure that the public is adequately informed that waste discharges to the affected ASBS are prohibited or limited by special conditions in these Special Protections. The management practices shall include appropriate signage, or similar measures, to inform the public of the ASBS restrictions and to identify the ASBS boundaries.

4. The Waterfront Plan shall include Management Practices to address the prohibition against trash discharges to ASBS. The Management Practices shall include the provision of adequate trash receptacles for marine recreation areas, including parking areas, launch ramps, and docks. The plan shall also include appropriate Management Practices to ensure that the receptacles are adequately maintained and secured in order to prevent trash discharges into the ASBS. Appropriate Management Practices include covering the trash receptacles to prevent trash from being windblown, staking or securing the trash receptacles so they don't tip over, and periodically emptying the receptacles to prevent overflow.

5. The discharger shall submit its Waterfront Plan to the by the State Water Board Executive Director (statewide waivers or waste discharge requirements) or Executive Officer of the Regional Water Board (Regional Water Board waivers or waste discharge requirements) within six months of the effective date of these special conditions. The Waterfront Plan is subject to approval by the State Water Board Executive Director or the Regional Water Board Executive Officer, as appropriate. The plan must be fully implemented within 18 months of the effective date of the Exception.

B. The discharge of chlorine, soaps, petroleum, other chemical contaminants, trash, fish offal, or human sewage to ASBS is prohibited. Sinks and fish cleaning stations are point source discharges of wastes and are prohibited from discharging into ASBS. Anthropogenic accumulations of discarded fouling organisms on the sea floor must be minimized.

C. Limited-term activities, such as the repair, renovation, or maintenance of waterfront facilities, including, but not limited to, piers, docks, moorings, and breakwaters, are authorized only in accordance with Chapter III.E.2 of the Ocean Plan.

D. If the discharger anticipates that the discharger will fail to fully implement the approved Waterfront Plan within the 18 month deadline, the discharger shall submit a technical report as soon as practicable to the State Water Board Executive Director or the Regional Water Board Executive Officer, as appropriate. The technical report shall contain reasons for failing to meet the deadline and propose a revised schedule to fully implement the plan.

E. The State Water Board or the Regional Water Board may, for good cause, authorize additional time to comply with the Waterfront Plan. Good cause means a physical impossibility or lack of funding.

If a discharger claims physical impossibility, it shall notify the Board in writing within thirty (30) days of the date that the discharger first knew of the event or circumstance that caused or would cause it to fail to meet the deadline in Section III.A.5. The notice shall describe the reason for the noncompliance or anticipated noncompliance and specifically refer to this Section of this Exception. It shall describe the anticipated length of time the delay in compliance may persist, the cause or causes of the delay as well as measures to minimize the impact of the delay on water quality, the measures taken or to be taken by the discharger to prevent or minimize the delay, the schedule by which the measures will be implemented, and the anticipated date of compliance. The discharger shall adopt all reasonable measures to avoid and minimize such delays and their impact on water quality. The discharger may request an extension of time for compliance based on lack of funding. The request for an extension shall require:

1. a demonstration of significant hardship by showing that the discharger has made timely and complete applications for all available bond and grant funding, and either no bond or grant funding is available, or bond and/or grant funding is inadequate.

2. for governmental agencies, a demonstration and documentation of a good faith effort to acquire funding through that agency's budgetary process, and a demonstration that funding was unavailable or inadequate.

IV. MONITORING REQUIREMENTS

Monitoring is mandatory for all dischargers to assure compliance with the Ocean Plan. Monitoring requirements include both: (A) core discharge monitoring, and (B) ocean receiving water monitoring. The State and Regional Water Boards must approve sampling site locations and any adjustments to the monitoring programs. All ocean receiving water and reference area monitoring must be comparable with the Water Boards' Surface Water Ambient Monitoring Program (SWAMP).

Safety concerns: Sample locations and sampling periods must be determined considering safety issues. Sampling may be postponed upon notification to the State and Regional Water Boards if hazardous conditions prevail.

Analytical Chemistry Methods: All constituents must be analyzed using the lowest minimum detection limits comparable to the Ocean Plan water quality objectives. For metal analysis, all samples, including storm water effluent, reference samples, and ocean receiving water samples, must be analyzed by the approved analytical method with the lowest minimum detection limits (currently Inductively Coupled Plasma/Mass Spectrometry) described in the Ocean Plan.

A. CORE DISCHARGE MONITORING PROGRAM

1. General sampling requirements for timing and storm size:

   Runoff must be collected during a storm event that is greater than 0.1 inch and generates runoff, and at least 72 hours from the previously measurable storm event. Runoff samples shall be collected during the same storm and at approximately the same time when post-

storm receiving water is sampled, and analyzed for the same constituents as receiving water and reference site samples (see section IV B) as described below.

2. Runoff flow measurements

   a. For municipal/industrial storm water outfalls in existence as of December 31, 2007, 18 inches (457mm) or greater in diameter/width (including multiple outfall pipes in combination having a width of 18 inches, runoff flows must be measured or calculated, using a method acceptable to and approved by the State and Regional Water Boards.

   b. This will be reported annually for each precipitation season to the State and Regional Water Boards.

3. Runoff samples – storm events

   a. For outfalls equal to or greater than 18 inches (0.46m) in diameter or width:

      (1) samples of storm water runoff shall be collected during the same storm as receiving water samples and analyzed for oil and grease, total suspended solids, and, within the range of the southern sea otter indicator bacteria or some other measure of fecal contamination; and

      (2) samples of storm water runoff shall be collected and analyzed for critical life stage chronic toxicity (one invertebrate or algal species) at least once during each storm season when receiving water is sampled in the ASBS.

      (3) If an applicant has no outfall greater than 36 inches, then storm water runoff from the applicant's largest outfall shall be further collected during the same storm as receiving water samples and analyzed for Ocean Plan Table B metals for protection of marine life, Ocean Plan polynuclear aromatic hydrocarbons (PAHs), current use pesticides (pyrethroids and OP pesticides), and nutrients (ammonia, nitrate and phosphates).

   b. For outfalls equal to or greater than 36 inches (0.91m) in diameter or width:

      (1) samples of storm water runoff shall be collected during the same storm as receiving water samples and analyzed for oil and grease, total suspended solids, and, within the range of the southern sea otter indicator bacteria or some other measure of fecal contamination; and

      (2) samples of storm water runoff shall be further collected during the same storm as receiving water samples and analyzed for Ocean Plan Table B metals for protection of marine life, Ocean Plan polynuclear aromatic hydrocarbons (PAHs), current use pesticides (pyrethroids and OP pesticides), and nutrients (ammonia, nitrate and phosphates); and

      (3) samples of storm water runoff shall be collected and analyzed for critical life stage chronic toxicity (one invertebrate or algal species) at least once during each storm season when receiving water is sampled in the ASBS.

IV (B)] in addition to (a.) and (b.) above, a minimum of the two largest outfalls or 20 percent of the larger outfalls, whichever is greater, shall be sampled (flow weighted composite samples) at least three times annually during wet weather (storm event) and analyzed for all Ocean Plan Table A constituents, Table B constituents for marine aquatic life protection (except for toxicity, only chronic toxicity for three species shall be required), DDT, PCBs, Ocean Plan PAHs, OP pesticides, pyrethroids, nitrates, phosphates, and Ocean Plan indicator bacteria. For parties discharging to ASBS in more than one Regional Water Board region, at a minimum, one (the largest) such discharge shall be sampled annually in each Region.

4. The Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (Regional Water Board permits) may reduce or suspend core monitoring once the storm runoff is fully characterized. This determination may be made at any point after the discharge is fully characterized, but is best made after the monitoring results from the first permit cycle are assessed.

B. Ocean Receiving Water and Reference Area Monitoring Program

In addition to performing the Core Discharge Monitoring Program in Section II.A above, all applicants having authorized discharges must perform ocean receiving water monitoring. In order to fulfill the requirements for monitoring the physical, chemical, and biological characteristics of the ocean receiving waters within their ASBS, dischargers may choose either (1) an individual monitoring program, or (2) participation in a regional integrated monitoring program.

1. Individual Monitoring Program: The requirements listed below are for those dischargers who elect to perform an individual monitoring program to fulfill the requirements for monitoring the physical, chemical, and biological characteristics of the ocean receiving waters within the affected ASBS. In addition to Core Discharge Monitoring, the following additional monitoring requirements shall be met:

    a. Three times annually, during wet weather (storm events), the receiving water at the point of discharge from the outfalls described in section (IV)(A)(3)(c) above shall be sampled and analyzed for Ocean Plan Table A constituents, Table B constituents for marine aquatic life, DDT, PCBs, Ocean Plan PAHs, OP pesticides, pyrethroids, nitrates, phosphates, salinity, chronic toxicity (three species), and Ocean Plan indicator bacteria.

        The sample location for the ocean receiving water shall be in the surf zone at the point of discharges; this must be at the same location where storm water runoff is sampled. Receiving water shall be sampled prior to (pre-storm) and during (or immediately after) the same storm (post storm). Post storm sampling shall be during the same storm and at approximately the same time as when the runoff is sampled. Reference water quality shall also be sampled three times annually and analyzed for the same constituents pre-storm and post-storm, during the same storm seasons when receiving water is sampled. Reference stations will be determined by the State Water Board's Division of Water Quality and the applicable Regional Water Board(s).

    b. Sediment sampling shall occur at least three times during every five (5) year period. The subtidal sediment (sand or finer, if present) at the discharge shall be sampled and analyzed for Ocean Plan Table B constituents for marine aquatic life, DDT, PCBs, PAHs,

using the amphipod *Eohaustorius estuarius* must be performed.

c. A quantitative survey of intertidal benthic marine life shall be performed at the discharge and at a reference site. The survey shall be performed at least once every five (5) year period. The survey design is subject to approval by the Regional Water Board and the State Water Board's Division of Water Quality. The results of the survey shall be completed and submitted to the State Water Board and Regional Water Board at least six months prior to the end of the permit cycle.

d. Once during each five (5) year period, a bioaccumulation study shall be conducted to determine the concentrations of metals and synthetic organic pollutants at representative discharge sites and at representative reference sites. The study design is subject to approval by the Regional Water Board and the State Water Board's Division of Water Quality. The bioaccumulation study may include California mussels (*Mytilus californianus*) and/or sand crabs (*Emerita analoga* or *Blepharipoda occidentalis*). Based on the study results, the Regional Water Board and the State Water Board's Division of Water Quality, may adjust the study design in subsequent permits, or add or modify additional test organisms (such as shore crabs or fish), or modify the study design appropriate for the area and best available sensitive measures of contaminant exposure.

e. Marine Debris: Representative quantitative observations for trash by type and source shall be performed along the coast of the ASBS within the influence of the discharger's outfalls. The design, including locations and frequency, of the marine debris observations is subject to approval by the Regional Water Board and State Water Board's Division of Water Quality.

f. The monitoring requirements of the Individual Monitoring Program in this section are minimum requirements. After a minimum of one (1) year of continuous water quality monitoring of the discharges and ocean receiving waters, the Executive Director of the State Water Board (statewide permits) or Executive Officer of the Regional Water Board (Regional Water Board permits) may require additional monitoring, or adjust, reduce or suspend receiving water and reference station monitoring. This determination may be made at any point after the discharge and receiving water is fully characterized, but is best made after the monitoring results from the first permit cycle are assessed.

2. Regional Integrated Monitoring Program: Dischargers may elect to participate in a regional integrated monitoring program, in lieu of an individual monitoring program, to fulfill the requirements for monitoring the physical, chemical, and biological characteristics of the ocean receiving waters within their ASBS. This regional approach shall characterize natural water quality, pre- and post-storm, in ocean reference areas near the mouths of identified open space watersheds and the effects of the discharges on natural water quality (physical, chemical, and toxicity) in the ASBS receiving waters, and should include benthic marine aquatic life and bioaccumulation components. The design of the ASBS stratum of a regional integrated monitoring program may deviate from the otherwise prescribed individual monitoring approach (in Section IV.B.1) if approved by the State Water Board's Division of Water Quality and the Regional Water Boards.

   a. Ocean reference areas shall be located at the drainages of flowing watersheds with minimal development (in no instance more than 10% development), and shall not be located in CWA Section 303(d) listed waterbodies or have tributaries that are 303(d)

listed. Reference areas shall be free of wastewater discharges and anthropogenic non-storm water runoff. A minimum of low threat storm runoff discharges (e.g. stream highway overpasses and campgrounds) may be allowed on a case-by-case basis. Reference areas shall be located in the same region as the ASBS receiving water monitoring occurs. The reference areas for each Region are subject to approval by the participants in the regional monitoring program and the State Water Board's Division of Water Quality and the applicable Regional Water Board(s). A minimum of three ocean reference water samples must be collected from each station, each from a separate storm during the same storm season that receiving water is sampled. A minimum of one reference location shall be sampled for each ASBS receiving water site sampled per responsible party. For parties discharging to ASBS in more than one Regional Water Board region, at a minimum, one reference station and one receiving water station shall be sampled in each region.

b. ASBS ocean receiving water must be sampled in the surf zone at the location where the runoff makes contact with ocean water (i.e. at "point zero"). Ocean receiving water stations must be representative of worst-case discharge conditions (i.e. co-located at a large drain greater than 36 inches, or if drains greater than 36 inches are not present in the ASBS then the largest drain greater than18 inches.) Ocean receiving water stations are subject to approval by the participants in the regional monitoring program and the State Water Board's Division of Water Quality and the applicable Regional Water Board(s). A minimum of three ocean receiving water samples must be collected during each storm season from each station, each from a separate storm. A minimum of one receiving water location shall be sampled in each ASBS per responsible party in that ASBS. For parties discharging to ASBS in more than one Regional Water Board region, at a minimum, one reference station and one receiving water station shall be sampled in each region.

c. Reference and receiving water sampling shall commence during the first full storm season following the adoption of these special conditions, and post-storm samples shall be collected during the same storm event when storm water runoff is sampled. Sampling shall occur in a minimum of two storm seasons. For those ASBS dischargers that have already participated in the Southern California Bight 2008 ASBS regional monitoring effort, sampling may be limited to only one storm season.

d. Receiving water and reference samples shall be analyzed for the same constituents as storm water runoff samples. At a minimum, constituents to be sampled and analyzed in reference and discharge receiving waters must include oil and grease, total suspended solids, Ocean Plan Table B metals for protection of marine life, Ocean Plan PAHs, pyrethroids, OP pesticides, ammonia, nitrate, phosphates, and critical life stage chronic toxicity for three species. In addition, within the range of the southern sea otter, indicator bacteria or some other measure of fecal contamination shall be analyzed.

3. Waterfront and Marine Operations: In addition to the above requirements for ocean receiving water monitoring, additional monitoring must be performed for marinas and boat launch and pier facilities:

   a. For all marina or mooring field operators, in mooring fields with 10 or more occupied moorings, the ocean receiving water must be sampled for Ocean Plan indicator bacteria, residual chlorine, copper, zinc, grease and oil, methylene blue active substances (MBAS), and ammonia nitrogen.

(1) For mooring field operators opting for an individual monitoring program (Section IV.B.1 above), this sampling must occur weekly (on the weekend) from May through October.

(2) For mooring field operators opting to participate in a regional integrated monitoring program (Section IV.B.2 above), this sampling must occur monthly from May through October on a high use weekend in each month. The Water Boards may allow a reduction in the frequency of sampling, through the regional monitoring program, after the first year of monitoring.

b. For all mooring field operators, the subtidal sediment (sand or finer, if present) within mooring fields and below piers shall be sampled and analyzed for Ocean Plan Table B metals (for marine aquatic life beneficial use), acute toxicity, PAHs, and tributyltin. For sediment toxicity testing, only an acute toxicity test using the amphipod *Eohaustorius estuarius* must be performed. This sampling shall occur at least three times during a five (5) year period. For mooring field operators opting to participate in a regional integrated monitoring program, the Water Boards may allow a reduction in the frequency of sampling after the first sampling effort's results are assessed.

Glossary

At the point of discharge(s) – Means in the surf zone immediately where runoff from an outfall meets the ocean water (a.k.a., at point zero).

Areas of Special Biological Significance (ASBS) – Those areas designated by the State Water Board as ocean areas requiring protection of species or biological communities to the extent that alteration of natural water quality is undesirable. All Areas of Special Biological Significance are also classified as a subset of State Water Quality Protection Areas.

Design storm – For purposes of these Special Protections, a design storm is defined as the volume of runoff produced from one inch of precipitation per day or, if this definition is inconsistent with the discharger's applicable storm water permit, then the design storm shall be the definition included in the discharger's applicable storm water permit.

Development – Relevant to reference monitoring sites, means urban, industrial, agricultural, grazing, mining, and timber harvesting land uses.

Higher threat discharges - Permitted storm drains discharging equal to or greater than 18 inches, industrial storm drains, agricultural runoff discharged through an MS4, discharges associated with waterfront and marina operations (e.g., piers, launch ramps, mooring fields, and associated vessel support activities, except for passive discharges defined below), and direct discharges associated with commercial or industrial activities to ASBS.

Low Impact Development (LID) – A sustainable practice that benefits water supply and contributes to water quality protection. Unlike traditional storm water management, which entails collecting and conveying storm water runoff through storm drains, pipes, or other conveyances to a centralized storm water facility, LID focuses on using site design and storm water management to maintain the site's pre-development runoff rates and volumes. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall.

Marine Operations – Marinas or mooring fields that contain slips or mooring locations for 10 or more vessels.

Management Measure (MM) - Economically achievable measures for the control of the addition of pollutants from various classes of nonpoint sources of pollution, which reflect the greatest degree of pollutant reduction achievable through the application of the best available nonpoint pollution control practices, technologies, processes, siting criteria, operating methods, or other alternatives. For example, in the "marinas and recreational boating" land-use category specified in the Plan for California's Nonpoint Source Pollution Control Program (NPS Program Plan) (SWRCB, 1999), "boat cleaning and maintenance" is considered a MM or the source of a specific class or type of NPS pollution.

Management Practice (MP) - The practices (e.g., structural, non-structural, operational, or other alternatives) that can be used either individually or in combination to address a specific MM class or classes of NPS pollution. For example, for the "boat cleaning and maintenance" MM, specific MPs can include, but are not limited to, methods for the selection of environmentally sensitive hull paints or methods for cleaning/removal of hull copper anti-fouling paints.

Municipal Separate Storm Sewer System (MS4) – A municipally-owned storm sewer system regulated under the Phase I or Phase II storm water program implemented in compliance with Clean Water Act section 402(p). Note that an MS4 program's boundaries are not necessarily congruent with the permittee's political boundaries.

Natural Ocean Water Quality - The water quality (based on selected physical, chemical and biological characteristics) that is required to sustain marine ecosystems, and which is without apparent human influence, *i.e.*, an absence of significant amounts of: (a) man-made constituents (*e.g.,* DDT); (b) other chemical (*e.g.,* trace metals), physical (temperature/thermal pollution, sediment burial), and biological (*e.g.*, bacteria) constituents at concentrations that have been elevated due to man's activities above those resulting from the naturally occurring processes that affect the area in question; and (c) non-indigenous biota (*e.g.,* invasive algal bloom species) that have been introduced either deliberately or accidentally by man. Discharges "*shall not alter natural ocean water quality*" as determined by a comparison to the range of constituent concentrations in reference areas agreed upon via the regional monitoring program(s). If monitoring information indicates that *natural ocean water quality* is not maintained, but there is sufficient evidence that a discharge is not contributing to the alteration of natural water quality, then the Regional Water Board may make that determination. In this case, sufficient information must include runoff sample data that has equal or lower concentrations for the range of constituents at the applicable reference area(s).

Nonpoint source – Nonpoint pollution sources generally are sources that do not meet the definition of a point source. Nonpoint source pollution typically results from land runoff, precipitation, atmospheric deposition, agricultural drainage, marine/boating operations or hydrologic modification. Nonpoint sources, for purposes of these Special Protections, include discharges that are not required to be regulated under an NPDES permit.

Non-storm water discharge – Any runoff that is not the result of a precipitation event. This is often referred to as "dry weather flow."

Non-structural control – A Best Management Practice that involves operational, maintenance, regulatory (e.g., ordinances) or educational activities designed to reduce or eliminate pollutants in runoff, and that are not structural controls (i.e. there are no physical structures involved).

Physical impossibility - Means any act of God, war, fire, earthquake, windstorm, flood or natural catastrophe; unexpected and unintended accidents not caused by discharger or its employees' negligence; civil disturbance, vandalism, sabotage or terrorism; restrain by court order or public authority or agency; or action or non-action by, or inability to obtain the necessary authorizations or approvals from any governmental agency other than the permittee.

Representative sites and monitoring procedures – Are to be proposed by the discharger, with appropriate rationale, and subject to approval by Water Board staff.

Sheet-flow – Runoff that flows across land surfaces at a shallow depth relative to the cross-sectional width of the flow. These types of flow may or may not enter a storm drain system before discharge to receiving waters.

Storm Season – Also referred to as rainy season, means the months of the year from the onset of rainfall during autumn until the cessation of rainfall in the spring.

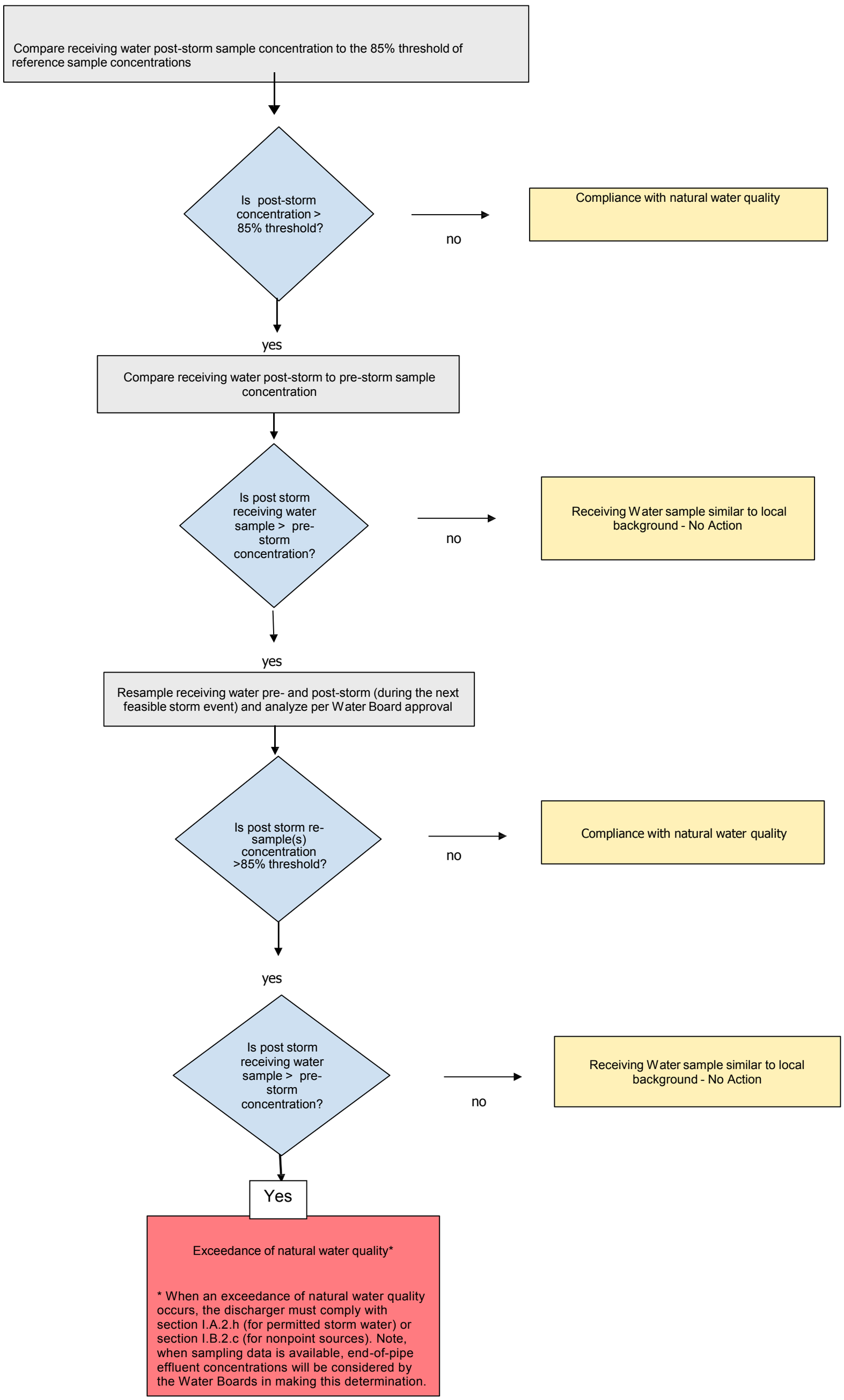
Structural control – A Best Management Practice that involves the installation of engineering solutions to the physical treatment or infiltration of runoff.

Surf Zone - The surf zone is defined as the submerged area between the breaking waves and the shoreline at any one time.

Surface Water Ambient Monitoring Program (SWAMP) comparable – Means that the monitoring program must 1) meet or exceed 2008 SWAMP Quality Assurance Program Management Plan (QAPP) Measurement Quality Objectives, or 2) have a Quality Assurance Project Plan that has been approved by SWAMP; in addition data must be formatted to match the database requirements of the SWAMP Information Management System. Adherence to the measurement quality objectives in the Southern California Bight 2008 ASBS Regional Monitoring Program QAPP and data base management comprises being SWAMP comparable.

Waterfront Operations - Piers, launch ramps, and cleaning stations in the water or on the adjacent shoreline.

Attachment 1
Special Protections Sections I(A)(3)(e) and I(B)(3)(e)
Flowchart to Deteremine Compliance with natural Water Quality



ATTACHMENT G

Standard NPDES Stormwater Permit Provisions

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD SAN FRANCISCO BAY REGION

Standard Provisions and Reporting Requirements for NPDES Stormwater Discharge Permits

November 19, 2015

A. GENERAL PROVISIONS

1. Neither the treatment nor the discharge of pollutants shall create a pollution, contamination, or nuisance as defined by Section 13050 of the California Water Code.

2. All discharges authorized by this Order shall be consistent with the terms and conditions of this Order.

3. Duty to Comply

a. If a toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the Clean Water Act, or amendments thereto, for a toxic pollutant which is present in the discharge authorized herein and such standard or prohibition is more stringent than any limitation upon such pollutant in a Board adopted Order, discharger must comply with the new standard or prohibition. The Board will revise or modify the Order in accordance with such toxic effluent standard or prohibition and so notify the discharger.

b. If more stringent applicable water quality standards are approved pursuant to Section 303 of the Clean Water Act, or amendments thereto, the discharger must comply with the new standard. The Board will revise and modify this Order in accordance with such more stringent standards.

c. The filing of a request by the discharger for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition. [40 CFR 122.41(f)]

4. Duty to Mitigate

The discharger shall take all reasonable steps to minimize or prevent any discharge in violation of this order and permit which has a reasonable likelihood of adversely affecting public health or the environment, including such accelerated or additional monitoring as requested by the Board or Executive Officer to determine the nature and impact of the violation. [40 CFR 122.41(d)]

5. Pursuant to U.S. Environmental Protection Agency regulations the discharger must notify the Water Board as soon as it knows or has reason to believe (1) that they have begun or expect to begin, use or manufacture of a pollutant not reported in the permit application,

or (2) a discharge of toxic pollutants not limited by this permit has occurred, or will occur, in concentrations that exceed the limits specified in 40 CFR 122.42(a).

6. The discharge of any radiological, chemical, or biological warfare agent waste is prohibited.

7. All facilities used for transport, treatment, or disposal of wastes shall be adequately protected against overflow or washout as the result of a 100-year frequency flood.

8. Collection, treatment, storage and disposal systems shall be operated in a manner that precludes public contact with wastewater, except where excluding the public is inappropriate, warning signs shall be posted.

9. Property Rights

This Order and Permit does not convey any property rights of any sort or any exclusive privileges. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another, nor protect the discharger from liabilities under federal, state or local laws, nor create a vested right for the discharge to continue the waste discharge or guarantee the discharger a capacity right in the receiving water. [40 CFR 122.41(g)]

10. Inspection and Entry

The Board or its authorized representatives shall be allowed:

a. Entry upon premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of the order and permit;

b. Access to and copy at, reasonable times, any records that must be kept under the conditions of the order and permit;

c. To inspect at reasonable times any facility, equipment (including monitoring and control equipment), practices, or operations regulated or required under the order and permit; and

d. To photograph, sample, and monitor, at reasonable times for the purpose of assuring compliance with the order and permit or as otherwise authorized by the Clean Water Act, any substances or parameters at any locations. [40 CFR 122.41(i)]

11. Permit Actions

This Order and Permit may be modified, revoked and reissued, or terminated in accordance with applicable State and/or Federal regulations. Cause for taking such action includes, but is not limited to any of the following:

a. Violation of any term or condition contained in the Order and Permit;

b. Obtaining the Order and Permit by misrepresentation, or by failure to disclose fully all relevant facts;

c. Endangerment to public health or environment that can only be regulated to acceptable levels by order and permit modification or termination; and

d. Any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge.

12. Duty to Provide Information

The discharger shall furnish, within a reasonable time, any information the Board may request to determine whether cause exists for modifying, revoking and reissuing, or terminating the permit. The discharger shall also furnish to the Board, upon request, copies of records required to be kept by its permit. [40 CFR 122.41(h)]

13. Availability

A copy of this permit shall be maintained at the discharge facility and be available at all times to operating personnel.

14. Continuation of Expired Permit

This permit continues in force and effect until a new permit is issued or the Board rescinds the permit. Only those dischargers authorized to discharge under the expiring permit are covered by the continued permit.

B. GENERAL REPORTING REQUIREMENTS

1. Signatory Requirements

a. All reports required by the order and permit and other information requested by the Board or U.S. EPA Region 9 shall be signed by a principal executive officer or ranking elected official of the discharger, or by a duly authorized representative of that person. [40 CFR 122.22(b)]

b. Certification

All reports signed by a duly authorized representative under Provision E.1.a. shall contain the following certification:
"I certify under penalty of law that this document and all attachments are prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based on my inquiry of the person or persons who managed the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." [40 CFR 122.22(d)]

2. Should the discharger discover that it failed to submit any relevant facts or that it submitted incorrect information in any report, it shall promptly submit the missing or correct information. [40 CFR 122.41(l)(8)]

3. False Reporting

Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or noncompliance shall be subject to enforcement procedures as identified in Section F of these Provisions.

4. Transfers

a. This permit is not transferable to any person except after notice to the Board. The Board may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the Clean Water Act.

b. Transfer of control or ownership of a waste discharge facility under an National Pollutant Discharge Elimination System permit must be preceded by a notice to the Board at least 30 days in advance of the proposed transfer date. The notice must include a written agreement between the existing discharger and proposed discharger containing specific dates for transfer of responsibility, coverage, and liability between them. Whether an order and permit may be transferred without modification or revocation and reissuance is at the discretion of the Board. If order and permit modification or revocation and reissuance is necessary, transfer may be delayed 180 days after the Board's receipt of a complete application for waste discharge requirements and an NPDES permit.

5. Compliance Reporting

a. Planned Changes

The discharger shall file with the Board a report of waste discharge at least 120 days before making any material change or proposed change in the character, location or volume of the discharge.

b. Compliance Schedules

Reports of compliance or noncompliance with, or any progress reports on, interim and final compliance dates contained in any compliance schedule shall be submitted within 10 working days following each scheduled date unless otherwise specified within this order and permit. If reporting noncompliance, the report shall include a description of the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance and an estimated date for achieving full compliance. A final report shall be submitted within 10 working days of achieving full compliance, documenting full compliance

c. Non-compliance Reporting (Twenty-four hour reporting:)

i. The discharger shall report any noncompliance that may endanger health or the environment. All pertinent information shall be provided orally within 24 hours from the time the discharger becomes aware of the circumstances. A written submission shall also be provided within five working days of the time the discharger becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance.

C. ENFORCEMENT

1. The provision contained in this enforcement section shall not act as a limitation on the statutory or regulatory authority of the Board.

2. Any violation of the permit constitutes violation of the California Water Code and regulations adopted hereunder and the provisions of the Clean Water Act, and is the basis for enforcement action, permit termination, permit revocation and reissuance, denial of an application for permit reissuance; or a combination thereof.

3. The Board may impose administrative civil liability, may refer a discharger to the State Attorney General to seek civil monetary penalties, may seek injunctive relief or take other appropriate enforcement action as provided in the California Water Code or federal law for violation of Board orders.

4. It shall not be a defense for a discharger in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this order and permit.

5. A discharger seeking to establish the occurrence of any upset (See Definitions, G. 24) has the burden of proof. A discharger who wishes to establish the affirmative defense of any upset in an action brought for noncompliance shall demonstrate, through properly signed contemporaneous operating logs, or other relevant evidence that:

a. an upset occurred and that the Permittee can identify the cause(s) or the upset;

b. the permitted facility was being properly operated at the time of the upset;

c. the discharger submitted notice of the upset as required in paragraph E.6.d.; and

d. the discharger complied with any remedial measures required under A.4.

No determination made before an action for noncompliance, such as during administrative review of claims that noncompliance was caused by an upset, is final administrative action subject to judicial review.
In any enforcement proceeding, the discharger seeking to establish the occurrence of any upset has the burden of proof. [40 CFR 122.41(n)]

D. DEFINITIONS

1. Duly authorized representative is one whose:

a. Authorization is made in writing by a principal executive officer or ranking elected official;

b. Authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as general manager in a partnership, manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company. (A duly authorized representative may thus be either a named individual or any individual occupying a named position.); and

c. Written authorization is submitted to the U.S. EPA Region 9. If an authorization becomes no longer accurate because a different individual or position has

responsibility for the overall operation of the facility, a new authorization satisfying the requirements above must be submitted to the Board and U.S. EPA Region 9 prior to or together with any reports, information, or applications to be signed by an authorized representative.

2. Hazardous substance means any substance designated under 40 CFR 116 pursuant to Section 311 of the Clean Water Act.

3. Priority pollutants are those constituents referred to in 40 CFR S122, Appendix D and listed in the U.S. EPA NPDES Application Form 2C, (dated 6/80) Items V-3 through V-9.

4. Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage. It excludes infiltration and runoff from agricultural land.

5. Toxic pollutant means any pollutant listed as toxic under Section 307(a)(1) of the Clean Water Act or under 40 CFR S401.15.

6. Waste, waste discharge, discharge of waste, and discharge are used interchangeably in this order and permit. The requirements of this order and permit are applicable to the entire volume of water, and the material therein, which is disposed of to surface and ground waters of the State of California.

EXHIBIT 3

KeyCite Yellow Flag - Negative Treatment
Proposed Legislation

United States Code Annotated
Title 33. Navigation and Navigable Waters (Refs & Annos)
Chapter 26. Water Pollution Prevention and Control (Refs & Annos)
Subchapter IV. Permits and Licenses (Refs & Annos)

33 U.S.C.A. § 1342

§ 1342. National pollutant discharge elimination system

Effective: February 7, 2014
Currentness

(a) Permits for discharge of pollutants

(1) Except as provided in sections 1328 and 1344 of this title, the Administrator may, after opportunity for public hearing issue a permit for the discharge of any pollutant, or combination of pollutants, notwithstanding section 1311(a) of this title, upon condition that such discharge will meet either (A) all applicable requirements under sections 1311, 1312, 1316, 1317, 1318, and 1343 of this title, or (B) prior to the taking of necessary implementing actions relating to all such requirements, such conditions as the Administrator determines are necessary to carry out the provisions of this chapter.

(2) The Administrator shall prescribe conditions for such permits to assure compliance with the requirements of paragraph (1) of this subsection, including conditions on data and information collection, reporting, and such other requirements as he deems appropriate.

(3) The permit program of the Administrator under paragraph (1) of this subsection, and permits issued thereunder, shall be subject to the same terms, conditions, and requirements as apply to a State permit program and permits issued thereunder under subsection (b) of this section.

(4) All permits for discharges into the navigable waters issued pursuant to section 407 of this title shall be deemed to be permits issued under this subchapter, and permits issued under this subchapter shall be deemed to be permits issued under section 407 of this title, and shall continue in force and effect for their term unless revoked, modified, or suspended in accordance with the provisions of this chapter.

(5) No permit for a discharge into the navigable waters shall be issued under section 407 of this title after October 18, 1972. Each application for a permit under section 407 of this title, pending on October 18, 1972, shall be deemed to be an application for a permit under this section. The Administrator shall authorize a State, which he determines has the capability of administering a permit program which will carry out the objectives of this chapter to issue permits for discharges into the navigable waters within the jurisdiction of such State. The Administrator may exercise the authority granted him by the preceding sentence only during the period which begins on October 18, 1972, and ends either on the ninetieth day after the date of the first promulgation of guidelines required by section 1314(i)(2) of this title, or the date of approval by the Administrator of a permit program for such State under subsection (b) of this section, whichever date first occurs, and no such authorization to a State shall extend beyond the last day of such period. Each such permit shall

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be subject to such conditions as the Administrator determines are necessary to carry out the provisions of this chapter. No such permit shall issue if the Administrator objects to such issuance.

(b) State permit programs

At any time after the promulgation of the guidelines required by subsection (i)(2) of section 1314 of this title, the Governor of each State desiring to administer its own permit program for discharges into navigable waters within its jurisdiction may submit to the Administrator a full and complete description of the program it proposes to establish and administer under State law or under an interstate compact. In addition, such State shall submit a statement from the attorney general (or the attorney for those State water pollution control agencies which have independent legal counsel), or from the chief legal officer in the case of an interstate agency, that the laws of such State, or the interstate compact, as the case may be, provide adequate authority to carry out the described program. The Administrator shall approve each submitted program unless he determines that adequate authority does not exist:

(1) To issue permits which--

(A) apply, and insure compliance with, any applicable requirements of sections 1311, 1312, 1316, 1317, and 1343 of this title;

(B) are for fixed terms not exceeding five years; and

(C) can be terminated or modified for cause including, but not limited to, the following:

(i) violation of any condition of the permit;

(ii) obtaining a permit by misrepresentation, or failure to disclose fully all relevant facts;

(iii) change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge;

(D) control the disposal of pollutants into wells;

(2)(A) To issue permits which apply, and insure compliance with, all applicable requirements of section 1318 of this title; or

(B) To inspect, monitor, enter, and require reports to at least the same extent as required in section 1318 of this title;

(3) To insure that the public, and any other State the waters of which may be affected, receive notice of each application for a permit and to provide an opportunity for public hearing before a ruling on each such application;

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(4) To insure that the Administrator receives notice of each application (including a copy thereof) for a permit;

(5) To insure that any State (other than the permitting State), whose waters may be affected by the issuance of a permit may submit written recommendations to the permitting State (and the Administrator) with respect to any permit application and, if any part of such written recommendations are not accepted by the permitting State, that the permitting State will notify such affected State (and the Administrator) in writing of its failure to so accept such recommendations together with its reasons for so doing;

(6) To insure that no permit will be issued if, in the judgment of the Secretary of the Army acting through the Chief of Engineers, after consultation with the Secretary of the department in which the Coast Guard is operating, anchorage and navigation of any of the navigable waters would be substantially impaired thereby;

(7) To abate violations of the permit or the permit program, including civil and criminal penalties and other ways and means of enforcement;

(8) To insure that any permit for a discharge from a publicly owned treatment works includes conditions to require the identification in terms of character and volume of pollutants of any significant source introducing pollutants subject to pretreatment standards under section 1317(b) of this title into such works and a program to assure compliance with such pretreatment standards by each such source, in addition to adequate notice to the permitting agency of (A) new introductions into such works of pollutants from any source which would be a new source as defined in section 1316 of this title if such source were discharging pollutants, (B) new introductions of pollutants into such works from a source which would be subject to section 1311 of this title if it were discharging such pollutants, or (C) a substantial change in volume or character of pollutants being introduced into such works by a source introducing pollutants into such works at the time of issuance of the permit. Such notice shall include information on the quality and quantity of effluent to be introduced into such treatment works and any anticipated impact of such change in the quantity or quality of effluent to be discharged from such publicly owned treatment works; and

(9) To insure that any industrial user of any publicly owned treatment works will comply with sections 1284(b), 1317, and 1318 of this title.

(c) Suspension of Federal program upon submission of State program; withdrawal of approval of State program; return of State program to Administrator

(1) Not later than ninety days after the date on which a State has submitted a program (or revision thereof) pursuant to subsection (b) of this section, the Administrator shall suspend the issuance of permits under subsection (a) of this section as to those discharges subject to such program unless he determines that the State permit program does not meet the requirements of subsection (b) of this section or does not conform to the guidelines issued under section 1314(i)(2) of this title. If the Administrator so determines, he shall notify the State of any revisions or modifications necessary to conform to such requirements or guidelines.

(2) Any State permit program under this section shall at all times be in accordance with this section and guidelines promulgated pursuant to section 1314(i)(2) of this title.

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(3) Whenever the Administrator determines after public hearing that a State is not administering a program approved under this section in accordance with requirements of this section, he shall so notify the State and, if appropriate corrective action is not taken within a reasonable time, not to exceed ninety days, the Administrator shall withdraw approval of such program. The Administrator shall not withdraw approval of any such program unless he shall first have notified the State, and made public, in writing, the reasons for such withdrawal.

(4) Limitations on partial permit program returns and withdrawals

A State may return to the Administrator administration, and the Administrator may withdraw under paragraph (3) of this subsection approval, of--

(A) a State partial permit program approved under subsection (n)(3) only if the entire permit program being administered by the State department or agency at the time is returned or withdrawn; and

(B) a State partial permit program approved under subsection (n)(4) only if an entire phased component of the permit program being administered by the State at the time is returned or withdrawn.

(d) Notification of Administrator

(1) Each State shall transmit to the Administrator a copy of each permit application received by such State and provide notice to the Administrator of every action related to the consideration of such permit application, including each permit proposed to be issued by such State.

(2) No permit shall issue (A) if the Administrator within ninety days of the date of his notification under subsection (b)(5) of this section objects in writing to the issuance of such permit, or (B) if the Administrator within ninety days of the date of transmittal of the proposed permit by the State objects in writing to the issuance of such permit as being outside the guidelines and requirements of this chapter. Whenever the Administrator objects to the issuance of a permit under this paragraph such written objection shall contain a statement of the reasons for such objection and the effluent limitations and conditions which such permit would include if it were issued by the Administrator.

(3) The Administrator may, as to any permit application, waive paragraph (2) of this subsection.

(4) In any case where, after December 27, 1977, the Administrator, pursuant to paragraph (2) of this subsection, objects to the issuance of a permit, on request of the State, a public hearing shall be held by the Administrator on such objection. If the State does not resubmit such permit revised to meet such objection within 30 days after completion of the hearing, or, if no hearing is requested within 90 days after the date of such objection, the Administrator may issue the permit pursuant to subsection (a) of this section for such source in accordance with the guidelines and requirements of this chapter.

(e) Waiver of notification requirement

In accordance with guidelines promulgated pursuant to subsection (i)(2) of section 1314 of this title, the Administrator is authorized to waive the requirements of subsection (d) of this section at the time he approves a program pursuant to

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subsection (b) of this section for any category (including any class, type, or size within such category) of point sources within the State submitting such program.

(f) Point source categories

The Administrator shall promulgate regulations establishing categories of point sources which he determines shall not be subject to the requirements of subsection (d) of this section in any State with a program approved pursuant to subsection (b) of this section. The Administrator may distinguish among classes, types, and sizes within any category of point sources.

(g) Other regulations for safe transportation, handling, carriage, storage, and stowage of pollutants

Any permit issued under this section for the discharge of pollutants into the navigable waters from a vessel or other floating craft shall be subject to any applicable regulations promulgated by the Secretary of the department in which the Coast Guard is operating, establishing specifications for safe transportation, handling, carriage, storage, and stowage of pollutants.

(h) Violation of permit conditions; restriction or prohibition upon introduction of pollutant by source not previously utilizing treatment works

In the event any condition of a permit for discharges from a treatment works (as defined in section 1292 of this title) which is publicly owned is violated, a State with a program approved under subsection (b) of this section or the Administrator, where no State program is approved or where the Administrator determines pursuant to section 1319(a) of this title that a State with an approved program has not commenced appropriate enforcement action with respect to such permit, may proceed in a court of competent jurisdiction to restrict or prohibit the introduction of any pollutant into such treatment works by a source not utilizing such treatment works prior to the finding that such condition was violated.

(i) Federal enforcement not limited

Nothing in this section shall be construed to limit the authority of the Administrator to take action pursuant to section 1319 of this title.

(j) Public information

A copy of each permit application and each permit issued under this section shall be available to the public. Such permit application or permit, or portion thereof, shall further be available on request for the purpose of reproduction.

(k) Compliance with permits

Compliance with a permit issued pursuant to this section shall be deemed compliance, for purposes of sections 1319 and 1365 of this title, with sections 1311, 1312, 1316, 1317, and 1343 of this title, except any standard imposed under section 1317 of this title for a toxic pollutant injurious to human health. Until December 31, 1974, in any case where a permit for discharge has been applied for pursuant to this section, but final administrative disposition of such application has not been made, such discharge shall not be a violation of (1) section 1311, 1316, or 1342 of this title, or (2) section 407 of this title, unless the Administrator or other plaintiff proves that final administrative disposition of such application

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has not been made because of the failure of the applicant to furnish information reasonably required or requested in order to process the application. For the 180-day period beginning on October 18, 1972, in the case of any point source discharging any pollutant or combination of pollutants immediately prior to such date which source is not subject to section 407 of this title, the discharge by such source shall not be a violation of this chapter if such a source applies for a permit for discharge pursuant to this section within such 180-day period.

(l) Limitation on permit requirement

(1) Agricultural return flows

The Administrator shall not require a permit under this section for discharges composed entirely of return flows from irrigated agriculture, nor shall the Administrator directly or indirectly, require any State to require such a permit.

(2) Stormwater runoff from oil, gas, and mining operations

The Administrator shall not require a permit under this section, nor shall the Administrator directly or indirectly require any State to require a permit, for discharges of stormwater runoff from mining operations or oil and gas exploration, production, processing, or treatment operations or transmission facilities, composed entirely of flows which are from conveyances or systems of conveyances (including but not limited to pipes, conduits, ditches, and channels) used for collecting and conveying precipitation runoff and which are not contaminated by contact with, or do not come into contact with, any overburden, raw material, intermediate products, finished product, byproduct, or waste products located on the site of such operations.

(3) Silvicultural activities

(A) NPDES permit requirements for silvicultural activities

The Administrator shall not require a permit under this section nor directly or indirectly require any State to require a permit under this section for a discharge from runoff resulting from the conduct of the following silviculture activities conducted in accordance with standard industry practice: nursery operations, site preparation, reforestation and subsequent cultural treatment, thinning, prescribed burning, pest and fire control, harvesting operations, surface drainage, or road construction and maintenance.

(B) Other requirements

Nothing in this paragraph exempts a discharge from silvicultural activity from any permitting requirement under section 1344 of this title, existing permitting requirements under section 1342 of this title, or from any other federal law.

(C) The authorization provided in Section [1] 1365(a) of this title does not apply to any non-permitting program established under 1342(p)(6) [2] of this title for the silviculture activities listed in 1342(l)(3)(A) [3] of this title, or to any other limitations that might be deemed to apply to the silviculture activities listed in 1342(l)(3)(A) [3] of this title.

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(m) Additional pretreatment of conventional pollutants not required

To the extent a treatment works (as defined in section 1292 of this title) which is publicly owned is not meeting the requirements of a permit issued under this section for such treatment works as a result of inadequate design or operation of such treatment works, the Administrator, in issuing a permit under this section, shall not require pretreatment by a person introducing conventional pollutants identified pursuant to section 1314(a)(4) of this title into such treatment works other than pretreatment required to assure compliance with pretreatment standards under subsection (b)(8) of this section and section 1317(b)(1) of this title. Nothing in this subsection shall affect the Administrator's authority under sections 1317 and 1319 of this title, affect State and local authority under sections 1317(b)(4) and 1370 of this title, relieve such treatment works of its obligations to meet requirements established under this chapter, or otherwise preclude such works from pursuing whatever feasible options are available to meet its responsibility to comply with its permit under this section.

(n) Partial permit program

(1) State submission

The Governor of a State may submit under subsection (b) of this section a permit program for a portion of the discharges into the navigable waters in such State.

(2) Minimum coverage

A partial permit program under this subsection shall cover, at a minimum, administration of a major category of the discharges into the navigable waters of the State or a major component of the permit program required by subsection (b).

(3) Approval of major category partial permit programs

The Administrator may approve a partial permit program covering administration of a major category of discharges under this subsection if--

(A) such program represents a complete permit program and covers all of the discharges under the jurisdiction of a department or agency of the State; and

(B) the Administrator determines that the partial program represents a significant and identifiable part of the State program required by subsection (b).

(4) Approval of major component partial permit programs

The Administrator may approve under this subsection a partial and phased permit program covering administration of a major component (including discharge categories) of a State permit program required by subsection (b) if--

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(A) the Administrator determines that the partial program represents a significant and identifiable part of the State program required by subsection (b); and

(B) the State submits, and the Administrator approves, a plan for the State to assume administration by phases of the remainder of the State program required by subsection (b) by a specified date not more than 5 years after submission of the partial program under this subsection and agrees to make all reasonable efforts to assume such administration by such date.

(o) Anti-backsliding

(1) General prohibition

In the case of effluent limitations established on the basis of subsection (a)(1)(B) of this section, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 1314(b) of this title subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit. In the case of effluent limitations established on the basis of section 1311(b)(1)(C) or section 1313(d) or (e) of this title, a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in compliance with section 1313(d)(4) of this title.

(2) Exceptions

A permit with respect to which paragraph (1) applies may be renewed, reissued, or modified to contain a less stringent effluent limitation applicable to a pollutant if--

(A) material and substantial alterations or additions to the permitted facility occurred after permit issuance which justify the application of a less stringent effluent limitation;

(B)(i) information is available which was not available at the time of permit issuance (other than revised regulations, guidance, or test methods) and which would have justified the application of a less stringent effluent limitation at the time of permit issuance; or

(ii) the Administrator determines that technical mistakes or mistaken interpretations of law were made in issuing the permit under subsection (a)(1)(B);

(C) a less stringent effluent limitation is necessary because of events over which the permittee has no control and for which there is no reasonably available remedy;

(D) the permittee has received a permit modification under section 1311(c), 1311(g), 1311(h), 1311(i), 1311(k), 1311(n), or 1326(a) of this title; or

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(E) the permittee has installed the treatment facilities required to meet the effluent limitations in the previous permit and has properly operated and maintained the facilities but has nevertheless been unable to achieve the previous effluent limitations, in which case the limitations in the reviewed, reissued, or modified permit may reflect the level of pollutant control actually achieved (but shall not be less stringent than required by effluent guidelines in effect at the time of permit renewal, reissuance, or modification).

Subparagraph (B) shall not apply to any revised waste load allocations or any alternative grounds for translating water quality standards into effluent limitations, except where the cumulative effect of such revised allocations results in a decrease in the amount of pollutants discharged into the concerned waters, and such revised allocations are not the result of a discharger eliminating or substantially reducing its discharge of pollutants due to complying with the requirements of this chapter or for reasons otherwise unrelated to water quality.

(3) Limitations

In no event may a permit with respect to which paragraph (1) applies be renewed, reissued, or modified to contain an effluent limitation which is less stringent than required by effluent guidelines in effect at the time the permit is renewed, reissued, or modified. In no event may such a permit to discharge into waters be renewed, reissued, or modified to contain a less stringent effluent limitation if the implementation of such limitation would result in a violation of a water quality standard under section 1313 of this title applicable to such waters.

(p) Municipal and industrial stormwater discharges

(1) General rule

Prior to October 1, 1994, the Administrator or the State (in the case of a permit program approved under this section) shall not require a permit under this section for discharges composed entirely of stormwater.

(2) Exceptions

Paragraph (1) shall not apply with respect to the following stormwater discharges:

(A) A discharge with respect to which a permit has been issued under this section before February 4, 1987.

(B) A discharge associated with industrial activity.

(C) A discharge from a municipal separate storm sewer system serving a population of 250,000 or more.

(D) A discharge from a municipal separate storm sewer system serving a population of 100,000 or more but less than 250,000.

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(E) A discharge for which the Administrator or the State, as the case may be, determines that the stormwater discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.

(3) Permit requirements

(A) Industrial discharges

Permits for discharges associated with industrial activity shall meet all applicable provisions of this section and section 1311 of this title.

(B) Municipal discharge

Permits for discharges from municipal storm sewers--

(i) may be issued on a system- or jurisdiction-wide basis;

(ii) shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and

(iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.

(4) Permit application requirements

(A) Industrial and large municipal discharges

Not later than 2 years after February 4, 1987, the Administrator shall establish regulations setting forth the permit application requirements for stormwater discharges described in paragraphs (2)(B) and (2)(C). Applications for permits for such discharges shall be filed no later than 3 years after February 4, 1987. Not later than 4 years after February 4, 1987, the Administrator or the State, as the case may be, shall issue or deny each such permit. Any such permit shall provide for compliance as expeditiously as practicable, but in no event later than 3 years after the date of issuance of such permit.

(B) Other municipal discharges

Not later than 4 years after February 4, 1987, the Administrator shall establish regulations setting forth the permit application requirements for stormwater discharges described in paragraph (2)(D). Applications for permits for such discharges shall be filed no later than 5 years after February 4, 1987. Not later than 6 years after February 4, 1987, the Administrator or the State, as the case may be, shall issue or deny each such permit. Any such permit shall provide for compliance as expeditiously as practicable, but in no event later than 3 years after the date of issuance of such permit.

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(5) Studies

The Administrator, in consultation with the States, shall conduct a study for the purposes of--

(A) identifying those stormwater discharges or classes of stormwater discharges for which permits are not required pursuant to paragraphs (1) and (2) of this subsection;

(B) determining, to the maximum extent practicable, the nature and extent of pollutants in such discharges; and

(C) establishing procedures and methods to control stormwater discharges to the extent necessary to mitigate impacts on water quality.

Not later than October 1, 1988, the Administrator shall submit to Congress a report on the results of the study described in subparagraphs (A) and (B). Not later than October 1, 1989, the Administrator shall submit to Congress a report on the results of the study described in subparagraph (C).

(6) Regulations

Not later than October 1, 1993, the Administrator, in consultation with State and local officials, shall issue regulations (based on the results of the studies conducted under paragraph (5)) which designate stormwater discharges, other than those discharges described in paragraph (2), to be regulated to protect water quality and shall establish a comprehensive program to regulate such designated sources. The program shall, at a minimum, (A) establish priorities, (B) establish requirements for State stormwater management programs, and (C) establish expeditious deadlines. The program may include performance standards, guidelines, guidance, and management practices and treatment requirements, as appropriate.

(q) Combined sewer overflows

(1) Requirement for permits, orders, and decrees

Each permit, order, or decree issued pursuant to this chapter after December 21, 2000, for a discharge from a municipal combined storm and sanitary sewer shall conform to the Combined Sewer Overflow Control Policy signed by the Administrator on April 11, 1994 (in this subsection referred to as the "CSO control policy").

(2) Water quality and designated use review guidance

Not later than July 31, 2001, and after providing notice and opportunity for public comment, the Administrator shall issue guidance to facilitate the conduct of water quality and designated use reviews for municipal combined sewer overflow receiving waters.

(3) Report

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Not later than September 1, 2001, the Administrator shall transmit to Congress a report on the progress made by the Environmental Protection Agency, States, and municipalities in implementing and enforcing the CSO control policy.

(r) Discharges incidental to the normal operation of recreational vessels

No permit shall be required under this chapter by the Administrator (or a State, in the case of a permit program approved under subsection (b)) for the discharge of any graywater, bilge water, cooling water, weather deck runoff, oil water separator effluent, or effluent from properly functioning marine engines, or any other discharge that is incidental to the normal operation of a vessel, if the discharge is from a recreational vessel.

CREDIT(S)

(June 30, 1948, c. 758, Title IV, § 402, as added Pub.L. 92-500, § 2, Oct. 18, 1972, 86 Stat. 880; amended Pub.L. 95-217, §§ 33(c), 50, 54(c)(1), 65, 66, Dec. 27, 1977, 91 Stat. 1577, 1588, 1591, 1599, 1600; Pub.L. 100-4, Title IV, §§ 401 to 404(a), (c), formerly (d), 405, Feb. 4, 1987, 101 Stat. 65 to 67, 69; Pub.L. 102-580, Title III, § 364, Oct. 31, 1992, 106 Stat. 4862; Pub.L. 104-66, Title II, § 2021(e)(2), Dec. 21, 1995, 109 Stat. 727; Pub.L. 106-554, § 1(a)(4) [Div. B, Title I, § 112(a)], Dec. 21, 2000, 114 Stat. 2763, 2763A-224; Pub.L. 110-288, § 2, July 29, 2008, 122 Stat. 2650; Pub.L. 113-79, Title XII, § 12313, Feb. 7, 2014, 128 Stat. 992.)

Notes of Decisions (238)

Footnotes

1 So in original. Probably should not be capitalized.

2 So in original. Probably should read “section 1342(p)(6)”.

3 So in original. Probably should read “section 1342(l)(3)(A)”.

33 U.S.C.A. § 1342, 33 USCA § 1342

Current through P.L. 115-40.

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United States Code Annotated
Title 33. Navigation and Navigable Waters (Refs & Annos)
Chapter 26. Water Pollution Prevention and Control (Refs & Annos)
Subchapter V. General Provisions

33 U.S.C.A. § 1371

§ 1371. Authority under other laws and regulations

Currentness

(a) Impairment of authority or functions of officials and agencies; treaty provisions

This chapter shall not be construed as (1) limiting the authority or functions of any officer or agency of the United States under any other law or regulation not inconsistent with this chapter; (2) affecting or impairing the authority of the Secretary of the Army (A) to maintain navigation or (B) under the Act of March 3, 1899, (30 Stat. 1112); except that any permit issued under section 1344 of this title shall be conclusive as to the effect on water quality of any discharge resulting from any activity subject to section 403 of this title, or (3) affecting or impairing the provisions of any treaty of the United States.

(b) Discharges of pollutants into navigable waters

Discharges of pollutants into the navigable waters subject to the Rivers and Harbors Act of 1910 (36 Stat. 593; 33 U.S.C. 421) and the Supervisory Harbors Act of 1888 (25 Stat. 209; 33 U.S.C. 441-451b) shall be regulated pursuant to this chapter, and not subject to such Act of 1910 and the Act of 1888 except as to effect on navigation and anchorage.

(c) Action of the Administrator deemed major Federal action; construction of the National Environmental Policy Act of 1969

(1) Except for the provision of Federal financial assistance for the purpose of assisting the construction of publicly owned treatment works as authorized by section 1281 of this title, and the issuance of a permit under section 1342 of this title for the discharge of any pollutant by a new source as defined in section 1316 of this title, no action of the Administrator taken pursuant to this chapter shall be deemed a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act of 1969 (83 Stat. 852) [42 U.S.C.A. § 4321 et seq.]; and

(2) Nothing in the National Environmental Policy Act of 1969 (83 Stat. 852) shall be deemed to--

(A) authorize any Federal agency authorized to license or permit the conduct of any activity which may result in the discharge of a pollutant into the navigable waters to review any effluent limitation or other requirement established pursuant to this chapter or the adequacy of any certification under section 1341 of this title; or

(B) authorize any such agency to impose, as a condition precedent to the issuance of any license or permit, any effluent limitation other than any such limitation established pursuant to this chapter.

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(d) Consideration of international water pollution control agreements

Notwithstanding this chapter or any other provision of law, the Administrator (1) shall not require any State to consider in the development of the ranking in order of priority of needs for the construction of treatment works (as defined in subchapter II of this chapter), any water pollution control agreement which may have been entered into between the United States and any other nation, and (2) shall not consider any such agreement in the approval of any such priority ranking.

CREDIT(S)

(June 30, 1948, c. 758, Title V, § 511, as added Pub.L. 92-500, § 2, Oct. 18, 1972, 86 Stat. 893; amended Pub.L. 93-243, § 3, Jan. 2, 1974, 87 Stat. 1069.)

Notes of Decisions (12)

33 U.S.C.A. § 1371, 33 USCA § 1371
Current through P.L. 115-40.

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KeyCite Yellow Flag - Negative Treatment
Distinguished by Pennsylvania Federation of Sportsmen's Clubs, Inc. v. Hess, 3rd Cir.(Pa.), July 24, 2002

112 S.Ct. 1046
Supreme Court of the United States

ARKANSAS, et al., Petitioners,
v.
OKLAHOMA et al.
ENVIRONMENTAL PROTECTION AGENCY, Petitioner,
v.
OKLAHOMA et al.

Nos. 90–1262, 90–1266.
|
Argued Dec. 11, 1991.
|
Decided Feb. 26, 1992.

Consolidated appeals were taken from the Environmental Protection Agency's (EPA) issuance to Arkansas city of discharge permit pursuant to National Pollutant Discharge Elimination System (NPDES) of the Clean Water Act. The Court of Appeals for the Tenth Circuit, 908 F.2d 595, found that the Clean Water Act did not allow permit to be issued. Certiorari was granted. The Supreme Court, Justice Stevens, held that: (1) the Clean Water Act authorized the EPA's issuance of an NPDES permit to allow an Arkansas sewage treatment plant to discharge effluent into Illinois River which ultimately reached Oklahoma, and (2) EPA's interpretation of Oklahoma's water quality standards was entitled to substantial deference.

Reversed.

Opinion on remand, 962 F.2d 996.

West Headnotes (16)

[1] **Environmental Law**
Concurrent and Conflicting Statutes or Regulations
Environmental Law
Federal preemption
Nuisance
Nature and elements of public nuisance in general
States
Environment;nuclear projects

In cases involving controversies between state which introduces pollutants to waterway and downstream state which objects, federal common law of nuisance and affected state's common law are preempted; only state law applicable to interstate discharge is law of state in which point source is located. Federal Water Pollution Control Act Amendments of 1972, §§ 402(b), 510, as amended, 33 U.S.C.A. §§ 1342(b), 1370.

6 Cases that cite this headnote

[2] **Environmental Law**
Permit and certification proceedings

States which are affected by another state's discharge of effluent into a waterway may not block issuance of discharge permit but must apply to Environmental Protection Agency (EPA) administrator, who has discretion to disapprove permit if he concludes that discharges will have undue impact on interstate waters. Federal Water Pollution Control Act Amendments of 1972, §§ 402(b), 510, as amended, 33 U.S.C.A. §§ 1342(b), 1370.

3 Cases that cite this headnote

[3] **Environmental Law**
Discharge of pollutants

Clean Water Act requires that permits issued by Environmental Protection Agency (EPA) allowing discharge of effluent into interstate waterway comply with requirements for permit issued under approved state plan and with section of Clean Water Act which appears to prohibit issuance of federal permit over objection of affected state unless compliance with affected state's water quality requirements can be insured. Federal Water Pollution Control Act Amendments of 1972,

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§§ 401(a), (a)(2), 402, 402(a), (a)(3), (b), (d)(2), as amended, 33 U.S.C.A. §§ 1341(a), (a)(2), 1342, 1342(a), (a)(3), (b), (d)(2).

20 Cases that cite this headnote

[4] **Environmental Law**
Conditions and limitations

Environmental Protection Agency (EPA) requirement for National Pollution Discharge Elimination System (NPDES) permit that discharge of effluent from Arkansas sewage treatment plant comply with Oklahoma's water quality standards was reasonable exercise of agency's statutory discretion; discharge into Illinois River would travel through Arkansas and over Oklahoma border. Federal Water Pollution Control Act Amendments of 1972, §§ 401(a), 402(a, b), as amended, 33 U.S.C.A. §§ 1341(a), 1342(a, b).

31 Cases that cite this headnote

[5] **Environmental Law**
Interstate pollution

Even if Clean Water Act itself did not require that discharge of effluent from one state comply with water quality standards of another, statute did not limit Environmental Protection Agency's (EPA) authority to mandate that compliance. Federal Water Pollution Control Act Amendments of 1972, §§ 401(a), 402(a, b), as amended, 33 U.S.C.A. §§ 1341(a), 1342(a, b).

20 Cases that cite this headnote

[6] **Environmental Law**
Conditions and limitations

Environmental Protection Agency (EPA) regulations, which provide that National Pollution Discharge Elimination System (NPDES) permit may not be issued if the imposition of conditions would not insure compliance with the applicable water quality requirements of all affected states, were a reasonable exercise of EPA's authority. Federal Water Pollution Control Act Amendments of 1972, §§ 101(a), 301(b)(1)(C), 402(a)(1, 2), (b), (d)(2), as amended, 33 U.S.C.A. §§ 1251(a), 1311(b)(1)(C), 1342(a)(1, 2), (b), (d)(2).

32 Cases that cite this headnote

[7] **Environmental Law**
Interstate pollution

Placing limits on affected state's direct participation in permitting decision concerning the granting of NPDES permit to discharge effluent into interstate waterways did not constrain Environmental Protection Agency's (EPA) authority to require that point source comply with downstream water quality standards. Federal Water Pollution Control Act Amendments of 1972, §§ 101(a), 301(b)(1)(C), 402(a)(1, 2), (b), (d)(2), as amended, 33 U.S.C.A. §§ 1251(a), 1311(b)(1)(C), 1342(a)(1, 2), (b), (d)(2).

28 Cases that cite this headnote

[8] **Environmental Law**
Interstate pollution

Environmental Protection Agency's (EPA) requirement that discharge of effluent from Arkansas sewage treatment plant into Illinois River basin must comply with Oklahoma's water quality standards was reasonable exercise of agency's substantial statutory discretion. Federal Water Pollution Control Act Amendments of 1972, §§ 101(a), 301(b)(1)(C), 402(a)(1, 2), (b), (d)(2), as amended, 33 U.S.C.A. §§ 1251(a), 1311(b)(1)(C), 1342(a)(1, 2), (b), (d)(2).

8 Cases that cite this headnote

[9] **Environmental Law**
Water Quality Standards or Plans

Clean Water Act does not prohibit any discharge of effluent that would reach waters already in violation of existing water quality standards; nothing in Act mandates complete ban, but rather vests in Environmental Protection Agency (EPA) and states broad

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authority to develop long-range, area-wide programs to alleviate and eliminate existing pollution. Federal Water Pollution Control Act Amendments of 1972, § 402(h), as amended, 33 U.S.C.A. § 1342(h).

10 Cases that cite this headnote

[10] **Environmental Law**
Water pollution

Court of Appeals exceeded legitimate scope of judicial review of agency adjudication by finding that Environmental Protection Agency (EPA) had misinterpreted Oklahoma law with regard to discharge of effluent into interstate waterway Court of Appeals substituted its own reading of the law for EPA's and thus failed to give required substantial deference to agency's reasonable interpretation. Federal Water Pollution Control Act Amendments of 1972, §§ 208(b)(2), 301(b)(1)(C), 303(d), 402(h), as amended, 33 U.S.C.A. §§ 1288(b)(2), 1311(b)(1)(C), 1313(d), 1342(h).

37 Cases that cite this headnote

[11] **Environmental Law**
Power to regulate

States
Environment;nuclear projects

Interstate water pollution is controlled by federal law.

3 Cases that cite this headnote

[12] **Environmental Law**
Interstate pollution

Evidence supported finding by ALJ that discharge from Fayetteville, Arkansas, sewage treatment plant into interstate Illinois River basin would not violate Oklahoma water quality standards. Federal Water Pollution Control Act Amendments of 1972, §§ 208(b)(2), 301(b)(1)(C), 303(d), 402(h), as amended, 33 U.S.C.A. §§ 1288(b)(2), 1311(b)(1)(C), 1313(d), 1342(h).

58 Cases that cite this headnote

[13] **Administrative Law and Procedure**
Administrative construction

Environmental Law
Scope of Inquiry on Review of Administrative Decision

Environmental Protection Agency (EPA) is entitled to discretion to interpret its own regulations and those regulations are entitled to appropriate level of deference.

4 Cases that cite this headnote

[14] **Administrative Law and Procedure**
Substantial evidence

Court reviewing agency's adjudication should accept agency's factual findings if those findings are supported by substantial evidence in the record as a whole; court should not supplant agency's findings merely by identifying alternate findings that could be supported by substantial evidence.

391 Cases that cite this headnote

[15] **Administrative Law and Procedure**
Arbitrary, unreasonable or capricious action; illegality

Administrative agency ruling is "arbitrary and capricious" if agency has entirely failed to consider important aspect of problem.

23 Cases that cite this headnote

[16] **Environmental Law**
Water pollution

Court of Appeals made policy choice beyond its authority by ruling that, even if discharge of effluent from Arkansas sewage treatment plant would have no adverse impact on water quality, discharge into Illinois River which would flow through Oklahoma could be prohibited; it was not arbitrary for Environmental Protection Agency (EPA) to conclude, given benefits to river from

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increased flow of relatively clean water, and benefits achieved in Arkansas by allowing new plant to operate as designed, that allowing discharge would be wiser.

7 Cases that cite this headnote

**1049 *Syllabus* *

The Clean Water Act provides for two sets of water quality measures: effluent limitations, which are promulgated by the Environmental Protection Agency (EPA or Agency), and water quality standards, which are promulgated by the States. The Act generally prohibits the discharge of effluent into a navigable body of water unless the point source obtains a National Pollution Discharge Elimination System (NPDES) permit from a State with an EPA-approved permit program or from the EPA itself. A Fayetteville, Arkansas, sewage treatment plant received an EPA-issued permit, authorizing it to discharge effluent into a stream that ultimately reaches the Illinois River upstream from the Oklahoma border. Respondents, Oklahoma and other Oklahoma parties, challenged the permit before the EPA, alleging, *inter alia,* that the discharge violated Oklahoma water quality standards, which allow no degradation of water quality in the upper Illinois River. The EPA's Chief Judicial Officer remanded the initial affirmance of the permit by the Administrative Law Judge (ALJ), ruling that the Act requires an NPDES permit to impose any effluent limitations necessary to comply with applicable state water quality standards, and that those standards would be violated only if the record shows by a preponderance of the evidence that the discharge would cause an actual *detectable* violation of Oklahoma's water quality standards. The ALJ then made detailed findings of fact, concluding that Fayetteville had satisfied the Chief Judicial Officer's standard, and the Chief Judicial Officer sustained the permit's issuance. The Court of Appeals reversed, ruling that the Act does not allow a permit to be issued where a proposed source would discharge effluent that would contribute to conditions currently constituting a violation of applicable water quality standards. It concluded that the Illinois River was already degraded, that the Fayetteville effluent would reach the river in Oklahoma, and that the effluent would contribute to the river's deterioration even though it would not detectably affect the river's water quality.

*92 *Held:* The EPA's action was authorized by the Clean Water Act. Pp. 1052–1061.

(a) Where interstate discharge is involved, both federal common law of nuisance, *Milwaukee v. Illinois,* 451 U.S. 304, 101 S.Ct. 1784, 68 L.Ed.2d 114, and an affected State's common law, *International Paper Co. v. Ouellette,* 479 U.S. 481, 493, 107 S.Ct. 805, 812, 93 L.Ed.2d 883, are pre-empted. Affected States may not block a permit, but must apply to the EPA Administrator, who may disapprove a plan if he concludes that the discharge will have an undue impact on interstate waters. *Id.,* at 490–491, 107 S.Ct., at 809. Pp. 1052–1054.

**1050 (b) The EPA has construed the Act as requiring that EPA-issued permits comply with the requirements for a permit issued under an approved state plan and with § 401(a) of the Act, which appears to prohibit the issuance of a federal permit over the objection of an affected State unless compliance with the affected State's water quality requirements can be insured. Pp. 1054–1055.

(c) The EPA's requirement that the Fayetteville discharge comply with Oklahoma's water quality standards is a reasonable exercise of the substantial statutory discretion Congress has vested in the Agency. There is no need to address the question whether the Act requires compliance with affected States' standards, for it clearly does not limit the EPA's authority to mandate such compliance. EPA regulations, which since 1973 have required that an NPDES permit not be issued when compliance with affected States' water quality standards cannot be insured, are a reasonable exercise of the Agency's discretion and are a well-tailored means of reaching the Act's goal of achieving state water quality standards. The EPA's authority is not constrained by the limits in *Ouellette, supra,* concerning an affected State's direct input into the permit process, does not conflict with the Act's legislative history and statutory scheme, and is not incompatible with the balance among competing policies and interests that Congress struck in the Act. Pp. 1056–1057.

(d) Contrary to the Court of Appeals' interpretation, nothing in the Act mandates a complete ban on discharges into a waterway that is in violation of existing water quality standards. Instead, the Act vests in the EPA and the States broad authority to develop long-range,

area-wide programs to alleviate and eliminate existing pollution. Pp. 1057–1058.

(e) The Court of Appeals exceeded the legitimate scope of judicial review of an agency adjudication when it invalidated the EPA's issuance of the permit on the ground that the Agency misinterpreted Oklahoma's water quality standards. It substituted its own reading of the law for the EPA's. Thus, it failed to give substantial deference to the Agency's reasonable, consistently held interpretation of its own regulations, which incorporate the Oklahoma standards. It also disregarded well-established ***93** standards for reviewing factual findings of agencies by making its own factual findings when the ALJ's findings were supported by substantial evidence. See generally *Universal Camera Corp. v. NLRB,* 340 U.S. 474, 71 S.Ct. 456, 95 L.Ed. 456. As a result, the court's conclusion that the river's degradation was an important and relevant factor which the EPA failed to consider was based on its own erroneous interpretation of the controlling law. Had it been properly respectful of the EPA's permissible reading of the Act—that what matters is not the river's current status, but whether the proposed discharge will have a detectable effect on that status—it would not have adjudged the Agency's decision arbitrary and capricious. Pp. 1058–1061.

908 F.2d 595 (CA10 1990), reversed.

STEVENS, J., delivered the opinion for a unanimous Court.

Attorneys and Law Firms

Lawrence G. Wallace, Washington, D.C., for petitioner, Environmental Protection Agency.

Edward W. Warren, Washington, D.C., for petitioners, Arkansas, et al.

Robert A. Butkin, Oklahoma City, Okl., for respondents.

Opinion

***94** Justice STEVENS delivered the opinion of the Court.

Pursuant to the Clean Water Act, 86 Stat. 816, as amended, 33 U.S.C. § 1251 *et seq.,* the Environmental Protection Agency (EPA or agency) issued a discharge permit to a new point source in Arkansas, about 39 miles upstream from the Oklahoma state line. The question presented in this litigation is whether the EPA's finding that discharges from the new source would not cause a detectable ****1051** violation of Oklahoma's ***95** water quality standards satisfied the EPA's duty to protect the interests of the downstream State. Disagreeing with the Court of Appeals, we hold that the Agency's action was authorized by the statute.

I

In 1985, the city of Fayetteville, Arkansas, applied to the EPA, seeking a permit for the city's new sewage treatment plant under the National Pollution Discharge Elimination System (NPDES). After the appropriate procedures, the EPA, pursuant to § 402(a)(1) of the Act, 33 U.S.C. § 1342(a)(1), issued a permit authorizing the plant to discharge up to half of its effluent (to a limit of 6.1 million gallons per day) into an unnamed stream in northwestern Arkansas. [1] That flow passes through a series of three creeks for about 17 miles, and then enters the Illinois River at a point 22 miles upstream from the Arkansas–Oklahoma border.

The permit imposed specific limitations on the quantity, content, and character of the discharge and also included a number of special conditions, including a provision that if a study then underway indicated that more stringent limitations were necessary to ensure compliance with Oklahoma's water quality standards, the permit would be modified to incorporate those limits. App. 84.

Respondents challenged this permit before the EPA, alleging, *inter alia,* that the discharge violated the Oklahoma water quality standards. Those standards provide that "no degradation [of water quality] shall be allowed" in the upper Illinois River, including the portion of the river immediately downstream from the state line. [2]

***96** Following a hearing, the Administrative Law Judge (ALJ) concluded that the Oklahoma standards would not be implicated unless the contested discharge had "something more than a mere *de minimis* impact" on the State's waters. He found that the discharge would not have an "undue impact" on Oklahoma's waters and, accordingly, affirmed the issuance of the permit. App. to

Pet. for Cert. in No. 90–1262, pp. 101a–103a (emphasis deleted).

On a petition for review, the EPA's Chief Judicial Officer first ruled that § 301(b)(1)(C) of the Clean Water Act "requires an NPDES permit to impose any effluent limitations necessary to comply with applicable state water quality standards." [3] *Id.,* at 116a–117a. He ****1052** then held that the Act ***97** and EPA regulations offered greater protection for the downstream State than the ALJ's "undue impact" standard suggested. He explained the proper standard as follows:

> "[A] mere theoretical impairment of Oklahoma's water quality standards—*i.e.,* an infinitesimal impairment predicted through modeling but not expected to be actually detectable or measurable—should not by itself block the issuance of the permit. In this case, the permit should be upheld if the record shows by a preponderance of the evidence that the authorized discharges would not cause an actual *detectable* violation of Oklahoma's water quality standards." *Id.,* at 117a (emphasis in original).

On remand, the ALJ made detailed findings of fact and concluded that the city had satisfied the standard set forth by the Chief Judicial Officer. Specifically, the ALJ found that there would be no detectable violation of any of the components of Oklahoma's water quality standards. *Id.,* at 127a–143 a. The Chief Judicial Officer sustained the issuance of the permit. *Id.,* at 145a–153a.

Both the petitioners in No. 90–1262 (collectively Arkansas) and the respondents in this litigation sought judicial review. [4] Arkansas argued that the Clean Water Act did not require an Arkansas point source to comply with Oklahoma's water quality standards. Oklahoma challenged the EPA's determination that the Fayetteville discharge would not produce a detectable violation of the Oklahoma standards.

The Court of Appeals did not accept either of these arguments. The court agreed with the EPA that the statute required compliance with Oklahoma's water quality standards, ***98** see 908 F.2d 595, 602–615 (CA10 1990), and did not disagree with the Agency's determination that the discharges from the Fayetteville plant would not produce a detectable violation of those standards. *Id.,* at 631–633. Nevertheless, relying on a theory that neither party had advanced, the Court of Appeals reversed the Agency's issuance of the Fayetteville permit. The court first ruled that the statute requires that "where a proposed source would discharge effluents that would contribute to conditions currently constituting a violation of applicable water quality standards, such [a] proposed source may not be permitted." *Id.,* at 620. Then the court found that the Illinois River in Oklahoma was "already degraded," that the Fayetteville effluent would reach the Illinois River in Oklahoma, and that that effluent could "be expected to contribute to the ongoing deterioration of the scenic [Illinois R]iver" in Oklahoma even though it would not detectably affect the river's water quality. *Id.,* at 621–629.

The importance and the novelty of the Court of Appeals' decision persuaded us to grant certiorari. 499 U.S. 946, 111 S.Ct. 1412, 113 L.Ed.2d 465 (1991). We now reverse.

II

Interstate waters have been a font of controversy since the founding of the Nation. *E.g., Gibbons v. Ogden,* 9 Wheat. 1, 6 L.Ed. 23 (1824). This Court has frequently resolved disputes between States that are separated by a common river, see, *e.g., Ohio v. Kentucky,* 444 U.S. 335, 100 S.Ct. 588, 62 L.Ed.2d 530 (1980), that border the same body of water, see, *e.g.,* ****1053** *New York v. New Jersey,* 256 U.S. 296, 41 S.Ct. 492, 65 L.Ed. 937 (1921), or that are fed by the same river basin, see, *e.g., New Jersey v. New York,* 283 U.S. 336, 51 S.Ct. 478, 75 L.Ed. 1104 (1931).

[1] Among these cases are controversies between a State that introduces pollutants to a waterway and a downstream State that objects. See, *e.g., Missouri v. Illinois,* 200 U.S. 496, 26 S.Ct. 268, 50 L.Ed. 572 (1906). In such cases, this Court has applied principles of common law tempered by a respect for the sovereignty of the States. Compare *id.,* at 521, 26 S.Ct., at 270, with *Georgia v. Tennessee Copper Co.,* 206 U.S. 230, 237, 27 S.Ct. 618, 619, 51 L.Ed. 1038 (1907). In forging what "may ***99** not improperly be called interstate common law," *Illinois v. Milwaukee,* 406 U.S. 91, 105–106, 92 S.Ct. 1385, 1393–1394, 31 L.Ed.2d 712 (1972) (*Milwaukee I*), however, we remained aware "that new federal laws and new federal regulations may in time pre-empt the field of federal common law of nuisance." *Id.,* at 107, 92 S.Ct. at 1395.

In *Milwaukee v. Illinois,* 451 U.S. 304, 101 S.Ct. 1784, 68 L.Ed.2d 114 (1981) (*Milwaukee II*), we held that the Federal Water Pollution Control Act Amendments of 1972 did just that. In addressing Illinois' claim that Milwaukee's discharges into Lake Michigan constituted a nuisance, we held that the comprehensive regulatory regime created by the 1972 amendments pre-empted Illinois' federal common law remedy. We observed that Congress had addressed many of the problems we had identified in *Milwaukee I* by providing a downstream State with an opportunity for a hearing before the source State's permitting agency, by requiring the latter to explain its failure to accept any recommendations offered by the downstream State, and by authorizing the EPA, in its discretion, to veto a source State's issuance of any permit if the waters of another State may be affected. *Milwaukee II,* 451 U.S., at 325–326, 101 S.Ct., at 1796–1797.

In *Milwaukee II,* the Court did not address whether the 1972 amendments had supplanted *state* common law remedies as well as the federal common law remedy. See *id.,* at 310, n. 4. On remand, Illinois argued that § 510 of the Clean Water Act, 33 U.S.C. § 1370, expressly preserved the State's right to adopt and enforce rules that are more stringent than federal standards. [5] The Court of Appeals accepted Illinois' reading of § 510, but held that that section did "no more than ***100** to save the right and jurisdiction of a state to regulate activity occurring within the confines of its boundary waters." *Illinois v. Milwaukee,* 731 F.2d 403, 413 (CA7 1984), cert. denied, 469 U.S. 1196, 105 S.Ct. 979, 83 L.Ed.2d 981 (1985).

[2] This Court subsequently endorsed that analysis in *International Paper Co. v. Ouellette,* 479 U.S. 481, 107 S.Ct. 805, 93 L.Ed.2d 883 (1987), in which Vermont property owners claimed that the pollution discharged into Lake Champlain by a paper company located in New York constituted a nuisance under Vermont law. The Court held the Clean Water Act taken "as a whole, its purposes and its history" pre-empted an action based on the law of the affected State and that the only state law applicable to an interstate discharge is "the law of the State in which the point source is located." *Id.,* at 493, 487, 107 S.Ct. at 812, 809. Moreover, in reviewing § 402(b) of the Act, the Court pointed out that when a new permit is being issued by the source State's permit-granting agency, the downstream State

****1054** "does not have the authority to block the issuance of the permit if it is dissatisfied with the proposed standards. An affected State's only recourse is to apply to the EPA Administrator, who then has the discretion to disapprove the permit if he concludes that the discharges will have an undue impact on interstate waters. § 1342(d)(2).... Thus the Act makes it clear that affected States occupy a subordinate position to source States in the federal regulatory program." *Id.,* at 490–491, 107 S.Ct., at 811. [6]

***101** Unlike the foregoing cases, this litigation involves not a state-issued permit, but a federally issued permit. To explain the significance of this distinction, we comment further on the statutory scheme before addressing the specific issues raised by the parties.

III

The Clean Water Act anticipates a partnership between the States and the Federal Government, animated by a shared objective: "to restore and maintain the chemical, physical, and biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). Toward this end, the Act provides for two sets of water quality measures. "Effluent limitations" are promulgated by the EPA and restrict the quantities, rates, and concentrations of specified substances which are discharged from point sources. See §§ 1311, 1314. "[W]ater quality standards" are, in general, promulgated by the States and establish the desired condition of a waterway. See § 1313. These standards supplement effluent limitations "so that numerous point sources, despite individual compliance with effluent limitations, may be further regulated to prevent water quality from falling below acceptable levels." *EPA v. California ex rel. State Water Resources Control Bd.,* 426 U.S. 200, 205, n. 12, 96 S.Ct. 2022, 2025, n. 12, 48 L.Ed.2d 578 (1976).

The EPA provides States with substantial guidance in the drafting of water quality standards. See generally 40 CFR pt. 131 (1991) (setting forth model water quality standards). Moreover, § 303 of the Act requires, *inter alia,* that state authorities periodically review water quality standards and secure the EPA's approval of any revisions in the standards. If the EPA recommends changes to the standards and the State fails to comply with that recommendation, the Act authorizes the EPA

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to promulgate water quality standards for the State. 33 U.S.C. § 1313(c).

The primary means for enforcing these limitations and standards is the NPDES, enacted in 1972 as a critical part of Congress' "complete rewriting" of federal water pollution ***102** law. *Milwaukee II,* 451 U.S., at 317, 101 S.Ct., at 1793. Section 301(a) of the Act, 33 U.S.C. § 1311(a), generally prohibits the discharge of any effluent into a navigable body of water unless the point source has obtained an NPDES permit. Section 402 establishes the NPDES permitting regime, and describes two types of permitting systems: state permit programs that must satisfy federal requirements and be approved by the EPA, and a federal program administered by the EPA.

Section 402(b) authorizes each State to establish "its own permit program for discharges into navigable waters within its jurisdiction." 33 U.S.C. § 1342(b). Among the requirements the state program must satisfy ****1055** are the procedural protections for downstream States discussed in *Ouellette* and *Milwaukee II.* See §§ 1342(b)(3), (5). [7] Although these provisions do not authorize the downstream State to veto the issuance of a permit for a new point source in another State, the Administrator retains authority to block the issuance of any state-issued permit that is outside the guidelines and requirements of the Act. § 1342(d)(2). [8]

[3] ***103** In the absence of an approved state program, the EPA may issue an NPDES permit under § 402(a) of the Act. (In these cases, for example, because Arkansas had not been authorized to issue NPDES permits when the Fayetteville plant was completed, the permit was issued by the EPA itself.) The EPA's permit program is subject to the "same terms, conditions, and requirements" as a state permit program. 33 U.S.C. § 1342(a)(3). Notwithstanding this general symmetry, the EPA has construed the Act as requiring that EPA-issued NPDES permits also comply with § 401(a). That section, which predates § 402 and the NPDES, applies to a broad category of federal licenses, and sets forth requirements for "[a]ny applicant for a Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters." 33 U.S.C. § 1341(a). Section 401(a)(2) appears to prohibit the issuance of any federal license or permit over the objection of an affected State unless compliance with the affected State's water quality requirements can be ensured. [9]

****1056** ***104** IV

[4] The parties have argued three analytically distinct questions concerning the interpretation of the Clean Water Act. First, does the Act require the EPA, in crafting and issuing a permit to a point source in one State, to apply the water quality standards of downstream States? Second, even if the Act does not *require* as much, does the Agency have the statutory authority to mandate such compliance? Third, does the Act provide, as the Court of Appeals held, that once a body of water fails to meet water quality standards no discharge that yields effluent that reach the degraded waters will be permitted?

In these cases, it is neither necessary nor prudent for us to resolve the first of these questions. In issuing the Fayetteville permit, the EPA assumed it was obligated by both the Act and its own regulations to ensure that the Fayetteville discharge would not violate Oklahoma's standards. See App. to Pet. for Cert. in No. 90–1262, pp. 116a–117a, and n. 14. As we discuss below, this assumption was permissible and reasonable and therefore there is no need for us to address whether the Act requires as much. Moreover, much of the analysis and argument in the briefs of the parties relies on statutory provisions that govern not only federal permits issued pursuant to §§ 401(a) and 402(a), but also state permits issued under § 402(b). It seems unwise to evaluate those arguments in a case such as these, which only involve a federal permit.

[5] ***105** Our decision not to determine at this time the scope of the Agency's statutory *obligations* does not affect our resolution of the second question, which concerns the Agency's statutory *authority.* Even if the Clean Water Act itself does not require the Fayetteville discharge to comply with Oklahoma's water quality standards, the statute clearly does not limit the EPA's authority to mandate such compliance.

[6] Since 1973, EPA regulations have provided that an NPDES permit shall not be issued "[w]hen the imposition of conditions cannot ensure compliance with the applicable water quality requirements of all affected States." [10] 40 CFR § 122.4(d) (1991); see also 38 Fed.Reg. 13533 (1973); 40 CFR § 122.44(d) (1991). Those

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regulations—relied upon by the EPA in the issuance of the Fayetteville permit—constitute a reasonable exercise of the Agency's statutory authority.

Congress has vested in the Administrator broad discretion to establish conditions for NPDES permits. Section 402(a)(2) provides that for EPA-issued permits "[t]he Administrator shall prescribe conditions ... to assure compliance with the requirements of [§ 402(a)(1)] and *such other requirements as he deems appropriate.*" 33 U.S.C. § 1342(a)(2) (emphasis added). Similarly, Congress preserved for the Administrator broad authority to oversee state permit programs:

> "No permit shall issue ... if the Administrator ... objects in writing to the issuance of such permit as being outside the guidelines and requirements of this chapter." § 1342(d)(2).

The regulations relied on by the EPA were a perfectly reasonable exercise of the Agency's statutory discretion. The application of state water quality standards in the interstate context is wholly consistent with the Act's broad purpose "to restore and maintain the chemical, physical, and ***106** biological integrity of the Nation's waters." 33 U.S.C. § 1251(a). Moreover, as noted above, § 301(b)(1)(C) expressly identifies the achievement of state water quality standards as one of the Act's central objectives. The Agency's regulations conditioning NPDES permits are a well-tailored means of achieving this goal.

[7] Notwithstanding this apparent reasonableness, Arkansas argues that our description ****1057** in *Ouellette* of the role of affected States in the permit process and our characterization of the affected States' position as "subordinate," see 479 U.S., at 490–491, 107 S.Ct. at 810–811, indicates that the EPA's application of the Oklahoma standards was error. We disagree. Our statement in *Ouellette* concerned only an affected State's input into the permit process; that input is clearly limited by the plain language of § 402(b). Limits on an affected State's direct participation in permitting decisions, however, do not in any way constrain the *EPA's* authority to require a point source to comply with downstream water quality standards.

Arkansas also argues that regulations requiring compliance with downstream standards are at odds with the legislative history of the Act and with the statutory scheme established by the Act. Although we agree with Arkansas that the Act's legislative history indicates that Congress intended to grant the Administrator discretion in his oversight of the issuance of NPDES permits, [11] we find nothing in that history to indicate that Congress intended to preclude the EPA from establishing a general requirement that such permits be conditioned to ensure compliance with downstream water quality standards.

Similarly, we agree with Arkansas that in the Clean Water Act Congress struck a careful balance among competing policies and interests, but do not find the EPA regulations concerning ***107** the application of downstream water quality standards at all incompatible with that balance. Congress, in crafting the Act, protected certain sovereign interests of the States; for example, § 510 allows States to adopt more demanding pollution-control standards than those established under the Act. Arkansas emphasizes that § 510 preserves such state authority only as it is applied to the waters of the regulating State. Even assuming Arkansas' construction of § 510 is correct, cf. *id.,* at 493, 107 S.Ct., at 812, that section only concerns *state* authority and does not constrain the *EPA's* authority to promulgate reasonable regulations requiring point sources in one State to comply with water quality standards in downstream States.

[8] For these reasons, we find the EPA's requirement that the Fayetteville discharge comply with Oklahoma's water quality standards to be a reasonable exercise of the Agency's substantial statutory discretion. Cf. *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.,* 467 U.S. 837, 842–845, 104 S.Ct. 2778, 2781–2783, 81 L.Ed.2d 694 (1984).

V

[9] The Court of Appeals construed the Clean Water Act to prohibit any discharge of effluent that would reach waters already in violation of existing water quality standards. [12] We find nothing in the Act to support this reading.

****1058** ***108** The interpretation of the statute adopted by the court had not been advanced by any party during the Agency or court proceedings. Moreover, the Court of Appeals candidly acknowledged that its theory "has apparently never before been addressed by a federal court." 908 F.2d, at 620, n. 39. The only statutory

provision the court cited to support its legal analysis was § 402(h), see *id.,* at 633, which merely authorizes the EPA (or a state permit program) to prohibit a publicly owned treatment plant that is violating a condition of its NPDES permit from accepting any additional pollutants for treatment until the ongoing violation has been corrected. See 33 U.S.C. § 1342(h).

Although the Act contains several provisions directing compliance with state water quality standards, see, *e.g.,* § 1311(b)(1)(C), the parties have pointed to nothing that mandates a complete ban on discharges into a waterway that is in violation of those standards. The statute does, however, contain provisions designed to remedy existing water quality violations and to allocate the burden of reducing undesirable discharges between existing sources and new sources. See, *e.g.,* § 1313(d). Thus, rather than establishing the categorical ban announced by the Court of Appeals—which might frustrate the construction of new plants that would improve existing conditions—the Clean Water Act vests in the EPA and the States broad authority to develop long-range, area-wide programs to alleviate and eliminate existing pollution. See, *e.g.,* § 1288(b)(2).

To the extent that the Court of Appeals relied on its interpretation of the Act to reverse the EPA's permitting decision, that reliance was misplaced.

***109** VI

[10] The Court of Appeals also concluded that the EPA's issuance of the Fayetteville permit was arbitrary and capricious because the Agency misinterpreted Oklahoma's water quality standards. The primary difference [13] between the court's and the Agency's interpretation of the standards derives from the court's construction of the Act. Contrary to the EPA's interpretation of the Oklahoma standards, the Court of Appeals read those standards as containing the same categorical ban on new discharges that the court had found in the Clean Water Act itself. Although we do not believe the text of the Oklahoma standards supports the court's reading (indeed, we note that Oklahoma itself had not advanced that interpretation in its briefs in the Court of Appeals), we reject it for a more fundamental reason—namely, that the Court of Appeals exceeded the legitimate scope of judicial review of an agency adjudication. To emphasize the importance of this point, we shall first briefly assess the soundness of the EPA's interpretation and application of the Oklahoma ***110** standards and then comment more specifically on the Court of Appeals' approach.

As discussed above, an EPA regulation requires an NPDES permit to comply "with the applicable water quality requirements of ****1059** all affected States." 40 CFR § 122.4(d) (1991). This regulation effectively incorporates into federal law those state-law standards the Agency reasonably determines to be "applicable." In such a situation, then, state water quality standards—promulgated by the States with substantial guidance from the EPA [14] and approved by the Agency—are part of the federal law of water pollution control.

[11] Two features of the body of law governing water pollution support this conclusion. First, as discussed more thoroughly above, we have long recognized that interstate water pollution is controlled by *federal* law. See *supra,* at 1052–1054. Recognizing that the system of federally approved state standards as applied in the interstate context constitutes federal law is wholly consistent with this principle. Second, treating state standards in interstate controversies as federal law accords with the Act's purpose of authorizing the EPA to create and manage a uniform system of interstate water pollution regulation.

Because we recognize that, at least insofar as they affect the issuance of a permit in another State, the Oklahoma standards have a federal character, the EPA's reasonable, consistently held interpretation of those standards is entitled to substantial deference. Cf. *INS v. National Center for Immigrants' Rights,* 502 U.S. 183, 189–190, 112 S.Ct. 551, 556, 116 L.Ed.2d 546 (1991); *Chevron U.S.A. Inc. v. Natural Resources Defense Council, Inc.,* 467 U.S. 837, 104 S.Ct. 2778, 81 L.Ed.2d 694 (1984). In these cases, the Chief Judicial Officer ruled that the Oklahoma standards—which require that there be "no degradation" of the upper Illinois River—would ***111** only be violated if the discharge effected an "actually detectable or measurable" change in water quality. App. to Pet. for Cert. in No. 90–1262, p. 117a.

This interpretation of the Oklahoma standards is certainly reasonable and consistent with the purposes and principles of the Clean Water Act. As the Chief Judicial Officer noted, "unless there is some method for measuring compliance, there is no way to ensure compliance." *Id.,*

at 118a, n. 16 (internal quotation marks omitted; citation omitted). Moreover, this interpretation of the Oklahoma standards makes eminent sense in the interstate context: If every discharge that had some theoretical impact on a downstream State were interpreted as "degrading" the downstream waters, downstream States might wield an effective veto over upstream discharges.

[12] The EPA's application of those standards in these cases was also sound. On remand, the ALJ scrutinized the record and made explicit factual findings regarding four primary measures of water quality under the Oklahoma standards: eutrophication, [15] esthetics, [16] dissolved oxygen, [17] and ****1060** metals. ***112** [18] In each case, the ALJ found that the Fayetteville discharge would not lead to a detectable change in water quality. He therefore concluded that the Fayetteville discharge would not violate the Oklahoma water quality standards. Because we agree with the Agency's Chief Judicial Officer that these findings are supported by substantial evidence, we conclude that the Court of Appeals should have affirmed both the EPA's construction of the regulations and the issuance of the Fayetteville permit.

In its review of the EPA's interpretation and application of the Oklahoma standards, the Court of Appeals committed three mutually compounding errors.

[13] First, the court failed to give due regard to the EPA's interpretation of its own regulations, as those regulations incorporate the Oklahoma standards. Instead the court voiced its own interpretation of the governing law and concluded that "where a proposed source would discharge effluents that would contribute to conditions currently constituting a violation of applicable water quality standards, such [a] proposed source may not be permitted." 908 F.2d, at 620. As we have already pointed out, that reading of the law is not supported by the statute or by any EPA regulation. The Court of Appeals sat in review of an agency action and should have afforded the EPA's interpretation of the governing law an appropriate level of deference. See generally *Chevron, supra,* 467 U.S., at 842–844, 104 S.Ct., at 2781–2782.

[14] Second, the court disregarded well-established standards for reviewing the factual findings of agencies and instead made its own factual findings. The troubling nature of the court's analysis appears on the face of the opinion itself: At least four times, the court concluded that "there was substantial evidence before the ALJ to support" particular findings which the court thought appropriate, but which were ***113** contrary to those actually made by the ALJ. 908 F.2d, at 620, 625, 627, 629. Although we have long recognized the "substantial evidence" standard in administrative law, the court below turned that analysis on its head. A court reviewing an agency's adjudicative action should accept the *agency's* factual findings if those findings are supported by substantial evidence on the record as a whole. See generally *Universal Camera Corp. v. NLRB,* 340 U.S. 474, 71 S.Ct. 456, 95 L.Ed. 456 (1951). The court should not supplant the agency's findings merely by identifying alternative findings that could be supported by substantial evidence.

Third, the court incorrectly concluded that the EPA's decision was arbitrary and capricious. This error is derivative of the court's first two errors. Having substituted its reading of the governing law for the Agency's, and having made its own factual findings, the Court of Appeals concluded that the EPA erred in not considering an important and relevant fact—namely, that the upper Illinois River was (by the court's assessment) already degraded.

As we have often recognized, an agency ruling is "arbitrary and capricious if the agency has ... entirely failed to consider an important aspect of the problem." *Motor Vehicle Mfrs. Assn. of United States, Inc. v. State Farm Mut. Automobile Ins. Co.,* 463 U.S. 29, 43, 103 S.Ct. 2856, 2867, 77 L.Ed.2d 443 (1983). However, in these cases, the degraded status of the river is only an "important aspect" because of the Court of Appeals' novel and erroneous interpretation of the controlling law. Under the EPA's interpretation of that law, what matters is not the river's current status, but rather whether the proposed discharge will have a "detectable effect" on that status. If the Court of Appeals had been properly respectful of the Agency's permissible reading of the Act and ****1061** the Oklahoma standards, the court would not have adjudged the Agency's decision arbitrary and capricious for this reason.

[15] **[16]** In sum, the Court of Appeals made a policy choice that it was not authorized to make. Arguably, as that court suggested, ***114** it might be wise to prohibit any discharge into the Illinois River, even if that discharge would have no adverse impact on water quality. But

it was surely not arbitrary for the EPA to conclude—given the benefits to the river from the increased flow of relatively clean water [19] and the benefits achieved in Arkansas by allowing the new plant to operate as designed—that allowing the discharge would be even wiser. It is not our role, or that of the Court of Appeals, to decide which policy choice is the better one, for it is clear that Congress has entrusted such decisions to the Environmental Protection Agency.

Accordingly, the judgment of the Court of Appeals is

Reversed.

All Citations

503 U.S. 91, 112 S.Ct. 1046, 117 L.Ed.2d 239, 34 ERC 1193, 60 USLW 4176, 22 Envtl. L. Rep. 20,552

Footnotes

* The syllabus constitutes no part of the opinion of the Court but has been prepared by the Reporter of Decisions for the convenience of the reader. See *United States v. Detroit Lumber Co.*, 200 U.S. 321, 337, 26 S.Ct. 282, 287, 50 L.Ed. 499.

1 The permit also authorized the plant to discharge the remainder of its effluent into the White River, a river that does not flow into Oklahoma; this aspect of the permit is not at issue in this litigation.

2 Section 5 of the Oklahoma water quality standards provides:

> "All streams and bodies of water designated as (a) are protected by prohibition of any new point source discharge of wastes or increased load from an existing point source except under conditions described in Section 3.
>
> "All streams designated by the State as 'scenic river areas,' and such tributaries of those streams as may be appropriate will be so designated. Best management practices for control of nonpoint source discharge should be initiated when feasible." App. 46–47.
>
> Oklahoma has designated the portion of the Illinois River immediately downstream from the state line as a "scenic river." Okla.Stat., Tit. 82, § 1452(b)(1) (Supp.1989); see also App. 54.
>
> Section 3 of the Oklahoma water quality standards provides, in relevant part:
>
> "The intent of the Anti-degradation Policy is to protect all waters of the State from quality degradation. Existing instream water uses shall be maintained and protected. No further water quality degradation which would interfere with or become injurious to existing instream water uses shall be allowed. Oklahoma's waters constitute a valuable State resource and shall be protected, maintained and improved for the benefit of all the citizens.
>
> . . . . .
>
> "No degradation shall be allowed in high quality waters which constitute an outstanding resource or in waters of exceptional recreational or ecological significance. These include water bodies located in national and State parks, Wildlife Refuges, and those designated 'Scenic Rivers' in Appendix A." App. 27–28.

3 Section 301(b)(1)(C) provides, in relevant part, that

> "there shall be achieved—
>
> . . . . .
>
> "(C) not later than July 1, 1977, any more stringent limitation, including those necessary to meet *water quality standards ... established pursuant to any State law or regulations* ... or required to implement any applicable water quality standard established pursuant to this chapter." 33 U.S.C. § 1311(b)(1)(C) (emphasis added).

4 The Arkansas petition was filed in the Court of Appeals for the Eighth Circuit and transferred to the Tenth Circuit where it was consolidated with the petition filed by the respondents.

5 Section 510 provides in relevant part:

> "Except as expressly provided in this [Act], nothing in this [Act] shall (1) preclude or deny the right of any State or political subdivision thereof or interstate agency to adopt or enforce (A) any standard or limitation respecting discharges of pollutants, or (B) any requirement respecting control or abatement of pollution [with exceptions]; or (2) be construed as impairing or in any manner affecting any right or jurisdiction of the States *with respect to the waters (including boundary waters) of such States*." 33 U.S.C. § 1370 (emphasis added).

6 This description of the downstream State's role in the issuance of a new permit by a source State was apparently consistent with the EPA's interpretation of the Act at the time. The Government's *amicus curiae* brief in *Ouellette* stated that "the affected neighboring state [has] only an advisory role in the formulation of applicable effluent standards or

limitations. The affected state may try to persuade the federal government or the source state to increase effluent requirements, but *ultimately possesses no statutory authority to compel that result, even when its waters are adversely affected by out-of-state pollution.* See 33 U.S.C. § 1341(a)(2), 1342(b)(3) and (5)...." Brief for United States as *Amicus Curiae,* O.T. 1986, No. 85–1233, p. 19 (emphasis added; footnote omitted).

7 Section 402(b) requires state permit programs

"(3) [t]o insure that ... any other State the waters of which may be affected ... receive notice of each application for a permit and to provide an opportunity for public hearing before a ruling on each such application;

. . . . .

"(5) [t]o insure that any State (other than the permitting State), whose waters may be affected by the issuance of a permit may submit written recommendations to the permitting State (and the Administrator) with respect to any permit application and, if any part of such written recommendations are not accepted by the permitting State, that the permitting State will notify such affected State (and the Administrator) in writing of its failure to so accept such recommendations together with its reasons for so doing." 33 U.S.C. § 1342(b).

Although § 402(b) focuses on state-issued permits, § 402(a)(3) requires that, in issuing an NPDES permit, the Administrator follow the same procedures required of state permit programs. See § 1342(a)(3); see also 33 U.S.C. § 1341(a)(2).

8 Section 402(d)(2) provides:

"(2) No permit shall issue (A) if the Administrator within ninety days of the date of his notification under subsection (b)(5) of this section objects in writing to the issuance of such permit, or (B) if the Administrator within ninety days of the date of transmittal of the proposed permit by the State objects in writing to the issuance of such permit as being outside the guidelines and requirements of this chapter. Whenever the Administrator objects to the issuance of a permit under this paragraph such written objection shall contain a statement of the reasons for such objection and the effluent limitations and conditions which such permit would include if it were issued by the Administrator." 33 U.S.C. § 1342(d)(2).

9 Section 401(a)(2) provides, in relevant part:

"Whenever such a discharge may affect, as determined by the Administrator, the quality of the waters of any other State, the Administrator ... shall so notify such other State, the licensing or permitting agency, and the applicant. If, within sixty days after receipt of such notification, such other State determines that such discharge will affect the quality of its waters so as to violate any water quality requirements in such State, and within such sixty-day period notifies the Administrator and the licensing or permitting agency in writing of its objection to the issuance of such license or permit and requests a public hearing on such objection, the licensing or permitting agency shall hold such a hearing. The Administrator shall at such hearing submit his evaluation and recommendations with respect to any such objection to the licensing or permitting agency. Such agency, based upon the recommendations of such State, the Administrator, and upon any additional evidence, if any, presented to the agency at the hearing, shall condition such license or permit in such manner as may be necessary to insure compliance with applicable water quality requirements. If the imposition of conditions cannot insure such compliance such agency shall not issue such license or permit." 33 U.S.C. § 1341(a)(2).

10 This restriction applies whether the permit is issued by the EPA or by an approved state program. See 40 CFR § 123.25 (1991).

11 See, *e.g.,* 1 Legislative History of Water Pollution Control Act Amendments of 1972 (Committee Print compiled for the Senate Committee on Public Works by the Library of Congress), Ser. No. 93–1, pp. 322, 388–389, 814 (1973); see also 33 U.S.C. § 1342(d)(3).

12 "[W]e hold that the Clean Water Act prohibits granting an NPDES permit under the circumstances of this case (i.e., where applicable water quality standards have already been violated) and reverse EPA's decision to permit Fayetteville to discharge any part of its effluent to the Illinois River Basin." 908 F.2d 595, 616 (CA10 1990).

"Congress cannot reasonably be presumed to have intended to exclude from the CWA's 'all-encompassing program,' 451 U.S., at 318 [101 S.Ct., at 1793] a permitting decision arising in circumstances such as those of this case. It is even more unfathomable that Congress fashioned a '*comprehensive* ... policy for the *elimination* of water pollution,' *id.,* which sanctions continued pollution once minimum water quality standards have been transgressed. More likely, Congress simply never contemplated that EPA or a state would consider it permissible to authorize further pollution under such circumstances. We will not ascribe to the Act either the gaping loophole or the irrational purpose necessary to uphold EPA's action in this case." *Id.,* at 632 (footnotes omitted).

13 The court identified three errors in the EPA's reading of the Oklahoma standards. First, the court correctly observed that the ALJ and the Chief Judicial Officer misinterpreted § 4.10(c) of the standards as governing only the discharge of phosphorus into lakes, rather than the discharge of phosphorus into lakes and into all "perennial and intermittent streams."

Id., at 617 (emphasis omitted). This error was harmless because the ALJ found that the discharge into Lake Francis would comply with § 4.10(c) and it is undisputed that that discharge produced a greater threat to the slow-moving water of the lake than to the rapid flow in the river.

The second flaw identified by the court was the ALJ's mistaken reliance on the 1985, rather than the 1982 version, of the Oklahoma standards. We agree with the Chief Judicial Officer, who also noted this error, that the portions of the two versions relevant to this case "do not differ materially." App. to Pet. for Cert. in No. 90–1262, p. 150a. Therefore, this error was also harmless.

Because these two errors were harmless, we have focused in the text on the major difference between the court's and the EPA's readings of the Oklahoma standards: the "no degradation" provision.

14 See *supra,* at 1054. Oklahoma's water quality standards closely track the EPA's model standards in effect at that time. Compare § 3 of the Oklahoma standards with 40 CFR § 35.1550(e)(1) (1981).

15 Eutrophication is the "normally slow aging process by which a lake evolves into a bog or marsh.... During eutrophication the lake becomes so rich in nutritive compounds (especially nitrogen and phosphorus) that algae and other microscopic plant life become superabundant, thereby 'choking' the lake...." App. 57–58. With regard to eutrophication, the ALJ found that the Fayetteville plant would discharge 30 pounds of phosphorus per day, only about 6 pounds of which would reach the Arkansas/Oklahoma border, and that such a small amount would not result in an increase in eutrophication. App. to Pet. for Cert. in No. 90–1262, p. 129a.

16 With regard to esthetics, the ALJ concluded that the only discharged compound that would affect esthetics was phosphorus and that, again, the amount of that substance crossing the border would not affect the esthetic quality of Oklahoma's waters. *Id.,* at 135a–136a.

17 With regard to dissolved oxygen, the ALJ found that in the 39 miles between discharge and the border the effluent would experience "complete oxygen recovery" and therefore would not affect the dissolved oxygen levels in the river. *Id.,* at 140a.

18 With regard to metals, the ALJ concluded that the concentrations of metals would be so low as not to violate the Oklahoma standards. *Id.,* at 143a.

19 Justice Holmes recognized this potential benefit years ago:

"There is no pretence that there is a nuisance of the simple kind that was known to the older common law. There is nothing which can be detected by the unassisted senses—no visible increase of filth, no new smell. On the contrary, it is proved that the great volume of pure water from Lake Michigan which is mixed with the sewage at the start has improved the Illinois River in these respects to a noticeable extent. Formerly it was sluggish and ill smelling. Now it is a comparatively clear stream to which edible fish have returned. Its water is drunk by the fisherman, it is said, without evil results." *Missouri v. Illinois,* 200 U.S. 496, 522, 26 S.Ct. 268, 270, 50 L.Ed. 572 (1906).

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West's Annotated California Codes
Constitution of the State of California 1879 (Refs & Annos)
Article Xiiib. Government Spending Limitation (Refs & Annos)

West's Ann.Cal.Const. Art. 13B, § 6

§ 6. New programs or services mandated by Legislature or state agencies; subvention; appropriation of funds or suspension of operation

Effective: June 4, 2014
Currentness

SEC. 6. (a) Whenever the Legislature or any state agency mandates a new program or higher level of service on any local government, the State shall provide a subvention of funds to reimburse that local government for the costs of the program or increased level of service, except that the Legislature may, but need not, provide a subvention of funds for the following mandates:

(1) Legislative mandates requested by the local agency affected.

(2) Legislation defining a new crime or changing an existing definition of a crime.

(3) Legislative mandates enacted prior to January 1, 1975, or executive orders or regulations initially implementing legislation enacted prior to January 1, 1975.

(4) Legislative mandates contained in statutes within the scope of paragraph (7) of subdivision (b) of Section 3 of Article I.

(b)(1) Except as provided in paragraph (2), for the 2005-06 fiscal year and every subsequent fiscal year, for a mandate for which the costs of a local government claimant have been determined in a preceding fiscal year to be payable by the State pursuant to law, the Legislature shall either appropriate, in the annual Budget Act, the full payable amount that has not been previously paid, or suspend the operation of the mandate for the fiscal year for which the annual Budget Act is applicable in a manner prescribed by law.

(2) Payable claims for costs incurred prior to the 2004-05 fiscal year that have not been paid prior to the 2005-06 fiscal year may be paid over a term of years, as prescribed by law.

(3) Ad valorem property tax revenues shall not be used to reimburse a local government for the costs of a new program or higher level of service.

(4) This subdivision applies to a mandate only as it affects a city, county, city and county, or special district.

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(5) This subdivision shall not apply to a requirement to provide or recognize any procedural or substantive protection, right, benefit, or employment status of any local government employee or retiree, or of any local government employee organization, that arises from, affects, or directly relates to future, current, or past local government employment and that constitutes a mandate subject to this section.

(c) A mandated new program or higher level of service includes a transfer by the Legislature from the State to cities, counties, cities and counties, or special districts of complete or partial financial responsibility for a required program for which the State previously had complete or partial financial responsibility.

Credits

(Adopted Nov. 6, 1979. Amended by Stats.2004, Res. c. 133 (S.C.A.4) (Prop.1A, approved Nov. 2, 2004, eff. Nov. 3, 2004); Stats.2013, Res. c. 123 (S.C.A.3), § 2 (Prop. 42, approved June 3, 2014, eff. June 4, 2014).)

Notes of Decisions (202)

West's Ann. Cal. Const. Art. 13B, § 6, CA CONST Art. 13B, § 6
Current with urgency legislation through Ch. 14 of 2017 Reg.Sess

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KeyCite Yellow Flag - Negative Treatment
Distinguished by City of Arcadia v. State Water Resources Control Bd., Cal.App. 4 Dist., December 14, 2010

35 Cal.4th 613
Supreme Court of California

CITY OF BURBANK, Plaintiff and Appellant,
v.
STATE WATER RESOURCES CONTROL BOARD et al., Defendants and Appellants.
City of Los Angeles, Plaintiff and Respondent,
v.
State Water Resources Control Board et al., Defendants and Appellants.

Nos. S119248, B151175, B152562.
|
April 4, 2005.
|
Rehearing Denied June 29, 2005. *

Synopsis

Background: Cities filed petitions for writs of mandate challenging pollutant limitations in wastewater discharge permits issued by regional water quality control boards. The Superior Court, Los Angeles County, Nos. BS060957 and BS060960, Dzintra I. Janavs, J., set aside permits. Regional board and state water resources control board appealed. The Court of Appeal consolidated the cases and reversed. The Supreme Court granted review, superseding the opinion of the Court of Appeal.

Holdings: The Supreme Court, Kennard, J., held that:

[1] regional board may not consider economic factors as justification for imposing pollutant restrictions in wastewater discharge permit which are less stringent than applicable federal standards, and

[2] when imposing more stringent pollutant restrictions that those required by federal law, regional board may take economic factors into account.

Judgment of Court of Appeal affirmed, and matter remanded.

Brown, J., filed concurring opinion.

Opinion, 4 Cal.Rptr.3d 27, superseded.

West Headnotes (5)

[1] Environmental Law
Purpose

Clean Water Act is a comprehensive water quality statute designed to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. Federal Water Pollution Control Act Amendments of 1972, § 101 et seq., as amended, 33 U.S.C.A. § 1251 et seq.

11 Cases that cite this headnote

[2] Environmental Law
Conditions and limitations

States
Environment;nuclear projects

Regional water quality control board may not consider economic factors as justification for imposing pollutant restrictions in wastewater discharge permit which are less stringent than applicable federal standards, despite statute directing board to take such factors into consideration, because the federal constitutional supremacy clause requires state law to yield to federal law. U.S.C.A. Const. Art. 6, cl. 2; Federal Water Pollution Control Act Amendments of 1972, §§ 101 et seq., 301(a), (b)(1)(B, C), 402(a)(1, 3), as amended, 33 U.S.C.A. §§ 1251 et seq., 1311(a), (b)(1)(B, C), 1342(a)(1, 3); West's Ann.Cal.Water Code §§ 13000 et seq., 13241(d), 13263, 13377.

See 4 Witkin, Summary of Cal. Law (9th ed. 1987) Real Property, §§ 68, 69; 8 Miller & Starr, Cal. Real Estate (3d ed. 2001) § 23:54; Cal. Jur. 3d, Pollution and Conservation Laws, § 126.

14 Cases that cite this headnote

[3] Statutes

Purpose and intent

When construing any statute, the court's task is to determine the Legislature's intent when it enacted the statute so as to adopt the construction that best effectuates the purpose of the law.

13 Cases that cite this headnote

[4] States

Conflicting or conforming laws or regulations

Under the federal Constitution's supremacy clause, a state law that conflicts with federal law is without effect. U.S.C.A. Const. Art. 6, cl. 2.

Cases that cite this headnote

[5] Environmental Law

Conditions and limitations

When imposing more stringent pollutant restrictions in a wastewater discharge permit than those required by federal law, a regional water quality control board may take into account the economic effects of doing so. Federal Water Pollution Control Act Amendments of 1972, §§ 101 et seq., 101(b), 510, as amended, 33 U.S.C.A. §§ 1251 et seq., 1251(b), 1370; West's Ann.Cal.Water Code §§ 13000 et seq., 13241(d), 13263, 13377.

17 Cases that cite this headnote

Attorneys and Law Firms

***305** Bill Lockyer, Attorney General, Manuel M. Medeiros, State Solicitor General, Richard M. Frank and Tom Greene, Chief Assistant Attorneys General, Mary E. Hackenbracht, Assistant Attorney General, Marilyn H. Levin, Gregory J. Newmark and David S. Beckman, Deputy Attorneys General, for Defendants and Appellants.

David S. Beckman, Los Angeles, and Dan L. Gildor, Berkeley, for Natural Resources Defense Counsel, Butte Environmental Council, California Coastkeeper Alliance, CalTrout, Clean Water Action, Clean Water Fund, Coalition on the Environment and Jewish Life of Southern California, Coast Action Group, Defend the Bay, Ecological Rights Foundation, Environment in the Public Interest, Environmental Defense Center, Heal the Bay, Los Angeles Interfaith Environment Council, Ocean Conservancy, Orange County Coastkeeper, San Diego Baykeeper, Santa Barbara Channelkeeper, Santa Monica Baykeeper, Southern California Watershed Alliance, Ventura Coastkeeper, Waterkeeper Alliance, Waterkeepers Northern California, Westside Aquatics, Inc., and Wishtoyo Foundation as Amici Curiae on behalf of Plaintiffs and Appellants.

Downey, Brand, Seymour & Rohwer, Downey Brand, Melissa A. Thorme, Sacramento, Jeffrey S. Galvin, Nicole E. Granquist and Cassandra M. Ferrannini, Sacramento, for Plaintiffs and Appellants.

Dennis A. Barlow, City Attorney, and Carolyn A. Barnes, Assistant City Attorney, for Defendant and Appellant City of Burbank.

Rockard J. Delgadillo, City Attorney, and Christopher M. Westhoff, Assistant City Attorney, for Plaintiff and Appellant City of Los Angeles.

Rutan & Tucker and Richard Montevideo, Costa Mesa, for Cities of Baldwin Park, Bell, Cerritos, Diamond Bar, Downey, Gardena, Montebello, Monterey Park, Paramount, Pico Rivera, Rosemead, San Gabriel, San Marino, Santa Fe Springs, Sierra Madre, Signal Hill, Temple City and West Covina, the California Building Industry Association and the Building Industry Legal Defense Foundation as Amici Curiae on behalf of Plaintiffs and Appellants.

Stoel Rives and Lawrence S. Bazel, San Francisco, for Western Coalition of Arid States as Amicus Curiae on behalf of Plaintiffs and Appellants.

Richards, Watson & Gershon and John J. Harris, Los Angeles, for the League of California Cities as Amicus Curiae on behalf of Plaintiffs and Appellants.

***306** Squire, Sanders & Dempsey, Joseph A. Meckes, San Francisco; David W. Burchmore; and Alexandra

Dapolito Dunn, for Association of Metropolitan Sewerage Agencies as Amicus Curiae on behalf of Plaintiffs and Appellants.

Lewis, Brisbois, Bisgaard & Smith and B. Richard Marsh, Los Angeles, for County Sanitation Districts of Los Angeles County as Amicus Curiae on behalf of Plaintiffs and Appellants.

Fulbright & Jaworski, Colin Lennard, Patricia Chen, Los Angeles; Archer Norris and Peter W. McGaw, Walnut Creek, for California Association of Sanitation Agencies as Amicus Curiae on behalf of Plaintiffs and Appellants.

Opinion

KENNARD, J.

***618** **864** Federal law establishes national water quality standards but allows the states to enforce their own water quality laws so long as they comply with federal standards. Operating within this federal-state framework, California's nine Regional Water Quality Control Boards establish water quality policy. They also issue permits for the discharge of treated wastewater; these permits specify the maximum allowable concentration of chemical pollutants in the discharged wastewater.

The question here is this: When a regional board issues a permit to a wastewater treatment facility, must the board take into account the facility's costs of complying with the board's restrictions on pollutants in the wastewater to be discharged? The trial court ruled that California law required a regional board to weigh the economic burden on the facility against the expected environmental benefits of reducing pollutants in the wastewater discharge. The Court of Appeal disagreed. On petitions by the municipal operators of three wastewater treatment facilities, we granted review.

We reach the following conclusions: Because both California law and federal law require regional boards to comply with federal clean water standards, and because the supremacy clause of the United States Constitution requires state law to yield to federal law, a regional board, when issuing a wastewater discharge permit, may not consider economic factors to justify imposing pollutant restrictions that are *less stringent* than the applicable federal standards require. When, however, a regional board is considering whether to make the pollutant restrictions in a wastewater discharge permit *more stringent* than federal law requires, California law allows the board to take into account economic **865 factors, including the wastewater discharger's cost of compliance. We remand this case for further proceedings to determine whether the pollutant limitations in the permits challenged here meet or exceed federal standards.

*619 I. STATUTORY BACKGROUND

The quality of our nation's waters is governed by a "complex statutory and regulatory scheme ... that implicates both federal and state administrative responsibilities." (*PUD No. 1 of Jefferson County v. Washington Department of Ecology* (1994) 511 U.S. 700, 704, 114 S.Ct. 1900, 128 L.Ed.2d 716.) We first discuss California law, then federal law.

A. California Law

In California, the controlling law is the Porter–Cologne Water Quality Control Act (Porter–Cologne Act), which was enacted in 1969. (Wat.Code, § 13000 et seq., added by Stats.1969, ch. 482, § 18, p. 1051.)[1] Its goal is "to attain the highest water ***307** quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible." (§ 13000.) The task of accomplishing this belongs to the State Water Resources Control Board (State Board) and the nine Regional Water Quality Control Boards; together the State Board and the regional boards comprise "the principal state agencies with primary responsibility for the coordination and control of water quality." (§ 13001.) As relevant here, one of those regional boards oversees the Los Angeles region (the Los Angeles Regional Board).[2]

Whereas the State Board establishes statewide policy for water quality control (§ 13140), the regional boards "formulate and adopt water quality control plans for all areas within [a] region" (§ 13240). The regional boards' water quality plans, called "basin plans," must address the beneficial uses to be protected as well as water quality objectives, and they must establish a program of implementation. (§ 13050, subd. (j).) Basin plans must be consistent with "state policy for water quality control." (§ 13240.)

B. Federal Law

[1] In 1972, Congress enacted amendments (Pub.L. No. 92–500 (Oct. 18, 1972) 86 Stat. 816) to the Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), which, as amended in 1977, is commonly known as the Clean ***620** Water Act. The Clean Water Act is a "comprehensive water quality statute designed 'to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.' " (*PUD No. 1 of Jefferson County v. Washington Dept. of Ecology, supra,* 511 U.S. at p. 704, 114 S.Ct. 1900, quoting 33 U.S.C. § 1251(a).) The Act's national goal was to eliminate by the year 1985 "the discharge of pollutants into the navigable waters" of the United States. (33 U.S.C. § 1251(a)(1).) To accomplish this goal, the Act established "effluent limitations," which are restrictions on the "quantities, rates, and concentrations of chemical, physical, biological, and other constituents"; these effluent limitations allow the discharge of pollutants only when the water has been satisfactorily treated to conform with federal water quality standards. (33 U.S.C. §§ 1311, 1362(11).)

Under the federal Clean Water Act, each state is free to enforce its own water quality laws so long as its effluent limitations are not "less stringent" than those set out in the Clean Water Act. (33 U.S.C. § 1370.) This led the California Legislature in 1972 to amend the state's Porter–Cologne Act "to ensure consistency with the requirements for state programs implementing the Federal Water Pollution Control Act." (§ 13372.)

****866** Roughly a dozen years ago, the United States Supreme Court, in *Arkansas v. Oklahoma* (1992) 503 U.S. 91, 112 S.Ct. 1046, 117 L.Ed.2d 239, described the distinct roles of the state and federal agencies in enforcing water quality: "The Clean Water Act anticipates a partnership between the States and the Federal Government, animated by a shared objective: 'to restore and maintain the chemical, physical, and biological integrity of the Nation's waters.' 33 U.S.C. § 1251(a). Toward *****308** this end, [the Clean Water Act] provides for two sets of water quality measures. 'Effluent limitations' are promulgated by the [Environmental Protection Agency (EPA)] and restrict the quantities, rates, and concentrations of specified substances which are discharged from point sources. [3] See §§ 1311, 1314. '[W]ater quality standards' are, in general, promulgated by the States and establish the desired condition of a waterway. See § 1313. These standards supplement effluent limitations 'so that numerous point sources, despite individual compliance with effluent limitations, may be further regulated to prevent water quality from falling below acceptable levels.' *EPA v. California ex rel. State Water Resources Control Bd.,* 426 U.S. 200, 205, n. 12, 96 S.Ct. 2022, 2025, n. 12, 48 L.Ed.2d 578 (1976).

***621** "The EPA provides States with substantial guidance in the drafting of water quality standards. See generally 40 CFR pt. 131 (1991) (setting forth model water quality standards). Moreover, [the Clean Water Act] requires, *inter alia,* that state authorities periodically review water quality standards and secure the EPA's approval of any revisions in the standards. If the EPA recommends changes to the standards and the State fails to comply with that recommendation, the Act authorizes the EPA to promulgate water quality standards for the State. 33 U.S.C. § 1313(c)." (*Arkansas v. Oklahoma, supra,* 503 U.S. at p. 101, 112 S.Ct. 1046.)

Part of the federal Clean Water Act is the National Pollutant Discharge Elimination System (NPDES), "[t]he primary means" for enforcing effluent limitations and standards under the Clean Water Act. (*Arkansas v. Oklahoma, supra,* 503 U.S. at p. 101, 112 S.Ct. 1046.) The NPDES sets out the conditions under which the federal EPA or a state with an approved water quality control program can issue permits for the discharge of pollutants in wastewater. (33 U.S.C. § 1342(a) & (b).) In California, wastewater discharge requirements established by the regional boards are the equivalent of the NPDES permits required by federal law. (§ 13374.)

With this federal and state statutory framework in mind, we now turn to the facts of this case.

II. FACTUAL BACKGROUND

This case involves three publicly owned treatment plants that discharge wastewater under NPDES permits issued by the Los Angeles Regional Board.

The City of Los Angeles owns and operates the Donald C. Tillman Water Reclamation Plant (Tillman Plant), which serves the San Fernando Valley. The City of Los Angeles also owns and operates the Los Angeles–Glendale Water Reclamation Plant (Los Angeles–Glendale Plant),

which processes wastewater from areas within the City of Los Angeles and the independent cities of Glendale and Burbank. Both the Tillman Plant and the Los Angeles–Glendale Plant discharge wastewater directly into the Los Angeles River, now a concrete-lined flood control channel that runs through the City of Los Angeles, ending at the Pacific Ocean. The State Board and the Los Angeles Regional Board consider the Los Angeles River to be a navigable water of the United States for purposes of the federal Clean Water Act.

The third plant, the Burbank Water Reclamation Plant (Burbank Plant), is owned and operated by the City of Burbank, ***309** serving residents and businesses within that city. The Burbank Plant discharges wastewater into the Burbank Western Wash, which drains into the Los Angeles River.

***622** All three plants, which together process hundreds of millions of gallons of sewage **867** each day, are tertiary treatment facilities; that is, the treated wastewater they release is processed sufficiently to be safe not only for use in watering food crops, parks, and playgrounds, but also for human body contact during recreational water activities such as swimming.

In 1998, the Los Angeles Regional Board issued renewed NPDES permits to the three wastewater treatment facilities under a basin plan it had adopted four years earlier for the Los Angeles River and its estuary. That 1994 basin plan contained general narrative criteria pertaining to the existing and potential future beneficial uses and water quality objectives for the river and estuary.[4] The narrative criteria included municipal and domestic water supply, swimming and other recreational water uses, and fresh water habitat. The plan further provided: "All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life." The 1998 permits sought to reduce these narrative criteria to specific numeric requirements setting daily maximum limitations for more than 30 pollutants present in the treated wastewater, measured in milligrams or micrograms per liter of effluent.[5]

The Cities of Los Angeles and Burbank (Cities) filed appeals with the State Board, contending that achievement of the numeric requirements would be too costly when considered in light of the potential benefit to water quality, and that the pollutant restrictions in the NPDES permits were unnecessary to meet the narrative criteria described in the basin plan. The State Board summarily denied the Cities' appeals.

Thereafter, the Cities filed petitions for writs of administrative mandate in the superior court. They alleged, among other things, that the Los Angeles Regional Board failed to comply with sections 13241 and 13263, part of California's Porter–Cologne Act, because it did not consider the economic burden on the Cities in having to reduce substantially the pollutant content of their discharged wastewater. They also alleged that compliance with the pollutant restrictions set out in the NPDES permits issued by the regional ***623** board would greatly increase their costs of treating the wastewater to be discharged into the Los Angeles River. According to the City of Los Angeles, its compliance costs would exceed $50 million annually, representing more than 40 percent of its entire budget for operating its four wastewater treatment plants and its sewer system; the City of Burbank estimated its added costs at over $9 million annually, a nearly 100 percent increase above its $9.7 million annual budget for wastewater treatment.

***310** The State Board and the Los Angeles Regional Board responded that sections 13241 and 13263 do not require consideration of costs of compliance when a regional board issues a NPDES permit that restricts the pollutant content of discharged wastewater.

The trial court stayed the contested pollutant restrictions for each of the three wastewater treatment plants. It then ruled that sections 13241 and 13263 of California's Porter–Cologne Act required a regional board to consider costs of compliance not only when it adopts a basin or water quality plan but also when, as here, it issues an NPDES permit setting the allowable pollutant content of a treatment plant's discharged wastewater. The court found no evidence that the Los Angeles Regional Board had considered economic factors at either stage. Accordingly, the trial court granted the Cities' petitions for writs of mandate, and it ordered the Los Angeles Regional Board to vacate the contested restrictions on pollutants in the wastewater discharge permits issued to the three municipal plants here and to conduct hearings **868** to consider the Cities' costs of compliance before the board's issuance of new permits. The Los Angeles Regional Board and the

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State Board filed appeals in both the Los Angeles and Burbank cases. [6]

The Court of Appeal, after consolidating the cases, reversed the trial court. It concluded that sections 13241 and 13263 require a regional board to take into account "economic considerations" when it adopts water quality standards in a basin plan but not when, as here, the regional board sets specific pollutant restrictions in wastewater discharge permits intended to satisfy those standards. We granted the Cities' petition for review.

*624 III. DISCUSSION

A. Relevant State Statutes

The California statute governing the issuance of *wastewater permits* by a regional board is section 13263, which was enacted in 1969 as part of the Porter–Cologne Act. (See 26 Cal.Rptr.3d pp. 306–307, 108 P.3d p. 865, *ante.*) Section 13263 provides in relevant part: "*The regional board,* after any necessary hearing, *shall prescribe requirements as to the nature of any proposed discharge* [of wastewater]. *The requirements* shall implement any relevant water quality control plans that have been adopted, and *shall take into consideration* the beneficial uses to be protected, the water quality objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and *the provisions of Section 13241.*" (§ 13263, subd. (a), italics added.)

Section 13241 states: "Each regional board shall establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance; however, it is recognized that it may be possible for the quality of water to be changed to some degree without unreasonably affecting beneficial uses. Factors to be considered by a regional board in establishing water quality objectives shall include, but not necessarily be limited to, all of the following:

***311 "(a) Past, present, and probable future beneficial uses of water.

"(b) Environmental characteristics of the hydrographic unit under consideration, including the quality of water available thereto.

"(c) Water quality conditions that could reasonably be achieved through the coordinated control of all factors which affect water quality in the area.

"(d) *Economic considerations.*

"(e) The need for developing housing within the region.

"(f) The need to develop and use recycled water." (Italics added.)

The Cities here argue that section 13263's express reference to section 13241 requires the Los Angeles Regional Board to consider section 13241's listed factors, notably "[e]conomic considerations," before issuing NPDES permits requiring specific pollutant reductions in discharged effluent or treated wastewater.

[2] *625 Thus, at issue is language in section 13263 stating that when a regional board "prescribe[s] requirements as to the nature of any proposed discharge" of treated wastewater it must "take into consideration" certain factors including "the provisions of Section 13241." According to the Cities, this statutory language requires that a regional board make an independent evaluation of the section 13241 factors, including "economic considerations," before restricting the pollutant content in an NPDES permit. This was the view expressed in the trial court's ruling. The Court of Appeal rejected that view. It held that a regional board need consider the section 13241 factors only when it adopts a basin or water quality plan, but not when, as in this case, it issues a wastewater discharge **869 permit that sets specific numeric limitations on the various chemical pollutants in the wastewater to be discharged. As explained below, the Court of Appeal was partly correct.

B. Statutory Construction

[3] When construing any statute, our task is to determine the Legislature's intent when it enacted the statute "so that we may adopt the construction that best effectuates the purpose of the law." (*Hassan v. Mercy American River Hospital* (2003) 31 Cal.4th 709, 715, 3 Cal.Rptr.3d 623, 74 P.3d 726; *Esberg v. Union Oil Co.* (2002) 28 Cal.4th 262, 268, 121 Cal.Rptr.2d 203, 47 P.3d 1069.) In doing this, we look to the statutory language, which ordinarily is "the most reliable indicator of legislative intent." (*Hassan, supra,* at p. 715, 3 Cal.Rptr.3d 623, 74 P.3d 726.)

As mentioned earlier, our Legislature's 1969 enactment of the Porter–Cologne Act, which sought to ensure the high quality of water in this state, predated the 1972 enactment by Congress of the precursor to the federal Clean Water Act. Included in California's original Porter–Cologne Act were sections 13263 and 13241. Section 13263 directs regional boards, when issuing wastewater discharge permits, to take into account various factors, including those set out in section 13241. Listed among the section 13241 factors is "[e]conomic considerations." (§ 13241, subd. (d).) The plain language of sections 13263 and 13241 indicates the Legislature's intent in 1969, when these statutes were enacted, that a regional board consider the cost of compliance when setting effluent limitations in a wastewater discharge permit.

Our construction of sections 13263 and 13241 does not end with their plain statutory language, however. We must also analyze them in the context of the statutory scheme of which they are a part. ***312** (*State Farm Mutual Automobile Ins. Co. v. Garamendi* (2004) 32 Cal.4th 1029, 1043, 12 Cal.Rptr.3d 343, 88 P.3d 71.) Like sections 13263 and 13241, section 13377 is part of the Porter–Cologne Act. But unlike the former two statutes, section 13377 was **626** not enacted until 1972, shortly after Congress, through adoption of the Federal Water Pollution Control Act Amendments, established a comprehensive water quality policy for the nation.

[4] Section 13377 specifies that wastewater discharge permits issued by California's regional boards must meet the federal standards set by federal law. In effect, section 13377 forbids a regional board's consideration of any economic hardship on the part of the permit holder if doing so would result in the dilution of the requirements set by Congress in the Clean Water Act. That act prohibits the discharge of pollutants into the navigable waters of the United States unless there is compliance with federal law (33 U.S.C. § 1311(a)), and publicly operated wastewater treatment plants such as those before us here must comply with the act's clean water standards, regardless of cost (see *id.*, §§ 1311(a), (b)(1)(B) & (C), 1342(a)(1) & (3)). Because section 13263 cannot authorize what federal law forbids, it cannot authorize a regional board, when issuing a wastewater discharge permit, to use compliance costs to justify pollutant restrictions that do not comply with federal clean water standards.[7] Such a construction of section 13263 would not only be inconsistent with federal law, it would also be inconsistent with the Legislature's **870 declaration in section 13377 that all discharged wastewater must satisfy federal standards.[8] This was also the conclusion of the Court of Appeal. Moreover, under the federal Constitution's supremacy clause (art. VI), a state law that conflicts with federal law is " 'without effect.' " (*Cipollone v. Liggett Group, Inc.* (1992) 505 U.S. 504, 516, 112 S.Ct. 2608, 120 L.Ed.2d 407; *Dowhal v. SmithKline Beecham Consumer Healthcare* (2004) 32 Cal.4th 910, 923, 12 Cal.Rptr.3d 262, 88 P.3d 1.) To comport with the principles of federal supremacy, California law cannot authorize this *627 state's regional boards to allow the discharge of pollutants into the navigable waters of the United States in concentrations ***313** that would exceed the mandates of federal law.

Thus, in this case, whether the Los Angeles Regional Board should have complied with sections 13263 and 13241 of California's Porter–Cologne Act by taking into account "economic considerations," such as the costs the permit holder will incur to comply with the numeric pollutant restrictions set out in the permits, depends on whether those restrictions meet or exceed the requirements of the federal Clean Water Act. We therefore remand this matter for the trial court to resolve that issue.

C. Other Contentions

The Cities argue that requiring a regional board at the wastewater discharge permit stage to consider the permit holder's cost of complying with the board's restrictions on pollutant content in the water is consistent with federal law. In support, the Cities point to certain provisions of the federal Clean Water Act. They cite section 1251(a)(2) of title 33 United States Code, which sets, as a national goal "*wherever attainable,*" an interim goal for water quality that protects fish and wildlife, and section 1313(c)(2)(A) of the same title, which requires consideration, among other things, of waters' "*use and value* for navigation" when revising or adopting a "water quality standard." (Italics added.) These two federal statutes, however, pertain not to permits for wastewater discharge, at issue here, but to establishing water quality standards, not at issue here. Nothing in the federal Clean Water Act suggests that a state is free to disregard or to weaken the federal requirements for clean water when an NPDES permit holder alleges that compliance with those requirements will be too costly.

[5] At oral argument, counsel for amicus curiae National Resources Defense Council, which argued on behalf of California's State Board and regional water boards, asserted that the federal Clean Water Act incorporates state water policy into federal law, and that therefore a regional board's consideration of economic factors to justify greater pollutant concentration in discharged wastewater would conflict with the federal act even if the specified pollutant restrictions were not less stringent than those required under federal law. We are not persuaded. The federal Clean Water Act reserves to the states significant aspects of water quality policy (33 U.S.C. § 1251(b)), and it specifically grants the states authority to "enforce any effluent limitation" that is not "*less stringent* " than the federal standard (*id.* § 1370, italics added). It does not prescribe or restrict the factors that a state may consider when exercising this reserved authority, and thus it does not prohibit ***628** a state—when imposing effluent limitations that are *more stringent* than required by federal law—from taking into account the economic effects of doing so.

Also at oral argument, counsel for the Cities asserted that if the three municipal wastewater treatment facilities ceased releasing their treated wastewater into the concrete channel that makes up the Los Angeles River, it would (other than during the rainy season) contain no water at all, and thus would not be a "navigable water" of the ****871** United States subject to the Clean Water Act. (See *Solid Waste Agency v. United States Army Corps of Engineers* (2001) 531 U.S. 159, 172, 121 S.Ct. 675, 148 L.Ed.2d 576 ["The term 'navigable' has at least the import of showing us what Congress had in mind as its authority for enacting the CWA: its traditional jurisdiction over waters that were or had been navigable in fact or which could reasonably be so made."].) It is unclear when the Cities first raised this issue. The Court of Appeal did not discuss it in its opinion, and the Cities did not seek rehearing on this ground. (See *****314** Cal. Rules of Court, rule 28(c)(2).) Concluding that the issue is outside our grant of review, we do not address it.

CONCLUSION

Through the federal Clean Water Act, Congress has regulated the release of pollutants into our national waterways. The states are free to manage their own water quality programs so long as they do not compromise the federal clean water standards. When enacted in 1972, the goal of the Federal Water Pollution Control Act Amendments was to *eliminate* by the year 1985 the discharge of pollutants into the nation's navigable waters. In furtherance of that goal, the Los Angeles Regional Board indicated in its 1994 basin plan on water quality the intent, insofar as possible, to remove from the water in the Los Angeles River toxic substances in amounts harmful to humans, plants, and aquatic life. What is not clear from the record before us is whether, in limiting the chemical pollutant content of wastewater to be discharged by the Tillman, Los Angeles–Glendale, and Burbank wastewater treatment facilities, the Los Angeles Regional Board acted only to implement requirements of the federal Clean Water Act or instead imposed pollutant limitations that exceeded the federal requirements. This is an issue of fact to be resolved by the trial court.

DISPOSITION

We affirm the judgment of the Court of Appeal reinstating the wastewater discharge permits to the extent that the specified numeric limitations on chemical pollutants are necessary to satisfy federal Clean Water Act requirements for treated wastewater. The Court of Appeal is directed to remand this ***629** matter to the trial court to decide whether any numeric limitations, as described in the permits, are "more stringent" than required under federal law and thus should have been subject to "economic considerations" by the Los Angeles Regional Board before inclusion in the permits.

WE CONCUR: GEORGE, C.J., BAXTER, WERDEGAR, CHIN, and MORENO, JJ.

Concurring Opinion by BROWN, J.

I write separately to express my frustration with the apparent inability of the government officials involved here to answer a simple question: How do the federal clean water standards (which, as near as I can determine, are the state standards) prevent the state from considering economic factors? The majority concludes that because "the supremacy clause of the United States Constitution requires state law to yield to federal law, a regional board, when issuing a wastewater discharge permit, may not consider economic factors to justify imposing pollutant

restrictions that are *less stringent* than applicable federal standards require." (Maj. opn., *ante,* 26 Cal.Rptr.3d at p. 306, 108 P.3d at p. 864.) That seems a pretty self-evident proposition, but not a useful one. The real question, in my view, is whether the Clean Water Act prevents or prohibits the regional water board from considering economic factors to justify pollutant restrictions that *meet* the clean water standards in more cost-effective and economically efficient ways. I can see no reason why a federal law—which purports to be an example of cooperative federalism—would decree such a result. I do not think the majority's reasoning is at fault here. Rather, the agencies involved seemed to have worked hard to make this simple question impenetrably obscure.

A brief review of the statutory framework at issue is necessary to understand my concerns.

*****315 **872 I. Federal Law**

"In 1972, Congress enacted the Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.), commonly known as the Clean Water Act (CWA) [Citation.] ... [¶] Generally, the CWA 'prohibits the discharge of any pollutant except in compliance with one of several statutory exceptions. [Citation.]' ... The most important of those exceptions is pollution discharge under a valid NPDES [National Pollution Discharge Elimination System] permit, which can be issued either by the Environmental Protection Agency (EPA), or by an EPA-approved state permit program such as California's. [Citations.] NPDES permits are valid for five years. [Citation.] [¶] Under the CWA's NPDES permit program, the states are required to develop *water quality standards.* [Citations.] A water quality standard 'establish[es] the desired condition of a waterway.' [Citation.] A water quality standard for any ***630** given waterway, or 'water body,' has two components: (1) the designated beneficial uses of the water body and (2) the *water quality criteria* sufficient to protect those uses. [Citations.] [¶] Water quality criteria can be either *narrative* or *numeric.* [Citation.]" (*Communities for a Better Environment v. State Water Resources Control Bd.* (2003) 109 Cal.App.4th 1089, 1092–1093, 1 Cal.Rptr.3d 76.)

With respect to satisfying water quality standards, "a polluter must comply with *effluent limitations.* The CWA defines an effluent limitation as 'any restriction established by a State or the [EPA] Administrator on quantities, rates, and concentrations of chemical, physical, biological, and other constituents which are discharged from point sources into navigable waters, the waters of the contiguous zone, or the ocean, including schedules of compliance.' [Citation.] 'Effluent limitations are a means of *achieving* water quality standards.' [Citation.] [¶] NPDES permits establish effluent limitations for the polluter. [Citations.] CWA's NPDES permit system provides for a two-step process for the establishing of effluent limitations. First, the polluter must comply with *technology-based effluent limitations,* which are limitations based on the best available or practical technology for the reduction of water pollution. [Citations.] [¶] Second, the polluter must also comply with more stringent *water quality-based effluent limitations* (WQBEL's) where applicable. In the CWA, Congress 'supplemented the "technology-based" effluent limitations with "water quality-based" limitations "so that numerous point sources, despite individual compliance with effluent limitations, may be further regulated to prevent water quality from falling below acceptable levels.' " [Citation.] [¶] The CWA makes WQBEL's applicable to a given polluter whenever WQBEL's are 'necessary to meet water quality standards, treatment standards, or schedules of compliance, established pursuant to any State law or regulations....' [Citations.] Generally, NPDES permits must conform to state water quality laws insofar as the state laws impose more stringent pollution controls than the CWA. [Citations.] Simply put, WQBEL's implement water quality standards." (*Communities for a Better Environment v. State Water Resources Control Bd., supra,* 109 Cal.App.4th at pp. 1093–1094, 1 Cal.Rptr.3d 76, fns. omitted.)

This case involves water quality-based effluent limitations. As set forth above, "[u]nder the CWA, states have the primary role in promulgating water quality standards." (*Piney Run Preservation Ass'n v. Commrs. of Carroll Co.* (4th Cir.2001) 268 F.3d 255, 265, fn. 9.) "Under the CWA, the water quality standards referred to in section 301 [see 33 U.S.C. § 1311] are primarily the states' handiwork." *****316** (*American Paper Institute, Inc. v. U.S. Envtl. Protection Agency* (D.C.Cir.1993) 996 F.2d 346, 349 (*American Paper*).) In fact, upon the 1972 passage of the CWA, "[s]tate water quality standards in effect at the time ... were deemed to be the initial water quality benchmarks for CWA purposes.... The states were to revisit and, if ***631** necessary, revise

those initial standards at least once every three years." (*American Paper,* at p. 349.) Therefore, "once a water quality standard has been promulgated, section 301 of the CWA requires all NPDES permits for point sources to incorporate discharge limitations necessary to satisfy that standard." (*American Paper,* at p. 350.) Accordingly, it appears that in most instances, ****873** state water quality standards are identical to the federal requirements for NPDES permits.

II. State Law

In California, pursuant to the Porter–Cologne Water Quality Control Act (Wat.Code, § 13000 et seq.; Stats.1969, ch. 482, § 18, p. 1051; hereafter Porter–Cologne Act), the regional water quality control boards establish water quality standards—and therefore federal requirements for NPDES permits—through the adoption of water quality control plans (basin plans). The basin plans establish water quality objectives using enumerated factors—including economic factors—set forth in Water Code section 13241.

In addition, as one court observed: "The Porter–Cologne Act ... established nine regional boards to prepare water quality plans (known as basin plans) and issue permits governing the discharge of waste. (Wat.Code, §§ 13100, 13140, 13200, 13201, 13240, 13241, 13243.) The Porter–Cologne Act identified these permits as 'waste discharge requirements,' and provided that the waste discharge requirements must mandate compliance with the applicable regional water quality control plan. (Wat.Code, §§ 13263, subd. (a), 13377, 13374.)[¶] Shortly after Congress enacted the Clean Water Act in 1972, the California Legislature added Chapter 5.5 to the Porter–Cologne Act, for the purpose of adopting the necessary federal requirements to ensure it would obtain EPA approval to issue NPDES permits. (Wat.Code, § 13370, subd. (c).) As part of these amendments, the Legislature provided that the state and regional water boards 'shall, as required or authorized by the [Clean Water Act], issue waste discharge requirements ... which apply and ensure compliance with all applicable provisions [of the Clean Water Act], together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance.' (Wat.Code, § 13377.) Water Code section 13374 provides that '[t]he term "waste discharge requirements" as referred to in this division is the equivalent of the term "permits" as used in the [Clean Water Act].' [¶] California subsequently obtained the required approval to issue NPDES permits. [Citation.] Thus, the waste discharge requirements issued by the regional water boards ordinarily also serve as NPDES permits under federal law. (Wat.Code, § 13374.)" (*Building Industry Assn. of San Diego County v. State Water Resources Control Bd.* (2004) 124 Cal.App.4th 866, 875, 22 Cal.Rptr.3d 128.)

***632** Applying this federal-state statutory scheme, it appears that throughout this entire process, the Cities of Burbank and Los Angeles (Cities) were unable to have economic factors considered because the Los Angeles Regional Water Quality Control Board (Board)—the body responsible to enforce the statutory framework—failed to comply with its statutory mandate.

*****317** For example, as the trial court found, the Board did not consider costs of compliance when it initially established its basin plan, and hence the water quality standards. The Board thus failed to abide by the statutory requirement set forth in Water Code section 13241 in establishing its basin plan. Moreover, the Cities claim that the initial narrative standards were so vague as to make a serious economic analysis impracticable. Because the Board does not allow the Cities to raise their economic factors in the permit approval stage, they are effectively precluded from doing so. As a result, the Board appears to be playing a game of "gotcha" by allowing the Cities to raise economic considerations when it is not practical, but precluding them when they have the ability to do so.

Moreover, the Board acknowledges that it has neglected other statutory provisions that might have provided an additional opportunity to air these concerns. As set forth above, pursuant to the CWA, "[t]he states were to revisit and, if necessary, revise those initial standards at least once every three years—a process commonly known as triennial review. [Citation.] Triennial reviews consist of public hearings in which current water quality standards are examined to assure that they 'protect the public health or welfare, enhance the quality of water and serve the purposes' of the Act. [Citation.] Additionally, the CWA ****874** directs states to consider a variety of competing policy concerns during these reviews, including a waterway's 'use and value for public water supplies, propagation of fish and wildlife, recreational purposes,

and agricultural, industrial, and other purposes.' " (*American Paper, supra,* 996 F.2d at p. 349.)

According to the Cities, "[t]he last time that the narrative water quality objective for toxicity contained in the Basin Plan was reviewed and modified was 1994." The Board does not deny this claim. Accordingly, the Board has failed its duty to allow public discussion —including economic considerations—at the required intervals when making its determination of proper water quality standards.

What is unclear is why this process should be viewed as a contest. State and local agencies are presumably on the same side. The costs will be paid by taxpayers and the Board should have as much interest as any other agency in fiscally responsible environmental solutions.

***633** Our decision today arguably allows the Board to continue to shirk its statutory duties. The majority holds that when read together, Water Code sections 13241, 13263, and 13377 do not allow the Board to consider economic factors when issuing NPDES permits to satisfy federal CWA requirements. (Maj. opn., *ante,* 26 Cal.Rptr.3d at pp. 311–312, 108 P.3d at pp. 869–870.) The majority then bifurcates the issue when it orders the Court of Appeal "to remand this matter to the trial court to decide whether any numeric limitations, as described in the permits, are 'more stringent' than required under federal law and thus should have been subject to 'economic considerations' by the Los Angeles Regional Board before inclusion in the permits." (*Id.* at p. 314, 108 P.3d at p. 871.)

The majority overlooks the feedback loop established by the CWA, under which federal standards are linked to state-established water quality standards, including narrative water quality criteria. (See 33 U.S.C. § 1311(b)(1)(C); 40 C.F.R. § 122.44(d)(1) (2004).) Under the CWA, NPDES permit requirements include the state narrative criteria, which are incorporated into the Board's basin plan under the description "no toxins in toxic amounts." As far as I can determine, NPDES permits *****318** designed to achieve this narrative criteria (as well as designated beneficial uses) will usually implement the state's basin plan, while satisfying federal requirements as well.

If federal water quality standards are typically identical to state standards, it will be a rare instance that a state exceeds its own requirements and economic factors are taken into consideration. [1] In light of the Board's initial failure to consider costs of compliance and its repeated failure to conduct required triennial reviews, the result here is an unseemly bureaucratic bait-and-switch that we should not endorse. The likely outcome of the majority's decision is that the Cities will be economically burdened to meet standards imposed on them in a highly questionable manner. [2] In these times of tight fiscal budgets, it is difficult to imagine imposing additional financial burdens on municipalities without at least allowing them to present alternative views.

Based on the facts of this case, our opinion today appears to largely retain the status quo for the Board. If the Board can actually demonstrate that only the precise limitations at issue here, implemented in only one way, will achieve the desired water standards, perhaps its obduracy is justified. That case has yet to be made.

***634** Accordingly, I cannot conclude that the majority's decision is wrong. The analysis ****875** may provide a reasonable accommodation of conflicting provisions. However, since the Board's actions "make me wanna holler and throw up both my hands," [3] I write separately to set forth my concerns and concur in the judgment —*dubitante.* [4]

All Citations

35 Cal.4th 613, 108 P.3d 862, 26 Cal.Rptr.3d 304, 60 ERC 1470, 35 Envtl. L. Rep. 20,071, 05 Cal. Daily Op. Serv. 2861, 2005 Daily Journal D.A.R. 3870

Footnotes

* Brown, J., did not participate therein.

1 Further undesignated statutory references are to the Water Code.

2 The Los Angeles water region "comprises all basins draining into the Pacific Ocean between the southeasterly boundary, located in the westerly part of Ventura County, of the watershed of Rincon Creek and a line which coincides with the

southeasterly boundary of Los Angeles County from the ocean to San Antonio Peak and follows thence the divide between San Gabriel River and Lytle Creek drainages to the divide between Sheep Creek and San Gabriel River drainages." (§ 13200, subd. (d).)

3 A "point source" is "any discernable, confined and discrete conveyance" and includes "any pipe, ditch, channel ... from which pollutants ... may be discharged." (33 U.S.C. § 1362(14).)

4 This opinion uses the terms "narrative criteria" or descriptions, and "numeric criteria" or effluent limitations. Narrative criteria are broad statements of desirable water quality goals in a water quality plan. For example, "no toxic pollutants in toxic amounts" would be a narrative description. This contrasts with numeric criteria, which detail specific pollutant concentrations, such as parts per million of a particular substance.

5 For example, the permits for the Tillman and Los Angeles–Glendale Plants limited the amount of fluoride in the discharged wastewater to 2 milligrams per liter and the amount of mercury to 2.1 micrograms per liter.

6 Unchallenged on appeal and thus not affected by our decision are the trial court's rulings that (1) the Los Angeles Regional Board failed to show how it derived from the narrative criteria in the governing basin plan the specific numeric pollutant limitations included in the permits; (2) the administrative record failed to support the specific effluent limitations; (3) the permits improperly imposed daily maximum limits rather than weekly or monthly averages; and (4) the permits improperly specified the manner of compliance.

7 The concurring opinion misconstrues both state and federal clean water law when it describes the issue here as "whether the Clean Water Act prevents or prohibits the regional water board from considering economic factors to justify pollutant restrictions *that meet the clean water standards in more cost-effective and economically efficient ways.*" (Conc. Opn. of Brown, J., *post,* 26 Cal.Rptr.3d p. 314, 108 P.3d at p. 871, some italics added.) This case has nothing to do with meeting federal standards in more cost effective and economically efficient ways. State law, as we have said, allows a regional board to consider a permit holder's compliance cost to *relax* pollutant concentrations, as measured by numeric standards, for pollutants in a wastewater discharge permit. (§§ 13241 & 13263.) Federal law, by contrast, as stated above in the text, "prohibits the discharge of pollutants into the navigable waters of the United States unless there is compliance with federal law (33 U.S.C. § 1311(a)), and publicly operated wastewater treatment plants such as those before us here must comply with the [federal] act's *clean water standards, regardless of cost* (see *id.,* §§ 1311(a), (b)(1)(B) & (C), 1342(a)(1) & (3))." (Italics added.)

8 As amended in 1978, section 13377 provides for the issuance of waste discharge permits that comply with federal clean water law "together with any more stringent effluent standards or limitations necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance." We do not here decide how this provision would affect the cost-consideration requirementsof sections 13241 and 13263 when more stringent effluent standards or limitations in a permit are justified for some reason independent of compliance with federal law.

1 (But see *In the Matter of the Petition of City and County of San Francisco, San Francisco Baykeeper et al.* (Order No. WQ 95–4, Sept. 21, 1995) 1995 WL 576920.)

2 Indeed, given the fact that "water quality standards" in this case are composed of broadly worded components (i.e., a narrative criteria and "designated beneficial uses of the water body"), the Board possessed a high degree of discretion in setting NPDES permit requirements. Based on the Board's past performance, a proper exercise of this discretion is uncertain.

3 Marvin Gaye (1971) "Inner City Blues."

4 I am indebted to Judge Berzon for this useful term. (See *Credit Suisse First Boston Corp. v. Grunwald* (9th Cir.2005) 400 F.3d 1119 (conc. opn. of Berzon, J.).)

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KeyCite Yellow Flag - Negative Treatment
Distinguished by California State Emp. Ass'n v. Trustees of Cal. State Colleges, Cal.App. 1 Dist., October 20, 1965

150 Cal.App.2d 671, 310 P.2d 673

GLENN D. COREY, Appellant,
v.
GOODWIN J. KNIGHT, as Governor, etc., et al., Defendants; CLARKE GRAY, as County Auditor, etc., Respondent.

Civ. No. 22068.
District Court of Appeal, Second District, Division 1, California.
May 6, 1957.

HEADNOTES

(1a, 1b)
Municipal Courts § 7--Judges--Qualifications.
Under Const., art. VI, § 23, declaring that "any elected judge or justice of an existing court who has served in that capacity by election or appointment for five consecutive years immediately preceding the effective date of this amendment shall be eligible to become a judge of a municipal court by which the existing court is superseded upon the establishment of said municipal court," plaintiff was ineligible to become judge of the Municipal Court of the Ventura Judicial District where, if the words "existing court" referred to the Justice Court of Ventura Judicial District, plaintiff was ineligible because he had not served as judge of that court for five consecutive years immediately preceding November 7, 1950, the date of adoption of the constitutional amendment, since such court was not in existence before January 5, 1953, and where, if the words "existing court" referred to the Justice's Court of Ventura Township, plaintiff was ineligible because that court could not be "superseded on the establishment of said municipal court" in 1956, since it was superseded on January 5, 1953, and plaintiff became eligible as judge of the Justice Court under Gov. Code, § 71601, solely because he was "the incumbent of a superseded inferior court."

See **Cal.Jur.2d,** Courts, § 173 et seq.

(2)
Justices of the Peace and Justice Courts § 1--Distinctions.
A justice's court of a township is not the same as a justice court of a judicial district, since the jurisdiction of a justice's court is not exclusive but may be shared with a police court, whereas the jurisdiction of a justice court is exclusive within its territorial area, the territorial area of a township is not necessarily the same as the territorial area of a judicial district, the presiding officer of a justice's court is a justice of the peace whereas the presiding officer of a justice court is a judge, and there are no qualifications for a justice of the peace whereas a judge of a justice court must either be a lawyer or have passed an examination prescribed by the Judicial Council.

(3)
Statutes § 180(2)--Construction--Executive or Departmental Construction.
Where the attorney general has interpreted a law in a written opinion and that position has been adopted by an administrative agency, the administrative interpretation of such law is entitled to respect by the courts and, unless clearly erroneous, is a significant factor to be considered in ascertaining the meaning of such law.

See **Cal.Jur.,** Statutes, § 152.

(4)
Statutes § 152--Construction--Words and Phrases.
A word or clause in a statute is presumed to have the same meaning throughout.

(5)
Statutes § 139--Construction--Exceptions.
Exceptions in a statute are to be narrowly, not broadly, construed.

See **Cal.Jur.,** Statutes, § 119; **Am.Jur.,** Statutes, § 431 et seq.

(6)
Judges § 17.5--Retirement.
Under the County Employees Retirement Law of 1937 (Gov. Code, § 31450 et seq.), a judge of the justice court of a judicial district who was over 70 years of age at the time of his election to such court must be retired "at the end of the first term to which he is elected and which commences on a date following his 70th birthday" (Gov. Code, § 31671), and where his term of office will end by operation of law when a municipal court is established and such

court will come into existence when it is found, pursuant to Gov. Code, § 71043, subd. (c), that there are 40,000 inhabitants of the district, at that moment such judge will be compulsorily retired and entitled to retirement benefits under the County Employees Retirement Law of 1937.

SUMMARY

APPEAL from a judgment of the Superior Court of Ventura County. Charles F. Blackstock, Judge. Affirmed.

Action for declaratory relief. Judgment for defendants affirmed.

COUNSEL

Waite & Drapeau and David R. Drapeau for Appellant.
Charles Kaplan and Arden T. Jensen as Amici Curiae on behalf of Appellant.
Roy A. Gustafson, District Attorney (Ventura), for Respondent.

FOURT, J.

This is an appeal from a judgment in a declaratory relief action wherein it was adjudged "that if plaintiff is Judge of the Justice Court of the Ventura Judicial District at the time when the district is found to have over 40,000 inhabitants, (1) a Municipal Court will thereupon supersede the Justice Court, (2) plaintiff will be ineligible to be Judge of the Municipal Court, (3) a vacancy will exist to be filled by ***673** appointment of the Governor, (4) plaintiff will be compulsorily retired and (5) plaintiff will receive retirement benefits under the County Employees Retirement Law of 1937."

A resume of the facts in the case is as follows: In about 1947, the Legislature requested the Judicial Council to make a survey of all courts in California exercising jurisdiction inferior to the superior court. After an extensive study the Judicial Council, in 1949, recommended to the Legislature a plan for the reorganization of such courts (Twelfth Biennial Report [1948], Judicial Council of California). The Legislature, through committees, conducted public hearings, and as a result thereof some changes and additions were made in the proposed constitutional amendments and the proposed statutes drafted by the council. The interpretation to be given to some of the words added in one of the constitutional amendments which was proposed and adopted (art. VI, § 23) is the only real problem to be determined in this case. The language in question is contained in the "exception" section, generally referred to as the "Grandfather Clause," the pertinent parts of which are as follows:

"No person shall be eligible to the office of a Justice of the Supreme Court, or of a district court of appeal, or of a judge of a superior court, or of a municipal court, unless he shall have been admitted to practice before the Supreme Court of the State for a period of at least five years immediately preceding his election or appointment to such office; provided, however, that any elected judge or justice of an existing court who has served in that capacity by election or appointment for five consecutive years immediately preceding the effective date of this amendment shall be eligible to become the judge of a municipal court by which the existing court is superseded upon the establishment of said municipal court or at the first election of judges thereto and for any consecutive terms thereafter for which he may be re-elected. ..."

The Legislature voted to submit the proposed constitutional amendment to the people at the general election, November 7, 1950. The proposition was Number 3 on the ballot at that time, and was adopted by the people by a large majority. At the same election, section 11 of article VI of the Constitution was amended to provide for only two types of courts inferior to the superior court, namely, justice courts and municipal courts, and further to validate the laws relating to judicial districts enacted in the legislative session of 1949, in anticipation of the adoption of the constitutional amendments. The ***674** amendments provided, among other things, in substance, that each county should be divided into judicial districts and that if the population of any district were over 40,000, the district should have a municipal court, or if under 40,000, a justice court. The Legislature, by section 1 of chapter 1511, Statutes 1949, directed the board of supervisors to district their counties. The new plan was to become effective January 1, 1952, except where two or more incumbent judges would be eligible to be judges of the new court, in which case section 2 of chapter 1510, Statutes 1949, provided that they "shall not automatically succeed to judicial positions in the municipal or justice court, and the existing courts shall continue to function within the district until the first judge or judges of said municipal or justice court shall be elected by the qualified electors of the district at the first general state election held following the expiration of 90 days and qualify."

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Article VI, section 11, as amended in 1950, also contained a provision that "existing courts shall continue to function as presently organized until the first selection and qualification of the judge or judges of the municipal or justice court, at which time, unless otherwise provided by law, pending actions, trials and all pending business of existing courts shall be transferred to and become pending in the municipal or justice court established for the judicial district or city and county in which they are situated, and all records of such superseded courts shall be transferred to, and thereafter be and become records of said municipal or justice court."

On July 6, 1944, Ventura Township was one of nine townships into which Ventura County was divided. The court of Ventura Township was a class B justice court. The justice of the peace who presided over the court died and appellant herein was appointed by the board of supervisors to fill the vacancy.

The city of San Buenaventura (hereinafter referred to as Ventura) is located in the territorial limits of Ventura Township. The charter of Ventura provides for a police court and such court was presided over by Judge B. L. Gregg, a former member of The State Bar. Appellant's original term as justice of the peace expired January 6, 1947. He was elected to that position for the term from January 6, 1947, to January 2, 1951, and was reelected to that position for the term from January 2, 1951, to January 3, 1955. On October 26, 1951, the population of the township having been found to be over 30,000 by the 1950 census, the court became a class A justice court. The boundaries of the Ventura Judicial District were ***675** established as of September 4, 1951, by Ordinance Number 472 of the Board of Supervisors of Ventura County, in conformity with the Statutes of 1949. The area of the district included, but was larger than, Ventura Township. The population of the district was less than 40,000.

On January 1, 1952, there were two judicial officers of courts within the area of Ventura Judicial District, namely, appellant as justice of the peace of Ventura Township, and B. L. Gregg as judge of the police court in the city of Ventura. Both were candidates for the office of judge of the Justice Court of Ventura Judicial District at the election in 1952. Appellant was not and never has been an attorney, and had not passed any examination prescribed by the Judicial Council. Appellant, who was over 70 years of age at the time of the election, was elected and took office as judge of the justice court on January 5, 1953, for the term ending January 5, 1959.

The Justice Court of Ojai Judicial District began functioning in January, 1952, because only one incumbent was eligible to the judgeship. The remaining four districts in Ventura County were inoperative as such, pending the election of judges. Judges were elected in 1952, and the four districts began functioning as such on January 5, 1953, or, in other words, on January 5, 1953, Ventura County had five judicial districts, each with a functioning justice court.

An action was filed in the superior court of Ventura County on July 5, 1956, for the purpose of having it declared that Ventura Judicial District had a population of over 40,000. On September 6, 1956, the trial judge of that court found that there were 40,000 or more persons in the district, and a municipal court is now in existence. Appellant contends that he is eligible to be, and that he is the judge of such municipal court now in existence. Appellant further asserts that he will continue to be a judge of the justice court if found to be ineligible to be the municipal court judge, until a municipal court judge is elected for the term beginning January 5, 1959. Respondent asserts that appellant is ineligible and he cannot pay appellant now that such municipal court is established; that appellant's term is now terminated as of September 6, 1956, the date upon which the municipal court was declared to be in existence, and appellant is compulsorily retired, and that a vacancy existed which was to be filled by appointment by the Governor.

Appellant, in his briefs and in the oral argument, has made ***676** issue of the first contention heretofore mentioned, namely, that he is eligible to become judge of the municipal court of Ventura Judicial District, and no argument or authorities were presented on the other matters, and we therefore assume that the disposition of the first question will dispose of this appeal.

Honorable Charles F. Blackstock, the learned trial judge, prepared findings of fact and conclusions of law and in his conclusions set forth the applicable law. We believe that the commentary of the trial judge concisely and correctly sets forth the law and we adopt his statements in reference thereto, as follows:

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"Both parties concede that if Ventura Judicial District is found to have a population of 40,000 persons and if plaintiff is eligible to be a municipal court judge, the court will begin to function immediately with plaintiff as judge. Government Code, section 71080. Not being an attorney, plaintiff is eligible, if at all, only under this proviso of section 23 of article VI of the Constitution:

" '[A]ny elected judge or justice of an *existing court* who has served in that capacity by election or appointment for five consecutive years immediately preceding the effective date of this amendment shall be eligible to become a judge of a municipal court by which the *existing court* is *superseded* upon the establishment of said municipal court. ...' (Emphasis added.)

([1a]) "The basic question is the meaning of the words 'existing court.' The amendment was adopted November 7, 1950. Do the words refer to a court then existing or to a court existing at the time the amendment is invoked?

"The court over which plaintiff presided on November 7, 1950, was the Justice's Court of Ventura Township. The court over which he now presides is the Justice Court of Ventura Judicial District. If those two courts are the same court (identified by different names), plaintiff is clearly eligible regardless of the time to which the words 'existing court' refer.

([2]) "A Class B Justice's Court had jurisdiction over cases involving claims up to $300. A justice court has jurisdiction of claims up to $500. The jurisdiction of a justice's court was not exclusive and, in fact, was shared in Ventura Township with the police court. The jurisdiction of the justice court is exclusive within its territorial area. The territorial area of a township was not necessarily the same as the territorial area of a judicial district and, in fact, the boundaries of the Ventura Judicial District are larger than the boundaries of ***677** Ventura Township. (There were nine townships in Ventura County, whereas there are only five judicial districts.) The presiding officer of a justice's court was a justice of the peace. The presiding officer of a justice court is a judge. There were no qualifications for a justice of the peace. A judge of a justice court must either be a lawyer or have passed an examination prescribed by the Judicial Council. The term of a justice of the peace was four years. The term of a judge of the justice court is six years. It appears, therefore, that the two courts are different and are not the same.

"This conclusion is fortified by language used in the pertinent laws. Article 6, section 11 of the Constitution refers to the fact that 'existing courts [in a judicial district] shall continue to function' until the new justice court is established at which time all records of such superseded courts shall be transferred to [the] ... justice court.' Government Code, section 71080, provided that where two persons were eligible to be judge of the new justice court (as were Justice of the Peace Glenn Corey and Judge B. L. Gregg in the Ventura Judicial District), 'such incumbents shall not automatically succeed to judicial positions [on January 1, 1952] in the ... justice court, and the existing courts shall continue to function within the district until the first judge ... of such ... justice court [is] elected [for the term beginning January 5, 1953].' Similarly, chapter 14, Statutes of 1952, First Extraordinary Session, referred to the fact that:

" 'Certain Class B justices' courts will *remain in existence* until January 5, 1953, under the inferior court reorganization program, after which time there will be no courts in the State inferior to the superior courts except municipal and justice courts.' (Emphasis added.)

"Thus it is plain that the Justice's Court of Ventura Township is not the same as the Justice Court of Ventura Judicial District.

([1b]) "Which, then, is the 'existing court' referred to in the eligibility clause of the Constitution? If it is the Justice Court of Ventura Judicial District, plaintiff is ineligible because plaintiff has not 'served in that capacity [that is, judge] by election or appointment for five consecutive years immediately preceding [November 7, 1950].' This is so because that court did not exist *before* January 5, 1953. If it is the Justice's Court of Ventura Township, plaintiff is ineligible because that court will not be 'superseded upon the establishment of said municipal court.' This is so because that court ***678** did not exist *after* January 5, 1953 and cannot be superseded in 1956. That court was superseded on January 5, 1953, and plaintiff holds his present position pursuant to section 71601 of the Government Code which made him eligible to be judge of the justice court solely because he was 'the incumbent of a superseded inferior court.' In either event, plaintiff is ineligible. (Had a municipal court been established

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between November 7, 1950 and January 5, 1953, plaintiff would have been eligible to be judge.)

"The conclusion that plaintiff is ineligible has been reached by the attorney general (21 Ops. Cal. Atty. Gen. 152) and by defendant county auditor. ([3]) Where the attorney general has interpreted a law in a written opinion and that position has been adopted by an administrative agency, the 'administrative application of an act is entitled to respect by the courts, and unless clearly erroneous is a significant factor to be considered in ascertaining the meaning of a statute.' *Mudd v. McColgan* (1947), 30 Cal.2d 463 [183 P.2d 10].

"Proposition 19 on the ballot in 1954 was this:

" 'Proposed Amendment to Article VI

" 'Sec. 23. No person shall be eligible to the office of a justice of the Supreme Court, or of a district court of appeal, or of a judge of a superior court, or of a municipal court, unless he shall have been admitted to practice before the Supreme Court of the State for a period of at least five years immediately preceding his election or appointment to such office; provided, however, that any elected judge or justice who has served by election or appointment *as such judge or justice of a court superseded by a justice or municipal court* for five consecutive years immediately preceding *November 7, 1950, and has served continuously as a judge of such superseding court after said date until the establishment of a municipal court,* shall be eligible to become the judge of a municipal court which *supersedes* the court of *which he is judge* upon the establishment of said municipal court or at the first election of judges thereto and for any consecutive terms thereafter for which he may be re- elected. The requirement of consecutive years of judicial service shall be deemed to have been met even though interrupted by service in the armed forces of the United States during the period of war.' ***679**

"In the pamphlet sent to all voters, the following argument was made in favor of the proposition:

" 'The voters of California at the 1950 general election adopted a constitutional amendment providing for the reorganization of the inferior courts of this State and reducing the number of such courts to two classes known as municipal courts and justice courts. The Constitution then required admission to practice law before the Supreme Court for at least five years before a person is eligible to be a municipal court judge. The 1950 amendment made any elective judge or justice of an existing court superseded by a municipal court eligible to become judge if he had served in his present capacity for five consecutive years immediately preceding the effective date of the amendment. It was the intent and spirit of the amendment that experienced incumbent Justices of the Peace would be permitted to continue in office, even though their courts were changed to municipal courts without requiring that they be lawyers.

" 'The Attorney General of California last year gave an opinion that the present Justices who are not attorneys would not be eligible to become the judges of municipal courts when such a court succeeds their justice courts.

" 'Following the opinion of the Attorney General, both houses of the Legislature unanimously voted to submit the present amendment to the Constitution, for the reason that it was the consensus of the Legislature that incumbent Justices who qualify as to consecutive years of service should not be ineligible to continue as municipal court judges because they are not attorneys.

" 'By adopting the present amendment, the people will remove any doubt as to the status of incumbent Justices who are not attorneys and they will be eligible to become municipal judges upon the conversion of their courts if they were eligible to do so in 1950.

" 'There should be nothing in the administration of justice in municipal courts which requires men who have had long experience as judges to be attorneys. The Justices of the Peace have always been close to the people and responsive to their needs in matters over which they have jurisdiction, and it is felt that when a Justice has been in office for many years, he has met with approval at the hands of the people, even though he is not an attorney.

" 'This amendment merits the approval of the people for the reasons herein set forth, in order to protect incumbent ***680** Justices as to their eligibility for office, even though they are not attorneys.

" 'J. B. Cooke,

State Assemblyman, 37th Dist.'

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"Had it been passed, it would have been presumed to have been passed with full knowledge of the attorney general's opinion (*Coca-Cola Co. v. State Board of Equalization* [1945], 25 Cal.2d 918 [156 P.2d 1]) and it would have been presumed to have changed the law, rather than to have 'clarified' it. (*Loew's, Inc. v. Byram* (1938), 11 Cal.2d 746 [82 P.2d 1]. Having failed of passage, there is a presumption that the provision means what the attorney general said it means. The interpretation by the attorney general is the same as this court has reached independently.

"Plaintiff's only possible hope is that the court will, as he urges it to do, 'attach separate meanings to the two uses of the term "existing court. " ' In other words, plaintiff says that 'existing court' means the Justice's Court of Ventura Township in the first part of the sentence and means the Justice Court of Ventura Judicial District in the second part of the sentence. ([4]) This construction is not reasonable because a word or clause in a statute is presumed to have the same meaning throughout. *Pitte v. Shipley* (1873), 46 Cal. 154; *Hoag v. Howard* (1880), 55 Cal. 564. ([5]) Even if reasonable, that construction would be extremely broad and exceptions are to be narrowly, not broadly, construed. *City of National City v. Fritz* (1949), 33 Cal.2d 635 [204 P.2d 7].

([6]) "Plaintiff, as an elective officer, must be retired 'at the end of the first term to which he is elected and which commences on a date following his 70th birthday.' (Gov. Code, § 31671.) His term of office will end, by operation of law, when a Municipal Court is established. 'In each district containing a population of more than 40,000 inhabitants ... there shall be a municipal court.' Constitution, article VI, section 11. 'Whenever a municipal court is established in a district in which a justice court was previously established ..., the justice court shall cease to exist ...' Government Code, section 71084. A 'vacancy in the office of judge of a municipal court shall be filled by appointment by the Governor ...' Government Code, section 71180. (If plaintiff were eligible, he would automatically become judge of the municipal court. If two or more incumbent judges were eligible to one position of judge of the municipal court, the court would not begin to function until January, 1959, following ***681** the election of a judge in 1958. Gov. Code, section 71080, 71081. Neither of these situations exists in this case.) Since the necessary legislation exists for a municipal court in the Ventura Judicial District (Gov. Code, §§ 74880-74887), the court will come into existence when it is found, pursuant to section 71043, subdivision (c), of the Government Code, that there are 40,000 inhabitants of the district. At that moment plaintiff will be compulsorily retired and will be entitled to retirement benefits under the County Employees Retirement Law of 1937."

The judgment is affirmed.

White, P. J., and Doran, J., concurred.
Appellant's petition for a hearing by the Supreme Court was denied July 3, 1957.

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7 Cal.App.5th 628
Court of Appeal,
Third District, California.

DEPARTMENT OF ALCOHOLIC BEVERAGE CONTROL, Petitioner,
v.
ALCOHOLIC BEVERAGE CONTROL APPEALS BOARD, Respondent;
Garfield Beach CVS, LLC et al., Real Parties in Interest.

C078574
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Filed 1/17/2017

Synopsis

Background: Department of Alcoholic Beverage Control appealed decision of the Alcoholic Beverage Control Appeals Board, No. AB9434, which reversed suspension of store's off-sale general license for selling alcohol to a minor decoy.

Holdings: The Court of Appeal, Hoch, J., held that:

[1] Alcoholic Beverage Control rule which required that minor decoys "truthfully answer any questions about his or her age," did not require minor decoy to truthfully respond to clerk's statement, after looking at driver's license, that "I would not have guessed it, you must get asked a lot," as rule only required decoys to answer questions, and

[2] rule did not impose affirmative duty on minor decoy to speak up in order to clarify any mistake regarding age articulated by sales clerk.

Annulled; reinstated and remanded.

West Headnotes (15)

[1] Intoxicating Liquors
Scope and extent of review in general

In the absence of a clear abuse of discretion, the courts will uphold the decision of the Department of Alcoholic Beverage Control to suspend a liquor license for violation of the liquor laws. Cal. Const. art. 20, § 22.

Cases that cite this headnote

[2] Intoxicating Liquors
Direct control by state agencies
Intoxicating Liquors
Administrative officers and proceedings
Intoxicating Liquors
Judicial review and enforcement

The administration of the Alcoholic Beverage Control Act, within the scope of the purposes of that act, is initially vested in the Department of Alcoholic Beverage Control; its decisions, however, are subject to administrative review by the Alcohol Beverage Control Appeals Board, and a final order of the Board is, in turn, subject to judicial review. Cal. Bus. & Prof. Code § 23000 et seq.

Cases that cite this headnote

[3] Intoxicating Liquors
Administrative officers and proceedings
Intoxicating Liquors
Judicial review and enforcement

The scope of review of the decisions of the Department of Alcoholic Beverage Control is the same in the Alcohol Beverage Control Appeals Board and the Court of Appeal. Cal. Bus. & Prof. Code § 23090.2.

Cases that cite this headnote

[4] Intoxicating Liquors
Judicial review and enforcement

Court of Appeal defers to the Department of Alcoholic Beverage Control's interpretation of its own rules, since the agency is likely to be intimately familiar with regulations it authored and sensitive to the practical

implications of one interpretation over another. Cal. Bus. & Prof. Code § 23090.2.

Cases that cite this headnote

[5] **Intoxicating Liquors**
Judicial review and enforcement

Courts generally will not depart from the Department of Alcoholic Beverage Control's contemporaneous construction of a rule enforced by the Department unless such interpretation is clearly erroneous or unauthorized. Cal. Bus. & Prof. Code § 23090.2.

Cases that cite this headnote

[6] **Intoxicating Liquors**
Judicial review and enforcement

Decisions of the Department of Alcoholic Beverage Control are subject to review only for insufficiency of the evidence, excess of jurisdiction, errors of law, or abuse of discretion. Cal. Bus. & Prof. Code § 23090.2.

Cases that cite this headnote

[7] **Intoxicating Liquors**
To Minors

Alcoholic Beverage Control rule which required that minor decoys "truthfully answer any questions about his or her age," did not require minor decoy to truthfully respond to clerk's statement, after looking at driver's license, that "I would not have guessed it, you must get asked a lot," as rule only required decoys to answer questions. Cal. Bus. & Prof. Code § 25658(a); Cal. Code Regs. tit. 4, § 141(b)(4).

Cases that cite this headnote

[8] **Intoxicating Liquors**
To Minors

Under Department of Alcoholic Beverage Control rule providing that "a decoy shall answer truthfully any questions about his or her age," minor decoys do not need to respond to statements of any kind, nor do they need to respond truthfully to questions other than those concerning their ages. Cal. Bus. & Prof. Code § 25658(a); Cal. Code Regs. tit. 4, § 141(b)(4).

Cases that cite this headnote

[9] **Intoxicating Liquors**
To Minors

Department of Alcoholic Beverage Control rule providing that "a decoy shall answer truthfully any questions about his or her age" does not require minor decoys to correct mistakes articulated by licensed alcohol sellers; instead, the decoys need to respond truthfully only to questions about their ages. Cal. Bus. & Prof. Code § 25658(a); Cal. Code Regs. tit. 4, § 141(b)(4).

Cases that cite this headnote

[10] **Intoxicating Liquors**
To Minors

Alcoholic Beverage Control rule regarding use of minor decoys, which allowed law enforcement to use decoys "in a fashion that promotes fairness," did not impose affirmative duty on minor decoy to speak up in order to clarify any mistake regarding age articulated by sales clerk who stated, after looking at driver's license, that "I would not have guessed it, you must get asked a lot"; rule implement goal of fairness by imposing five specific requirements, minor decoy did not say anything untrue but rather presented accurate information in the form of his driver license, and minor decoy's silence did not involve any attempt to pressure or encourage the sale of an alcoholic beverage to him. Cal. Bus. & Prof. Code § 25658(a); Cal. Code Regs. tit. 4, § 141.

Cases that cite this headnote

[11] **Intoxicating Liquors**
Judicial review and enforcement

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Court of Appeal may take judicial notice of decisions of the Alcoholic Beverage Control Appeals Board.

Cases that cite this headnote

[12] Intoxicating Liquors
Judicial review and enforcement

Although not bound by the decisions of the Alcoholic Beverage Control Appeals Board, Court of Appeal would take judicial notice of their decisions and consider their reasoning for persuasive value when determining whether rule regarding use of minor decoys, which required law enforcement to use minor decoys "in a fashion that promotes fairness," was ambiguous. Cal. Code Regs. tit. 4, § 141(a).

Cases that cite this headnote

[13] Statutes
Exceptions, Limitations, and Conditions

An exception to a statute is to be narrowly construed.

Cases that cite this headnote

[14] Statutes
Exceptions, Limitations, and Conditions

When a statute specifies an exception, no others may be added under the guise of judicial construction.

Cases that cite this headnote

[15] Intoxicating Liquors
Evidence

Minor decoy's testimony in proceedings to suspend liquor store's off-sale general license was sufficient to support finding that store clerk's words regarding liquor purchase were a statement, rather than a question about decoy's age to which decoy was required to respond truthfully; decoy's testimony, including that clerk stated "I would not have guessed it, you must get asked a lot," or words to that effect, was clear and credible. Cal. Bus. & Prof. Code § 25658(a); Cal. Code Regs. tit. 4, § 141(b)(4).

Cases that cite this headnote

****132** ORIGINAL PROCEEDING: Petition for writ of review. Petition granted. Alcoholic Beverage Control Appeals Board No. AB9434.

Attorneys and Law Firms

Kamala D. Harris, Attorney General, Alicia M.B. Fowler, Assistant Attorney General, Peter D. Halloran and Lauren Sible, Deputy Attorneys General for Petitioner.

Linda A. Mathes, Sarah M. Smith, John D. Ziegler for Respondent Alcoholic Beverage Control Appeals Board.

Solomon, Saltsman & Jamieson, Stephen Warren Solomon, Ralph Barat Saltsman, Stephen Allen Jamieson, R. Bruce Evans, ****133** Ryan M. Kroll, Jennifer L. Oden, Los Angeles, and Margaret Warner Rose for Real Parties in Interest.

Opinion

HOCH, J.

***630** California Constitution, article XX, section 22, prohibits the sale of alcoholic beverages to persons under 21 years of age. (See also Bus. & Prof. Code, § 25658, subd. (a)), [1] [making it a misdemeanor to sell alcohol to a person under 21 years of age]. Here, the Department of Alcoholic Beverage ***631** Control (Department) issued a 15–day suspension of an off-sale general license held by the Garfield Beach CVS LLC Longs Drug Stores California LLC, doing business as CVS Pharmacy Store 9174 (CVS) after an administrative law judge found the store clerk sold alcohol to a minor decoy. [2] The Alcohol Beverage Control Appeals Board (Appeals Board) reversed the suspension based on California Code of Regulations, title 4, section 141 (Rule 141) that allows a law enforcement agency to use an underage decoy only "in a 'fashion that promotes fairness.' (*Id.*, subd. (a).) In the Appeals Board's view, the suspension was unfair because the minor decoy did not respond about his age when the store clerk looked at his driver license and remarked, "I would never have guessed it, you must get asked a lot." To challenge the reversal

of the license suspension, the Department petitioned for a writ of review in this court. (§ 23090.)

The Department contends it correctly interprets Rule 141 to require minor decoys to answer only questions about their ages. Based on the administrative law judge's finding in this case that the store clerk's remark constituted a statement rather than a question, the Department argues its decision was legally correct and supported by substantial evidence. The Appeals Board counters Rule 141 is ambiguous and results "in confusion and manifest unfairness." And CVS argues the Department's interpretation of Rule 141 unfairly allows decoys to remain silent in the face of mistaken statements about age. According to CVS, affirming the license suspension would allow deceptive and misleading silence in the face of a store clerk's explicit mistake about the minor decoy's age.

We conclude Rule 141 is not ambiguous in requiring minor decoys to answer truthfully only questions about their ages. Because substantial evidence supports the administrative law judge's factual finding the decoy in this case was not questioned about his age, we determine as a matter of law that Rule 141 does not provide CVS with a defense to the accusation it sold an alcoholic beverage to an underage buyer. Accordingly, we annul the Appeals Board's decision.

BACKGROUND

The Department's Imposition of a 15–day License Suspension

In October 2013, the Department accused CVS of selling alcohol to an underage person at its Garfield Beach store. An administrative hearing was ***632** held in February 2014, in which the administrative law judge made the following findings of fact:

CVS has held an off-sale general license to sell alcohol since June 2009, with no prior record of discipline by the Department. On June 3, 2013, Joseph Childers was 18 years old and had the appearance and mannerisms of a person under the age of 21. On that date, Childers accompanied ****134** Department agents and law enforcement officers to conduct an alcoholic beverage decoy operation at the Garfield Beach CVS store. Childers entered the store at 2:30 p.m., went to the beer cooler where he selected a 24–ounce bottle of beer, and took the beer to the checkout line. The CVS store clerk scanned the bottle of beer and asked Childers for identification. Childers handed his California driver license to the clerk. The driver license indicated Childers's date of birth and had a red stripe with white letters that stated, "AGE 21 IN 2015." In addition, the driver license had a blue stripe with white letters that stated, "PROVISIONAL UNTIL AGE 18 IN 2012."

The administrative law judge made the following factual findings: "The clerk looked at Childers's [driver license], tried to scan it, and looked at the [license] again. She then stated, 'I would not have guessed it, you must get asked a lot,' or words to that effect. The clerk's remark was framed as a statement not a question. The decoy did not say anything to the clerk in response to her remark. He thought the clerk's statement was 'casual conversation.' The decoy also testified the statement might or might not have been related to his age. Thus, in his mind it was unclear what the clerk meant by her statement. [¶] The clerk sold Childers the 24-ounce bottle of Corona beer. At no time during the transaction did the clerk ask Childers how old he was or his age. Following the sale of the beer, the decoy exited the premises." The administrative law judge found Childers's testimony at the hearing to be clear, concise, and credible. On this basis, the administrative law judge decided there was cause to suspend CVS's off-sale general license for 15 days.

In April 2014, the Department adopted the administrative law judge's proposed decision as its decision in this case. CVS appealed the decision to the Appeals Board.

The Appeals Board's Reversal of License Suspension

In January 2015, the Appeals Board issued its decision. The Appeals Board's decision relied upon its prior decision to conclude Rule 141 required the decoy to respond to the store clerk's statement upon looking at his driver license. The Appeals Board's decision emphasized the following testimony by the decoy at the administrative hearing:

***633** "[Counsel for CVS]: [A]fter the clerk made that statement to you, what did you take that statement to mean?

"A. [Childers]: Casual conversation.

"Q. And [in] that casual conversation did you see it related in any way to your age?

"A. Yes and no.

"Q. When you say 'Yes and no,' what do you mean?

"A. Yes, that maybe *I looked younger*. No, because she *thought I was older* or thought that I do it a lot, you know."

The Appeals Board reasoned that "[w]hen the decoy believes, as here, that a clerk's remarks are ambiguous as to his or her age, the decoy has an obligation to respond verbally and truthfully. That is the plain meaning of rule 141(a)'s language instructing that minor decoy operations must be conducted in a 'fashion that promotes fairness.' " (Italics omitted.) The Appeals Board further stated that whenever "the decoy him or herself interprets a seller's comments to *in any way* pertain to the decoy's age, the Department should insist that decoy err on the side of responding with clarification." On these grounds, the Appeals Board reversed the Department's decision and rescinded the ****135** suspension of CVS's off-sale general license.

Petition for Writ of Review

In February 2015, the Department filed in this court a petition for writ of review from the decision of the Appeals Board. We issued a writ of review in March 2015. (§ 23090.)

DISCUSSION

I

Standard of Review

[1] **[2]** In addition to prohibiting the sale of alcohol to minors, the California Constitution "vests the Department with broad discretion to revoke or suspend liquor licenses 'for good cause' if continuing the license would be 'contrary to public welfare or morals.' (Cal. Const., art. XX, § 22.) In the ***634** absence of a clear abuse of discretion, the courts will uphold the Department's decision to suspend a license for violation of the liquor laws. (E.g., *Martin v. Alcoholic Bev. etc. Appeals Bd.* (1959) 52 Cal.2d 238, 248–249 [340 P.2d 1].)" (*Provigo Corp. v. Alcoholic Beverage Control Appeals Bd.* (1994) 7 Cal.4th 561, 566, 28 Cal.Rptr.2d 638, 869 P.2d 1163 (*Provigo*).) " 'The administration of the Alcoholic Beverage Control Act, within the scope of the purposes of that act, is initially vested in the department. Its decisions, however, are subject to administrative review by the board and a final order of the board is, in turn, subject to judicial review.' " (*Caressa Camille, Inc. v. Alcoholic Beverage Control Appeals Bd.* (2002) 99 Cal.App.4th 1094, 1099, 121 Cal.Rptr.2d 758, quoting *Walsh v. Kirby* (1974) 13 Cal.3d 95, 102, 118 Cal.Rptr. 1, 529 P.2d 33.)

[3] The scope of review of the Department's decisions is the same in the Appeals Board and this court. (*Department of Alcoholic Beverage Control v. Alcoholic Beverage Control Appeals Bd.* (2002) 100 Cal.App.4th 1066, 1071, 123 Cal.Rptr.2d 278 (*Deleuze*).) Section 23090.2 provides that review "shall not extend further than to determine, based on the whole record of the department as certified by the board, whether: [¶] (a) The department has proceeded without or in excess of its jurisdiction. [¶] (b) The department has proceeded in the manner required by law. [¶] (c) The decision of the department is supported by the findings. [¶] (d) The findings in the department's decision are supported by substantial evidence in the light of the whole record. [¶] (e) There is relevant evidence which, in the exercise of reasonable diligence, could not have been produced or which was improperly excluded at the hearing before the department." Section 23090.2 also excludes the power to make findings of fact from the scope of review. (*Ibid.*)

[4] **[5]** **[6]** In conducting our review, " '[w]e defer to the Department's interpretation of its own rules, since the agency is likely to be intimately familiar with regulations it authored and sensitive to the practical implications of one interpretation over another.' (*Yamaha Corp. of America v. State Bd. of Equalization* (1998) 19 Cal.4th 1, 12 [78 Cal.Rptr.2d 1, 960 P.2d 1031], (*Yamaha Corp.*).) Courts generally will not depart from the Department's contemporaneous construction of a rule enforced by the Department unless such interpretation is clearly erroneous or unauthorized. (*Department of Alcoholic Beverage Control v. Alcoholic Beverage Control Appeals Bd.* (2003) 109 Cal.App.4th 1687, 1696 [1 Cal.Rptr.3d 339] ....)" (*Department of Alcoholic Beverage Control*

v. Alcoholic Beverage Control Appeals Bd. (2005) 128 Cal.App.4th 1195, 1205, 27 Cal.Rptr.3d 766.) In short, the Department's decisions are ****136** "subject to review only for insufficiency of the evidence, excess of jurisdiction, errors of law, or abuse of discretion." (*Deleuze*, at p. 1072, 123 Cal.Rptr.2d 278.)

***635 II**

Rule 141

The Department contends it correctly rejected CVS's reliance on Rule 141 as providing a defense to its sale of alcohol to the underage decoy in this case. We agree.

A.

The Department's Reliance on Minor Decoys

The Department relies on minor decoy operations as an integral part of its enforcement of the constitutional and statutory prohibitions on sales of alcohol to persons under 21 years of age. (Cal. Const., art. XX, § 22; § 25658, subd. (a).) The California Supreme Court has approved of the practice, noting that "[t]he use of underage decoys to enforce laws against unlawful sales to minors clearly *promotes* rather than hinders" the California constitutional and statutory prohibitions on sales of alcoholic beverages to minors. (*Provigo*, *supra*, 7 Cal.4th at p. 567, 28 Cal.Rptr.2d 638, 869 P.2d 1163.)

The Business and Professions Code provides that "[p]ersons under 21 years of age may be used by peace officers in the enforcement of this section to apprehend licensees, or employees or agents of licensees, or other persons who sell or furnish alcoholic beverages to minors." (§ 25658, subd. (f).) In pertinent part, subdivision (f) of section 25658 further provides: "Guidelines with respect to the use of persons under 21 years of age as decoys shall be adopted and published by the department in accordance with the rulemaking portion of the Administrative Procedure Act ...." To comply with subdivision (f) of section 25658, the Department promulgated Rule 141. (*Acapulco Restaurants, Inc. v. Alcoholic Beverage Control Appeals Bd.* (1998) 67 Cal.App.4th 575, 579, 79 Cal.Rptr.2d 126 (*Acapulco Restaurants*).) In its entirety, Rule 141 states:

"(a) A law enforcement agency may only use a person under the age of 21 years to attempt to purchase alcoholic beverages to apprehend licensees, or employees or agents of licensees who sell alcoholic beverages to minors (persons under the age of 21) and to reduce sales of alcoholic beverages to minors in a fashion that promotes fairness.

"(b) The following minimum standards shall apply to actions filed pursuant to Business and Professions Code Section 25658 in which it is alleged that a minor decoy has purchased an alcoholic beverage: [¶] (1) At the time of the operation, the decoy shall be less than 20 years of age; [¶] (2) The decoy ***636** shall display the appearance which could generally be expected of a person under 21 years of age, under the actual circumstances presented to the seller of alcoholic beverages at the time of the alleged offense; [¶] (3) A decoy shall either carry his or her own identification showing the decoy's correct date of birth or shall carry no identification; a decoy who carries identification shall present it upon request to any seller of alcoholic beverages; [¶] (4) *A decoy shall answer truthfully any questions about his or her age*; [¶] (5) Following any completed sale, but not later than the time a citation, if any, is issued, the peace officer directing the decoy shall make a reasonable attempt to enter the licensed premises and have the minor decoy who purchased alcoholic beverages make a face to face identification of the alleged seller of the alcoholic beverages.

****137** "(c) Failure to comply with this rule shall be a defense to any action brought pursuant to Business and Professions Code Section 25658." (Italics added.)

B.

Availability of the Rule 141 Defense

[7] The Appeals Board contends subdivision (b)(4) of Rule 141 required the minor decoy in this case to truthfully respond to the clerk's statement, "I would not have guessed it, you must get asked a lot." Similarly, CVS argues the minor decoy's lack of response violated Rule 141 and provided a defense to the Department's accusation. The Department counters by noting the

administrative law judge made the factual finding that the CVS clerk's words to the minor decoy constituted a statement rather than a question. On this basis, the Department argues the defense supplied by Rule 141 does not apply here. Resolving these contentions requires us to construe the meaning of Rule 141.

As this court has previously explained, "Generally, the same rules governing the construction and interpretation of statutes apply to the construction and interpretation of administrative regulations. (*In re Richards* (1993) 16 Cal.App.4th 93, 97–98, 19 Cal.Rptr.2d 797.) Accordingly, ' "we begin with the fundamental rule that a court should ascertain the intent of the Legislature so as to effectuate the purpose of the law." ' [Citations.] 'An equally basic rule of statutory construction is, however, that courts are bound to give effect to statutes according to the usual, ordinary import of the language employed in framing them.' [Citations.] Although a court may properly rely on extrinsic aids, it should first turn to the words of the statute to determine the intent of the Legislature. [Citations.] 'If the words of the statute are clear, the court should not add to or alter them to accomplish a ***637** purpose that does not appear on the face of the statute or from its legislative history.' (*California Teachers Assn. v. San Diego Community College Dist.* (1981) 28 Cal.3d 692, 698 [170 Cal.Rptr. 817, 621 P.2d 856].)" (*Schmidt v. Foundation Health* (1995) 35 Cal.App.4th 1702, 1710–1711, 42 Cal.Rptr.2d 172.) " 'The construction of an administrative regulation and its application to a given set of facts are matters of law.' " (*Ibid.*, quoting *Auchmoody v. 911 Emergency Services* (1989) 214 Cal.App.3d 1510, 1517, 263 Cal.Rptr. 278.)

In enacting the Alcoholic Beverage Control Act (Act) (§ 23000 et seq.), the Legislature declared the Act "involves in the highest degree the economic, social, and moral well-being and the safety of the State and of all its people." (§ 23001.) The Act establishes the Department "to provide a governmental organization which will ensure a strict, honest, impartial, and uniform administration and enforcement of the liquor laws throughout the State." (§ 23049.) To that end, section 23001 declares that "[a]ll provisions of this division shall be liberally construed for the accomplishment of these purposes."

[8] **[9]** Rule 141(b)(4) provides that "[a] decoy shall answer truthfully any questions about his or her age." The Rule's guidance is clear and unambiguous. Minor decoys do not need to respond to *statements* of any kind nor do they need to respond truthfully to *questions* other than those concerning their ages. Thus, Rule 141 does not require minor decoys to correct mistakes articulated by licensed alcohol sellers. Instead, the minor decoys need to respond truthfully only to questions about their ages. In short, Rule 141 sets forth clear, unambiguous, and fair guidance for minor decoys to follow during the Department's operations. Consequently, the Department properly construed the ****138** plain language of Rule 141 in determining the minor decoy in this case was not required to respond to the clerk's statement that might have related to the decoy's age.

The Appeals Board disagrees with the Department's plain-meaning interpretation of Rule 141, asserting the Rule is ambiguous and unfair. The Appeals Board argues that "the language of Rule 141[(b)(4)] is ambiguous, and decoys lack the expertise to make a fair decision about whether a clerk's words are a 'question' 'about his or her age.' " The Appeals Board bases its argument on the assertion that "[t]he word 'question' is, especially when uttered vocally as opposed to being written, not free from doubt." In support, the Appeals Board argues the ambiguity of the word "question" is demonstrated by the need for an evidentiary hearing to determine the nature of the store clerk's communication to the minor decoy. We reject the argument.

Courts have long resolved factual issues concerning whether a spoken communication constitutes a question that invited an answer. In ***638** *Rhode Island v. Innis* (1980) 446 U.S. 291, 100 S.Ct. 1682, 64 L.Ed.2d 297, the United States Supreme Court articulated a test for determining when *Miranda* advisements must be given to a suspect that "come[s] into play whenever a person in custody is subjected to either express questioning or its functional equivalent." (*Id.* at pp. 300–301, 100 S.Ct. 1682.) The test under *Rhode Island v. Innis* requires that police officers understand not only whether they are engaging in "express questioning," but also when their words or actions "are reasonably likely to elicit an incriminating response from the suspect." (*Id.* at p. 301, 100 S.Ct. 1682.) The United States Supreme Court's decision establishes the unproblematic nature of distinguishing between oral communications constituting questions (and even their functional equivalents) and statements not reasonably likely to elicit an incriminating

answer. Courts even require law enforcement officers to distinguish between suggestive and nonsuggestive questions. (*People v. Saracoglu* (2007) 152 Cal.App.4th 1584, 1590, 62 Cal.Rptr.3d 418.) Here, the determination required of minor decoys is more clear than the *Rhode Island v. Innis* test or the distinction between suggestive and nonsuggestive questions because subdivision (b)(4) of Rule 141 applies *only* to questions relating to age. "Question" is not an ambiguous term and does not lead to confusion in limiting spoken communications to those involving inquiries that contemplate answers.

[10] We also reject the Appeals Board's contention Rule 141 is ambiguous because "no definition is provided as to what 'fairness' means or how it is to be determined." The lack of a definition of fairness, by itself, does not render Rule 141 ambiguous. (Cf. *Nava v. Mercury Cas. Co.* (2004) 118 Cal.App.4th 803, 805, 13 Cal.Rptr.3d 816 [lack of definition does not render a term ambiguous].) Contrary to the Appeals Board's contention, Rule 141 provides specific guidance regarding how to preserve fairness in minor decoy operations. Subdivision (b) of Rule 141 implements the goal of fairness by imposing five specific requirements for every minor decoy operation. Decoys must be under the age of 20; have the appearance of a person under 21; carry their own actual identification and present that identification upon request; truthfully answer any questions about their ages; and make face-to-face identifications of the persons who sold the alcoholic beverages. (Rule 141(b)(1)-(5).) Fairness under Rule 141 is assured by a set of five expressly defined safeguards, all of which must be fulfilled during a minor decoy operation. ****139** (*Acapulco Restaurants, supra,* 67 Cal.App.4th at p. 580, 79 Cal.Rptr.2d 126.) Consequently, Rule 141's use of the word "fairness" does not render the rule ambiguous or confusing.

[11] **[12]** In support of the Appeals Board's argument Rule 141 is ambiguous regarding what constitutes fairness, it points to its earlier decisions in *7–Eleven, Inc./Johal Stores, Inc.* (2014) AB–9403 (*7–Eleven*), *Equilon Enterprises, LLC* (2002) AB–7845 (*Equilon*), *Lucky Stores, Inc.* (1999) AB–7227 (*Lucky*), *Southland Corp./Dandona* (***639** 1999) AB–7099 (*Southland*), and *Thrifty Payless, Inc.* (1998) AB–7050 (*Thrifty*). We may take judicial notice of decisions of the Appeals Board. (*Department of Alcoholic Beverage Control v. Alcoholic Beverage Control Appeals Bd.* (2005) 128 Cal.App.4th 1195, 1208, fn. 5, 27 Cal.Rptr.3d 766; accord *Reimel v. Alcoholic Beverage Control Appeals Bd.* (1967) 254 Cal.App.2d 340, 62 Cal.Rptr. 54.) Thus, although we are not bound by the Appeals Board's decisions, we take judicial notice of the cited decisions and consider their reasoning for persuasive value.

Regarding agency decisions, the California Supreme Court has noted that "[w]here the meaning and legal effect of a statute is the issue, an agency's interpretation is one among several tools available to the court. Depending on the context, it may be helpful, enlightening, even convincing. It may sometimes be of little worth. [Citation.] Considered alone and apart from the context and circumstances that produce them, agency interpretations are not binding or necessarily even authoritative." (*Yamaha Corp. of America v. State Bd. of Equalization* (1998) 19 Cal.4th 1, 7–8, 78 Cal.Rptr.2d 1, 960 P.2d 1031.) Based on our review, we conclude the Appeals Board's cited decisions vary in their persuasiveness and fidelity to Rule 141.

In *7–Eleven*, *supra,* AB–9403, the Appeals Board affirmed the suspension of an off-sale license based on sale to a minor decoy after the store clerk looked at the minor decoy's identification and stated, "oh, you are so young." (*7–Eleven*, at pp. 2, 14.) In affirming the suspension, the Appeals Board concluded the minor decoy was not required to respond because the store clerk did not ask a question or indicate a mistake as to the minor decoy's age. The Appeals Board reasoned that "[t]he wor[d] 'young' is a subjective term, and gives no indication that the clerk has made a miscalculation and as a result believes the decoy to be over 21" years of age. (*Id.* at p. 12.) Under the reasoning of *7–Eleven*, the Appeals Board should have affirmed the license suspension in this case as well. Here, the administrative law judge found the store clerk did not ask a question of the minor decoy. And the store clerk did not clearly demonstrate confusion as to the minor's age in the statement, "I would never have guessed it, you must get asked a lot." The minor decoy testified he thought the statement might mean either that "she thought I was older *or thought that I do it a lot* ...." Because the store clerk in this case made a statement akin to that in *7–Eleven*, the reasoning employed in *7–Eleven* should have led the Appeals Board to affirm the Department's decision.

We reject the reasoning contained in the remainder of the Appeals Board's earlier decisions because the reasoning in

each would require minor decoys to speak up to clarify any mistake about their ages even in the absence of a question. (*Equilon,* at p. 2 [concluding Rule 141 "was ***640** violated when the decoy failed to respond to a statement by the clerk which implied that she was 21 years of age or older"], *Lucky*, at p. 4 [same where minor decoy did not respond to mistaken statement, "1978. You are 21"], and *Southland*, at pp. 6, 7 [same where decoy did not respond to statement, "You are 21"]. In each of these decisions, ****140** the Appeals Board relied on the notion of fairness to craft a new requirement for Rule 141, namely the obligation of a minor decoy to respond to any indication of mistake regarding age even in the absence of a question. Rule 141, however, expressly requires minor decoys only to answer questions relating to their ages. (Rule 141(b)(4).) The Appeals Board lacks the power to add a new defense to Rule 141.

The Appeals Board's decision in *Thrifty, supra,* AB–7050 involved a reversal of the Board's decision based on the minor decoy's silent tendering of a driver license rather than answering the clerk's question about her age. (See *Thrifty*, at p. 6 [speculating about the minor decoy's motivation in offering her identification rather than answering about her age].) Unlike this case, *Thrifty* involved an actual question by the clerk about the minor decoy's age and is therefore inapposite in this case where the administrative law judge determined the clerk did not ask any questions. (*Id.* at pp. 5–6.) Consequently, we need not consider whether *Thrifty* was correctly decided in harmony with Rule 141.

Ultimately, we are not persuaded by the Appeals Board's prior decisions that Rule 141 is ambiguous in requiring decoys to answer truthfully only questions relating to their ages.

Next, the Appeals Board argues the principle of fairness upon which Rule 141 is founded imposes an affirmative duty on minor decoys to speak up in order to clarify any mistake regarding age articulated by the vendor. If the Department had wanted to provide license holders with a defense for mistakes about a minor decoy's age or based on a minor decoy's failure to respond to a statement by the clerk, the Department could have done so by including express language to that effect in Rule 141. However, as we explained above, the language of Rule 141 requires minor decoys to respond only to questions about their ages. We reject the Appeals Board's attempt to add a new defense to Rule 141 that is not expressed in the rule. (*Acapulco Restaurants*, *supra*, 67 Cal.App.4th at p. 580, 79 Cal.Rptr.2d 126.)

Acapulco Restaurants involved a minor decoy operation in which the Department did not comply with Rule 141's requirement the minor decoy make a face-to-face identification of the clerk who sold the alcoholic beverage. (67 Cal.App.4th at p. 577, 79 Cal.Rptr.2d 126; see also Rule 141(b)(5).) Despite the failure to follow this express requirement ***641** of Rule 141, the Department imposed and the Appeals Board affirmed a 15–day license suspension on grounds a law enforcement officer witnessed the entire transaction. (*Acapulco Restaurants,* at p. 577, 79 Cal.Rptr.2d 126.) However, the *Acapulco Restaurants* court reversed, explaining, "[t]o ignore a rule and the defense that arises from law enforcement's failure to comply with that rule is not a matter of 'interpretation.' What the Department has done is to unilaterally decide that rule 141[ ](b)(5) applies in some situations but not others, a decision that exceeds the Department's power. By its refusal to apply rule 141[ ](b)(5) when a police officer is present at the time of the sale, the Department has crossed the line separating the interpretation of a word or phrase on one side to the legislation of a different rule on the other, thereby substituting its judgment for that of the rulemaking authority. It might as well have said that rule 141[ ](b)(5) applies on Mondays but not Thursdays." (*Acapulco Restaurants*, *supra*, 67 Cal.App.4th at p. 580, 79 Cal.Rptr.2d 126.)

[13] **[14]** The result in *Acapulco Restaurants* followed the well-established rule that " '[a]n exception to a statute is to be narrowly construed. (Citation.) When a statute specifies an exception, no others ****141** may be added under the guise of judicial construction. (Citations.)' " (*Kirby v. Alcoholic Beverage Control Appeals Bd.* (1968) 267 Cal.App.2d 895, 898, 73 Cal.Rptr. 352, quoting *Lacabanne Properties, Inc. v. Department of Alcoholic Beverage Control* (1968) 261 Cal.App.2d 181, 189, 67 Cal.Rptr. 734.) Fairness does not require the new exception to be judicially grafted into Rule 141 to provide additional defenses that require a minor decoy to speak up in the absence of a question by the store clerk. As the California Supreme Court has noted, "licensees have a ready means of protecting themselves from liability by simply asking any purchasers who could possibly be minors to produce bona fide evidence of their age

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and identity." (*Provigo*, *supra*, 7 Cal.4th at p. 570, 28 Cal.Rptr.2d 638, 869 P.2d 1163.)

Likewise, we reject the argument made by CVS that the minor decoy's silence in response the clerk's statement about his youthful appearance was "deceptive and misleading." As this court has previously noted in a case involving a claim a governmental agency engaged in fraudulent concealment, "Courts uniformly distinguish between the misleading half-truth, or partial disclosure, and the case in which defendant says nothing at all. The general rule is that silence alone is not actionable." (*Wiechmann Engineers v. State of California ex rel. Dept. Pub. Wks.* (1973) 31 Cal.App.3d 741, 751, 107 Cal.Rptr. 529.)

Here, the minor decoy did not say anything untrue. To the contrary, the minor decoy presented accurate information in the form of his driver license. Thus, the minor decoy did not engage in deceptive and misleading communication with the clerk. Notably, the California Supreme Court has rejected a claim the use of a "mature-looking" decoy constitutes an unfair practice by ***642** the Department in a case in which a minor decoy "simply bought beer and wine, *without attempting to pressure or encourage the sales in any way*." (*Provigo*, *supra*, 7 Cal.4th at p. 569, 28 Cal.Rptr.2d 638, 869 P.2d 1163, italics added.) The same reason applies here. The minor decoy's silence in this case did not involve any attempt to pressure or encourage the sale of an alcoholic beverage to him. The minor decoy's silence did not render the Department's operation unfair.

CVS's argument its clerk was deceived and misled by the minor decoy in this case is based on the same premise as that advanced by the Appeals Board, namely a minor decoy has a duty to speak up in response to a statement indicating a mistaken calculation of age. However, as we have explained, Rule 141 does not supply a defense based on a minor decoy's failure to respond to statements made by the clerk. Consequently, we conclude the Department properly rejected CVS's argument the minor decoy's silence rendered the operation unfair under Rule 141.

C.

Substantial Evidence Supports the Department's Decision

[15] As part of its argument Rule 141 is ambiguous, the Appeals Board asserts the minor decoy's testimony during the hearing was equally uncertain. Specifically, the Appeals Board asserts that "[t]he decoy's testimony is as ambiguous as [Rule 141], and certainly does not support the conclusion, reached by the Department, that the clerk's words were '[i]ndisputably a statement' falling outside the Rule." In light of the administrative law judge's factual finding, we disagree.

Viewed in the light most favorable to the Department's decision, we conclude substantial evidence supports the administrative law judge's decision. As the administrative law judge found, the minor decoy's ****142** testimony was clear and credible. The administrative law judge also expressly found the testimony established the store clerk's communication to the minor decoy was a statement and not a question. Under section 23090.2, the Appeals Board lacks power to disregard the Department's factual findings, which includes findings made by the administrative law judge. (*Hasselbach v. Department of Alcoholic Beverage Control* (1959) 167 Cal.App.2d 662, 667, 334 P.2d 1058 ["The statement made in the opinion of the appeals board was not a finding of fact for that board is without power to make findings of fact"].) Accordingly, we reject the Appeals Board's argument the store clerk's statement might have been a question instead of a statement.

***643** DISPOSITION

The decision of the Alcohol Beverage Control Appeals Board is annulled. The decision of the Department of Alcoholic Beverage Control is reinstated and the case is remanded to the Alcohol Beverage Control Appeals Board for further proceedings consistent with this opinion.

We concur:

BLEASE, Acting P.J.

RENNER, J.

All Citations

7 Cal.App.5th 628, 213 Cal.Rptr.3d 130, 17 Cal. Daily Op. Serv. 384, 2017 Daily Journal D.A.R. 402

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Footnotes

1 Undesignated statutory references are to the Business and Professions Code.

2 The license is held by Garfield Beach CVS LLC Longs Drug Stores California LLC, doing business as CVS Pharmacy Store 9174.

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KeyCite Yellow Flag - Negative Treatment
Distinguished by CSAC Excess Ins. Authority v. Commission on State Mandates, Cal.App. 2 Dist., December 20, 2006

54 Cal.3d 326, 814 P.2d 1308, 285 Cal.Rptr. 66

FRANCES KINLAW et al., Plaintiffs and Appellants,
v.
THE STATE OF CALIFORNIA et al., Defendants and Respondents.

No. S014349.
Supreme Court of California
Aug 30, 1991.

SUMMARY

Medically indigent adults and taxpayers brought an action pursuant to Code Civ. Proc., § 526a, against the state, alleging that it had violated Cal. Const., art. XIII B, § 6 (reimbursement of local governments for state-mandated new programs), by shifting its financial responsibility for the funding of health care for the poor onto the county without providing the necessary funding, and that as a result the state had evaded its constitutionally mandated spending limits. The trial court granted summary judgment for the State after concluding plaintiffs lacked standing to prosecute the action. (Superior Court of Alameda County, No. 632120-4, Henry Ramsey, Jr., and Demetrios P. Agretelis, Judges.) The Court of Appeal, First Dist., Div. Two, Nos. A041426 and A043500, reversed.

The Supreme Court reversed the judgment of the Court of Appeal, holding the administrative procedures established by the Legislature (Gov. Code, § 17500 et seq.), which are available only to local agencies and school districts directly affected by a state mandate, were the exclusive means by which the state's obligations under Cal. Const., art. XIII B, § 6, were to be determined and enforced. Accordingly, the court held plaintiffs lacked standing to prosecute the action. (Opinion by Baxter, J., with Lucas, C. J., Panelli, Kennard, and Arabian, JJ., concurring. Separate dissenting opinion by Broussard, J., with Mosk, J., concurring.)

HEADNOTES

Classified to California Digest of Official Reports

(1)
State of California § 7--Actions--State-mandated Costs--Reimbursement-- Exclusive Statutory Remedy.
Gov. Code, § 17500 et seq., creates an administrative forum for resolution of state mandate claims arising under Cal. Const., art. XIII B, § 6, and establishes procedures which exist for the express purpose of avoiding multiple proceedings, judicial and administrative, addressing the same claim that a reimbursable state mandate has been created. The statutory scheme also designates the Sacramento County Superior Court as the venue for judicial actions to declare unfunded mandates invalid. It also designates the Sacramento County Superior Court as the venue for judicial actions to declare unfunded mandates invalid (Gov. Code, § 17612). In view of the comprehensive nature of the legislative scheme, and from the expressed intent, the Legislature has created what is clearly intended to be a comprehensive and exclusive procedure by which to implement and enforce Cal. Const., art. XIII B, § 6.

(2)
State of California § 7--Actions--State-mandated Costs--Reimbursement-- Private Action to Enforce--Standing.
In an action by medically indigent adults and taxpayers seeking to enforce Cal. Const., art. XIII B, § 6, for declaratory and injunctive relief requiring the state to reimburse the county for the cost of providing health care services to medically indigent adults who, prior to 1983, had been included in the state Medi-Cal program, the Court of Appeal erred in holding that the existence of an administrative remedy (Gov. Code, § 17500 et seq.) by which affected local agencies could enforce their constitutional right under art. XIII B, § 6 to reimbursement for the cost of state mandates di not bar the action. Because the right involved was given by the Constitution to local agencies and school districts, not individuals either as taxpayers or recipients of government benefits and services, the administrative remedy was adequate fully to implement the constitutional provision. The Legislature has the authority to establish procedures for the implementation of local agency rights under art. XIII B, § 6; unless the exercise of a constitutional right is unduly restricted, a court must limit enforcement to the procedures established by the Legislature. Plaintiffs' interest, although pressing, was indirect and did not differ

from the interest of the public at large in the financial plight of local government. Relief by way of reinstatement to Medi-Cal pending further action by the state was not a remedy available under the statute, and thus was not one which a court may award.

[See **Cal.Jur.3d,** State of California, § 78; 7 **Witkin,** Summary of Cal. Law (9th ed. 1988) Constitutional Law, § 112.]

COUNSEL

Stephen D. Schear, Stephen E. Ronfeldt, Armando M. Menocal III, Lois Salisbury, Laura Schulkind and Kirk McInnis for Plaintiffs and Appellants. ***328**

Catherine I. Hanson, Astrid G. Meghrigian, Alice P. Mead, Alan K. Marks, County Counsel (San Bernardino), Paul F. Mordy, Deputy County Counsel, De Witt W. Clinton, County Counsel (Los Angeles), Robert M. Fesler, Assistant County Counsel, Frank J. DaVanzo, Deputy County Counsel, Weissburg & Aronson, Mark S. Windisch, Carl Weissburg and Howard W. Cohen as Amici Curiae on behalf of Plaintiffs and Appellants.

John K. Van de Kamp and Daniel E. Lungren, Attorneys General, N. Eugene Hill, Assistant Attorney General, Richard M. Frank, Asher Rubin and Carol Hunter, Deputy Attorneys General, for Defendants and Respondents.

BAXTER, J.

Plaintiffs, medically indigent adults and taxpayers, seek to enforce section 6 of article XIII B (hereafter, section 6) of the California Constitution through an action for declaratory and injunctive relief. They invoked the jurisdiction of the superior court as taxpayers pursuant to Code of Civil Procedure section 526a and as persons affected by the alleged failure of the state to comply with section 6. The superior court granted summary judgment for defendants State of California and Director of the Department of Health Services, after concluding that plaintiffs lacked standing to prosecute the action. On appeal, the Court of Appeal held that plaintiffs have standing and that the action is not barred by the availability of administrative remedies.

We reverse. The administrative procedures established by the Legislature, which are available only to local agencies and school districts directly affected by a state mandate, are the exclusive means by which the state's obligations under section 6 are to be determined and enforced. Plaintiffs therefore lack standing.

I State Mandates

Section 6, adopted on November 6, 1979, as part of an initiative measure imposing spending limits on state and local government, also imposes on the state an obligation to reimburse local agencies for the cost of most programs and services which they must provide pursuant to a state mandate if the local agencies were not under a preexisting duty to fund the activity. It provides: ***329**

"Whenever the Legislature or any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse such local government for the costs of such program or increased level of service, except that the Legislature may, but need not, provide such subvention of funds for the following mandates:

"(a) Legislative mandates requested by the local agency affected;

"(b) Legislation defining a new crime or changing an existing definition of a crime; or

"(c) Legislative mandates enacted prior to January 1, 1975, or executive orders or regulations initially implementing legislation enacted prior to January 1, 1975."

A complementary provision, section 3 of article XIII B, provides for a shift from the state to the local agency of a portion of the spending or "appropriation" limit of the state when responsibility for funding an activity is shifted to a local agency:

"The appropriations limit for any fiscal year ... shall be adjusted as follows: [¶] (a) In the event that the financial responsibility of providing services is transferred, in whole or in part, ... from one entity of government to another, then for the year in which such transfer becomes effective the appropriations limit of the transferee entity shall be increased by such reasonable amount as the said entities shall mutually agree and the appropriations limit of the transferor entity shall be decreased by the same amount."

II Plaintiffs' Action

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The underlying issue in this action is whether the state is obligated to reimburse the County of Alameda, and shift to Alameda County a concomitant portion of the state's spending limit, for the cost of providing health care services to medically indigent adults who prior to 1983 had been included in the state Medi-Cal program. Assembly Bill No. 799 (1981-1982 Reg. Sess.) (AB 799) (Stats. 1982, ch. 328, p. 1568) removed medically indigent adults from Medi-Cal effective January 1, 1983. At the time section 6 was adopted, the state was funding Medi-Cal coverage for these persons without requiring any county financial contribution.

Plaintiffs initiated this action in the Alameda County Superior Court. They sought relief on their own behalf and on behalf of a class of similarly ***330** situated medically indigent adult residents of Alameda County. The only named defendants were the State of California, the Director of the Department of Health Services, and the County of Alameda.

In the complaint for declaratory and injunctive relief, plaintiffs sought an injunction compelling the state to restore Medi-Cal eligibility to medically indigent adults or to reimburse the County of Alameda for the cost of providing health care to those persons. They also prayed for a declaration that the transfer of responsibility from the state-financed Medi- Cal program to the counties without adequate reimbursement violated the California Constitution. [1]

At the time plaintiffs initiated their action neither Alameda County, nor any other county or local agency, had filed a reimbursement claim with the Commission on State Mandates (Commission). [2]

Whether viewed as an action seeking restoration of Medi-Cal benefits, one to compel state reimbursement of county costs, or one for declaratory relief, therefore, the action required a determination that the enactment of AB 799 created a state mandate within the contemplation of section 6. Only upon resolution of that issue favorably to plaintiffs would the state have an obligation to reimburse the county for its increased expense and shift a portion of its appropriation limit, or to reinstate Medi-Cal benefits for plaintiffs and the class they seek to represent.

The gravamen of the action is, therefore, enforcement of section 6. [3] ***331**

III Enforcement of Article XIII B, Section 6

In 1984, almost five years after the adoption of article XIII B, the Legislature enacted comprehensive administrative procedures for resolution of claims arising out of section 6. (§ 17500.) The Legislature did so because the absence of a uniform procedure had resulted in inconsistent rulings on the existence of state mandates, unnecessary litigation, reimbursement delays, and, apparently, resultant uncertainties in accommodating reimbursement requirements in the budgetary process. The necessity for the legislation was explained in section 17500:

"The Legislature finds and declares that the existing system for reimbursing local agencies and school districts for the costs of state- mandated local programs has not provided for the effective determination of the state's responsibilities under Section 6 of Article XIII B of the California Constitution. The Legislature finds and declares that the failure of the existing process to adequately and consistently resolve the complex legal questions involved in the determination of state-mandated costs has led to an increasing reliance by local agencies and school districts on the judiciary and, therefore, in order to relieve unnecessary congestion of the judicial system, *it is necessary to create a mechanism which is capable of rendering sound quasi-judicial decisions and providing an effective means of resolving disputes over the existence of state-mandated local programs.*" (Italics added.)

In part 7 of division 4 of title 2 of the Government Code, "State-Mandated Costs," which commences with section 17500, the Legislature created the Commission (§ 17525), to adjudicate disputes over the existence of a state-mandated program (§§ 17551, 17557) and to adopt procedures for submission and adjudication of reimbursement claims (§ 17553). The five-member Commission includes the Controller, the Treasurer, the Director of Finance, the Director of the Office of Planning and Research, and a public member experienced in public finance. (§ 17525.)

The legislation establishes a test-claim procedure to expeditiously resolve disputes affecting multiple agencies (§ 17554), [4] establishes the method of ***332** payment of

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claims (§§ 17558, 17561), and creates reporting procedures which enable the Legislature to budget adequate funds to meet the expense of state mandates (§§ 17562, 17600, 17612, subd. (a).)

Pursuant to procedures which the Commission was authorized to establish (§ 17553), local agencies[5] and school districts[6] are to file claims for reimbursement of state-mandated costs with the Commission (§§ 17551, 17560), and reimbursement is to be provided only through this statutory procedure. (§§ 17550, 17552.)

The first reimbursement claim filed which alleges that a state mandate has been created under a statute or executive order is treated as a "test claim." (§ 17521.) A public hearing must be held promptly on any test claim. At the hearing on a test claim or on any other reimbursement claim, evidence may be presented not only by the claimant, but also by the Department of Finance and any other department or agency potentially affected by the claim. (§ 17553.) Any interested organization or individual may participate in the hearing. (§ 17555.)

A local agency filing a test claim need not first expend sums to comply with the alleged state mandate, but may base its claim on estimated costs. (§ 17555.) The Commission must determine both whether a state mandate exists and, if so, the amount to be reimbursed to local agencies and school districts, adopting "parameters and guidelines" for reimbursement of any claims relating to that statute or executive order. (§ 17557.) Procedures for determining whether local agencies have achieved statutorily authorized cost savings and for offsetting these savings against reimbursements are also provided. (§ 17620 et seq.) Finally, judicial review of the Commission decision is available through petition for writ of mandate filed pursuant to Code of Civil Procedure section 1094.5. (§ 17559.)

The legislative scheme is not limited to establishing the claims procedure, however. It also contemplates reporting to the Legislature and to departments and agencies of the state which have responsibilities related to funding state mandates, budget planning, and payment. The parameters and guidelines adopted by the Commission must be submitted to the Controller, who is to pay subsequent claims arising out of the mandate. (§ 17558.) Executive orders mandating costs are to be accompanied by an appropriations ***333** bill to cover the costs if the costs are not included in the budget bill, and in subsequent years the costs must be included in the budget bill. (§ 17561, subds. (a) & (b).) Regular review of the costs is to be made by the Legislative Analyst, who must report to the Legislature and recommend whether the mandate should be continued. (§ 17562.) The Commission is also required to make semiannual reports to the Legislature of the number of mandates found and the estimated reimbursement cost to the state. (§ 17600.) The Legislature must then adopt a "local government claims bill." If that bill does not include funding for a state mandate, an affected local agency or school district may seek a declaration from the superior court for the County of Sacramento that the mandate is unenforceable, and an injunction against enforcement. (§ 17612.)

Additional procedures, enacted in 1985, create a system of state-mandate apportionments to fund reimbursement. (§ 17615 et seq.)

([1]) It is apparent from the comprehensive nature of this legislative scheme, and from the Legislature's expressed intent, that the exclusive remedy for a claimed violation of section 6 lies in these procedures. The statutes create an administrative forum for resolution of state mandate claims, and establishes procedures which exist for the express purpose of avoiding multiple proceedings, judicial and administrative, addressing the same claim that a reimbursable state mandate has been created. The statutory scheme also designates the Sacramento County Superior Court as the venue for judicial actions to declare unfunded mandates invalid (§ 17612).

The legislative intent is clearly stated in section 17500: "It is the intent of the Legislature in enacting this part to provide for the implementation of Section 6 of Article XIII B of the California Constitution and to consolidate the procedures for reimbursement of statutes specified in the Revenue and Taxation Code with those identified in the Constitution. ..." And section 17550 states: "Reimbursement of local agencies and school districts for costs mandated by the state shall be provided pursuant to this chapter."

Finally, section 17552 provides: "This chapter shall provide *the sole and exclusive procedure* by which a local agency or school district may claim reimbursement for costs mandated by the state as required by Section 6 of

Article XIII B of the California Constitution." (Italics added.)

In short, the Legislature has created what is clearly intended to be a comprehensive and exclusive procedure by which to implement and enforce section 6. ***334**

IV Exclusivity

([2]) Plaintiffs argued, and the Court of Appeal agreed, that the existence of an administrative remedy by which affected local agencies could enforce their right under section 6 to reimbursement for the cost of state mandates did not bar this action because the administrative remedy is available only to local agencies and school districts.

The Court of Appeal recognized that the decision of the County of Alameda, which had not filed a claim for reimbursement at the time the complaint was filed, was a discretionary decision which plaintiffs could not challenge. (*Dunn v. Long Beach L. & W. Co.* (1896) 114 Cal. 605, 609, 610-611 [46 P. 607]; *Silver v. Watson* (1972) 26 Cal.App.3d 905, 909 [103 Cal.Rptr. 576]; *Whitson v. City of Long Beach* (1962) 200 Cal.App.2d 486, 506 [19 Cal.Rptr. 668]; *Elliott v. Superior Court* (1960) 180 Cal.App.2d 894, 897 [5 Cal.Rptr. 116].) The court concluded, however, that public policy and practical necessity required that plaintiffs have a remedy for enforcement of section 6 independent of the statutory procedure.

The right involved, however, is a right given by the Constitution to local agencies, not individuals either as taxpayers or recipients of government benefits and services. Section 6 provides that the "state shall provide a subvention of funds *to reimburse ... local governments* ...." (Italics added.) The administrative remedy created by the Legislature is adequate to fully implement section 6. That Alameda County did not file a reimbursement claim does not establish that the enforcement remedy is inadequate. Any of the 58 counties was free to file a claim, and other counties did so. The test claim is now before the Court of Appeal. The administrative procedure has operated as intended.

The Legislature has the authority to establish procedures for the implementation of local agency rights under section 6. Unless the exercise of a constitutional right is unduly restricted, the court must limit enforcement to the procedures established by the Legislature. (*People v. Western Air Lines, Inc.* (1954) 42 Cal.2d 621, 637 [268 P.2d 723]; *Chesney v. Byram* (1940) 15 Cal.2d 460, 463 [101 P.2d 1106]; *County of Contra Costa v. State of California* (1986) 177 Cal.App.3d 62, 75 [222 Cal.Rptr. 750].)

Plaintiffs' argument that they must be permitted to enforce section 6 as individuals because their right to adequate health care services has been compromised by the failure of the state to reimburse the county for the cost ***335** of services to medically indigent adults is unpersuasive. Plaintiffs' interest, although pressing, is indirect and does not differ from the interest of the public at large in the financial plight of local government. Although the basis for the claim that the state must reimburse the county for its costs of providing the care that was formerly available to plaintiffs under Medi-Cal is that AB 799 created a state mandate, plaintiffs have no right to have any reimbursement expended for health care services of any kind. Nothing in article XIII B or other provision of law controls the county's expenditure of the funds plaintiffs claim must be paid to the county. To the contrary, section 17563 gives the local agency complete discretion in the expenditure of funds received pursuant to section 6, providing: "Any funds received by a local agency or school district pursuant to the provisions of this chapter may be used for any public purpose."

The relief plaintiffs seek in their prayer for state reimbursement of county expenses is, in the end, a reallocation of general revenues between the state and the county. Neither public policy nor practical necessity compels creation of a judicial remedy by which individuals may enforce the right of the county to such revenues. The Legislature has established a procedure by which the county may claim any revenues to which it believes it is entitled under section 6. That test-claim statute expressly provides that not only the claimant, but also "any other interested organization or individual may participate" in the hearing before the Commission (§ 17555) at which the right to reimbursement of the costs of such mandate is to be determined. Procedures for receiving any claims must "provide for presentation of evidence by the claimant, the Department of Finance and any other affected department or agency, *and any other interested person.*" (§ 17553. Italics added.) Neither the county nor an interested individual is without an opportunity to be heard on these questions. These procedures are both adequate and exclusive. [7]

The alternative relief plaintiffs seek-reinstatement to Medi-Cal pending further action by the state-is not a remedy available under the statute, and thus is not one which this court may award. The remedy for the failure to fund a program is a declaration that the mandate is unenforceable. That relief is available only after the Commission has determined that a mandate exists ***336** and the Legislature has failed to include the cost in a local government claims bill, and only on petition by the county. (§ 17612.) [8]

Moreover, the judicial remedy approved by the Court of Appeal permits resolution of the issues raised in a state mandate claim without the participation of those officers and individuals the Legislature deems necessary to a full and fair exposition and resolution of the issues. Neither the Controller nor the Director of Finance was named a defendant in this action. The Treasurer and the Director of the Office of Planning and Research did not participate. All of these officers would have been involved in determining the question as members of the Commission, as would the public member of the Commission. The judicial procedures were not equivalent to the public hearing required on test claims before the Commission by section 17555. Therefore, other affected departments, organizations, and individuals had no opportunity to be heard. [9]

Finally, since a determination that a state mandate has been created in a judicial proceeding rather than one before the Commission does not trigger the procedures for creating parameters and guidelines for payment of claims, or for inclusion of estimated costs in the state budget, there is no source of funds available for compliance with the judicial decision other than the appropriations for the Department of Health Services. Payment from those funds can only be at the expense of another program which the department is obligated to fund. No public policy supports, let alone requires, this result.

The superior court acted properly in dismissing this action.

The judgment of the Court of Appeal is reversed.

Lucas, C. J., Panelli, J., Kennard, J., and Arabian, J., concurred.

BROUSSARD, J.

I dissent. For nine years the Legislature has defied the mandate of article XIII B of the California Constitution (hereafter article XIII B). Having transferred responsibility for the care of medically indigent adults (MIA's) to county governments, the Legislature has failed to provide the counties with sufficient money to meet this responsibility, yet the ***337** Legislature computes its own appropriations limit as if it fully funded the program. The majority, however, declines to remedy this violation because, it says, the persons most directly harmed by the violation-the medically indigent who are denied adequate health care-have no standing to raise the matter. I disagree, and will demonstrate that (1) plaintiffs have standing as citizens to seek a declaratory judgment to determine whether the state is complying with its constitutional duty under article XIII B; (2) the creation of an administrative remedy whereby counties and local districts can enforce article XIII B does not deprive the citizenry of its own independent right to enforce that provision; and (3) even if plaintiffs lacked standing, our recent decision in *Dix v. Superior Court* (1991) 53 Cal.3d 442 [279 Cal.Rptr. 834, 807 P.2d 1063] permits us to reach and resolve any significant issue decided by the Court of Appeal and fully briefed and argued here. I conclude that we should reach the merits of the appeal.

On the merits, I conclude that the state has not complied with its constitutional obligation under article XIII B. To prevent the state from avoiding the spending limits imposed by article XIII B, section 6 of that article prohibits the state from transferring previously state-financed programs to local governments without providing sufficient funds to meet those burdens. In 1982, however, the state excluded the medically indigent from its Medi-Cal program, thus shifting the responsibility for such care to the counties. Subvention funds provided by the state were inadequate to reimburse the counties for this responsibility, and became less adequate every year. At the same time, the state continued to compute its spending limit as if it fully financed the entire program. The result is exactly what article XIII B was intended to prevent: the state enjoys a falsely inflated spending limit; the county is compelled to assume a burden it cannot afford; and the medically indigent receive inadequate health care.

I. Facts and Procedural History

Plaintiffs-citizens, taxpayers, and persons in need of medical care-allege that the state has shifted its financial responsibility for the funding of health care for MIA's to the counties without providing the necessary funding and without any agreement transferring appropriation limits, and that as a result the state is violating article XIII B. Plaintiffs further allege they and the class they claim to represent cannot, consequently, obtain adequate health care from the County of Alameda, which lacks the state funding to provide it. The county, although nominally a defendant, aligned ***338** itself with plaintiffs. It admits the inadequacy of its program to provide medical care for MIA's but blames the absence of state subvention funds. [1]

At hearings below, plaintiffs presented uncontradicted evidence regarding the enormous impact of these statutory changes upon the finances and population of Alameda County. That county now spends about $40 million annually on health care for MIA's, of which the state reimburses about half. Thus, since article XIII B became effective, Alameda County's obligation for the health care of MIA's has risen from zero to more than $20 million per year. The county has inadequate funds to discharge its new obligation for the health care of MIA's; as a result, according to the Court of Appeal, uncontested evidence from medical experts presented below shows that, "The delivery of health care to the indigent in Alameda County is in a state of shambles; the crisis cannot be overstated ...." "Because of inadequate state funding, some Alameda County residents are dying, and many others are suffering serious diseases and disabilities, because they cannot obtain adequate access to the medical care they need ...." "The system is clogged to the breaking point. ... All community clinics ... are turning away patients." "The funding received by the county from the state for MIAs does not approach the actual cost of providing health care to the MIAs. As a consequence, inadequate resources available to county health services jeopardize the lives and health of thousands of people ...."

The trial court acknowledged that plaintiffs had shown irreparable injury, but denied their request for a preliminary injunction on the ground that they could not prevail in the action. It then granted the state's motion for summary judgment. Plaintiffs appealed from both decisions of the trial court.

The Court of Appeal consolidated the two appeals and reversed the rulings below. It concluded that plaintiffs had standing to bring this action to enforce the constitutional spending limit of article XIII B, and that the action is not barred by the existence of administrative remedies available to counties. It then held that the shift of a portion of the cost of medical indigent care by the state to Alameda County constituted a state-mandated new program under the provisions of article XIII B, which triggered that article's provisions requiring a subvention of funds by the state to reimburse Alameda ***339** County for the costs of such program it was required to assume. The judgments denying a preliminary injunction and granting summary judgment for defendants were reversed. We granted review.

II. Standing

A. *Plaintiffs have standing to bring an action for declaratory relief to determine whether the state is complying with article XIII B.*

Plaintiffs first claim standing as taxpayers under Code of Civil Procedure section 526a, which provides that: "An action to obtain a judgment, restraining and preventing any illegal expenditure of, waste of, or injury to, the estate, funds, or other property of a county ..., may be maintained against any officer thereof, or any agent, or other person, acting in its behalf, either by a citizen resident therein, or by a corporation, who is assessed for and is liable to pay, or, within one year before the commencement of the action, has paid, a tax therein. ..." As in *Common Cause v. Board of Supervisors* (1989) 49 Cal.3d 432, 439 [261 Cal.Rptr. 574, 777 P.2d 610], however, it is "unnecessary to reach the question whether plaintiffs have standing to seek an injunction under Code of Civil Procedure section 526a, because there is an independent basis for permitting them to proceed." Plaintiffs here seek a declaratory judgment that the transfer of responsibility for MIA's from the state to the counties without adequate reimbursement violates article XIII B. A declaratory judgment that the state has breached its duty is essentially equivalent to an action in mandate to compel the state to perform its duty. (See *California Assn. of Psychology Providers v. Rank* (1990) 51 Cal.3d 1, 9 [270 Cal.Rptr. 796, 793 P.2d 2], which said that a declaratory judgment establishing that the state has a duty to act provides relief equivalent to mandamus, and makes issuance of the writ unnecessary.) Plaintiffs further seek a mandatory injunction requiring that the state pay the health costs of MIA's under the Medi-Cal program until the state

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meets its obligations under article XIII B. The majority similarly characterize plaintiffs' action as one comparable to mandamus brought to enforce section 6 of article XIII B.

We should therefore look for guidance to cases that discuss the standing of a party seeking a writ of mandate to compel a public official to perform his or her duty. [2] Such an action may be brought by any person "beneficially interested" in the issuance of the writ. (Code Civ. Proc., § 1086.) In *Carsten* ***340** *v. Psychology Examining Com.* (1980) 27 Cal.3d 793, 796 [166 Cal.Rptr. 844, 614 P.2d 276], we explained that the "requirement that a petitioner be 'beneficially interested' has been generally interpreted to mean that one may obtain the writ only if the person has some special interest to be served or some particular right to be preserved or protected over and above the interest held in common with the public at large." We quoted from Professor Davis, who said, "One who is in fact adversely affected by governmental action should have standing to challenge that action if it is judicially reviewable." (Pp. 796-797, quoting 3 Davis, Administrative Law Treatise (1958) p. 291.) Cases applying this standard include *Stocks v. City of Irvine* (1981) 114 Cal.App.3d 520 [170 Cal.Rptr. 724], which held that low- income residents of Los Angeles had standing to challenge exclusionary zoning laws of suburban communities which prevented the plaintiffs from moving there; *Taschner v. City Council, supra,* 31 Cal.App.3d 48, which held that a property owner has standing to challenge an ordinance which may limit development of the owner's property; and *Felt v. Waughop* (1924) 193 Cal. 498 [225 P. 862], which held that a city voter has standing to compel the city clerk to certify a correct list of candidates for municipal office. Other cases illustrate the limitation on standing: *Carsten v. Psychology Examining Com., supra,* 27 Cal.3d 793, held that a member of the committee who was neither seeking a license nor in danger of losing one had no standing to challenge a change in the method of computing the passing score on the licensing examination; *Parker v. Bowron* (1953) 40 Cal.2d 344 [254 P.2d 6] held that a union official who was neither a city employee nor a city resident had no standing to compel a city to follow a prevailing wage ordinance; and *Dunbar v. Governing Board* (1969) 275 Cal.App.2d 14 [79 Cal.Rptr. 662] held that a member of a student organization had standing to challenge a college district's rule barring a speaker from campus, but persons who merely planned to hear him speak did not.

No one questions that plaintiffs are affected by the lack of funds to provide care for MIA's. Plaintiffs, except for plaintiff Rabinowitz, are not merely citizens and taxpayers; they are medically indigent persons living in Alameda County who have been and will be deprived of proper medical care if funding of MIA programs is inadequate. Like the other plaintiffs here, ***341** plaintiff Kinlaw, a 60-year-old woman with diabetes and hypertension, has no health insurance. Plaintiff Spier has a chronic back condition; inadequate funding has prevented him from obtaining necessary diagnostic procedures and physiotherapy. Plaintiff Tsosie requires medication for allergies and arthritis, and claims that because of inadequate funding she cannot obtain proper treatment. Plaintiff King, an epileptic, says she was unable to obtain medication from county clinics, suffered seizures, and had to go to a hospital. Plaintiff "Doe" asserts that when he tried to obtain treatment for AIDS-related symptoms, he had to wait four to five hours for an appointment and each time was seen by a different doctor. All of these are people personally dependent upon the quality of care of Alameda County's MIA program; most have experienced inadequate care because the program was underfunded, and all can anticipate future deficiencies in care if the state continues its refusal to fund the program fully.

The majority, however, argues that the county has no duty to use additional subvention funds for the care of MIA's because under Government Code section 17563 "[a]ny funds received by a local agency ... pursuant to the provisions of this chapter may be used for any public purpose." Since the county may use the funds for other purposes, it concludes that MIA's have no special interest in the subvention. [3]

This argument would be sound if the county were already meeting its obligations to MIA's under Welfare and Institutions Code section 17000. If that were the case, the county could use the subvention funds as it chose, and plaintiffs would have no more interest in the matter than any other county resident or taxpayer. But such is not the case at bar. Plaintiffs here allege that the county is not complying with its duty, mandated by Welfare and Institutions Code section 17000, to provide health care for the medically indigent; the county admits its failure but pleads lack of funds. Once the county receives adequate funds, it must perform its statutory duty under section 17000 of the Welfare and Institutions Code. If it refused, an action in mandamus would lie to compel performance.

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(See *Mooney v. Pickett* (1971) 4 Cal.3d 669 [94 Cal.Rptr. 279, 483 P.2d 1231].) In fact, the county has made clear throughout this litigation that it would use the subvention funds to provide care for MIA's. The majority's conclusion that plaintiffs lack a special, beneficial interest in the state's compliance with article XIII B ignores the practical realities of health care funding.

Moreover, we have recognized an exception to the rule that a plaintiff must be beneficially interested. "Where the question is one of public right ***342** and the object of the mandamus is to procure the enforcement of a public duty, the relator need not show that he has any legal or special interest in the result, since it is sufficient that he is interested as a citizen in having the laws executed and the duty in question enforced." (*Bd. of Soc. Welfare v. County of L. A.* (1945) 27 Cal.2d 98, 100-101 [162 P.2d 627].) We explained in *Green v. Obledo* (1981) 29 Cal.3d 126, 144 [172 Cal.Rptr. 206, 624 P.2d 256], that this "exception promotes the policy of guaranteeing citizens the opportunity to ensure that no governmental body impairs or defeats the purpose of legislation establishing a public right. ... It has often been invoked by California courts. [Citations.]"

Green v. Obledo presents a close analogy to the present case. Plaintiffs there filed suit to challenge whether a state welfare regulation limiting deductibility of work-related expenses in determining eligibility for aid to families with dependent children (AFDC) assistance complied with federal requirements. Defendants claimed that plaintiffs were personally affected only by a portion of the regulation, and had no standing to challenge the balance of the regulation. We replied that "[t]here can be no question that the proper calculation of AFDC benefits is a matter of public right [citation], and plaintiffs herein are certainly citizens seeking to procure the enforcement of a public duty. [Citation.] It follows that plaintiffs have standing to seek a writ of mandate commanding defendants to cease enforcing [the regulation] in its entirety." (29 Cal.3d at p. 145.)

We again invoked the exception to the requirement for a beneficial interest in *Common Cause v. Board of Supervisors, supra,* 49 Cal.3d 432. Plaintiffs in that case sought to compel the county to deputize employees to register voters. We quoted *Green v. Obledo, supra,* 29 Cal.3d 126, 144, and concluded that "[t]he question in this case involves a public right to voter outreach programs, and plaintiffs have standing as citizens to seek its vindication." (49 Cal.3d at p. 439.) We should reach the same conclusion here.

B. *Government Code sections 17500-17630 do not create an exclusive remedy which bars citizen-plaintiffs from enforcing article XIII B.*

Four years after the enactment of article XIII B, the Legislature enacted Government Code sections 17500 through 17630 to implement article XIII B, section 6. These statutes create a quasi-judicial body called the Commission on State Mandates, consisting of the state Controller, state Treasurer, state Director of Finance, state Director of the Office of Planning and Research, and one public member. The commission has authority to "hear and decide upon [any] claim" by a local government that it "is entitled to be reimbursed by the state" for costs under article XIII B. (Gov. Code, § 17551, ***343** subd. (a).) Its decisions are subject to review by an action for administrative mandamus in the superior court. (See Gov. Code, § 17559.)

The majority maintains that a proceeding before the Commission on State Mandates is the exclusive means for enforcement of article XIII B, and since that remedy is expressly limited to claims by local agencies or school districts (Gov. Code, § 17552), plaintiffs lack standing to enforce the constitutional provision.[4] I disagree, for two reasons.

First, Government Code section 17552 expressly addressed the question of exclusivity of remedy, and provided that "[t]his chapter shall provide the sole and exclusive procedure by which *a local agency or school district* may claim reimbursement for costs mandated by the state as required by Section 6 of Article XIII B of the California Constitution." (Italics added.) The Legislature was aware that local agencies and school districts were not the only parties concerned with state mandates, for in Government Code section 17555 it provided that "any other interested organization or individual may participate" in the commission hearing. Under these circumstances the Legislature's choice of words-"the sole and exclusive procedure by which a local agency or school district may claim reimbursement"-limits the procedural rights of those claimants only, and does not affect rights of other persons. *Expressio unius est exclusio alterius*-"the expression of certain things in a

statute necessarily involves exclusion of other things not expressed." (*Henderson v. Mann Theatres Corp.* (1976) 65 Cal.App.3d 397, 403 [135 Cal.Rptr. 266].)

The case is similar in this respect to *Common Cause v. Board of Supervisors, supra,* 49 Cal.3d 432. Here defendants contend that the counties' right of action under Government Code sections 17551-17552 impliedly excludes ***344** any citizen's remedy; in *Common Cause* defendants claimed the Attorney General's right of action under Elections Code section 304 impliedly excluded any citizen's remedy. We replied that "the plain language of section 304 contains no limitation on the right of private citizens to sue to enforce the section. To infer such a limitation would contradict our long-standing approval of citizen actions to require governmental officials to follow the law, expressed in our expansive interpretation of taxpayer standing [citations], and our recognition of a 'public interest' exception to the requirement that a petitioner for writ of mandate have a personal beneficial interest in the proceedings [citations]." (49 Cal.3d at p. 440, fn. omitted.) Likewise in this case the plain language of Government Code sections 17551-17552 contain no limitation on the right of private citizens, and to infer such a right would contradict our long-standing approval of citizen actions to enforce public duties.

The United States Supreme Court reached a similar conclusion in *Rosado v. Wyman* (1970) 397 U.S. 397 [25 L.Ed.2d 442, 90 S.Ct. 1207]. In that case New York welfare recipients sought a ruling that New York had violated federal law by failing to make cost-of-living adjustments to welfare grants. The state replied that the statute giving the Department of Health, Education and Welfare authority to cut off federal funds to noncomplying states constituted an exclusive remedy. The court rejected the contention, saying that "[w]e are most reluctant to assume Congress has closed the avenue of effective judicial review to those individuals most directly affected by the administration of its program." (P. 420 [25 L.Ed.2d at p. 460].) The principle is clear: the persons actually harmed by illegal state action, not only some administrator who has no personal stake in the matter, should have standing to challenge that action.

Second, article XIII B was enacted to protect taxpayers, not governments. Sections 1 and 2 of article XIII B establish strict limits on state and local expenditures, and require the refund of all taxes collected in excess of those limits. Section 6 of article XIII B prevents the state from evading those limits and burdening county taxpayers by transferring financial responsibility for a program to a county, yet counting the cost of that program toward the limit on state expenditures.

These provisions demonstrate a profound distrust of government and a disdain for excessive government spending. An exclusive remedy under which only governments can enforce article XIII B, and the taxpayer-citizen can appear only if a government has first instituted proceedings, is inconsistent with the ethos that led to article XIII B. The drafters of article XIII B and the voters who enacted it would not accept that the state Legislature-the principal body regulated by the article-could establish a procedure ***345** under which the only way the article can be enforced is for local governmental bodies to initiate proceedings before a commission composed largely of state financial officials.

One obvious reason is that in the never-ending attempts of state and local government to obtain a larger proportionate share of available tax revenues, the state has the power to coerce local governments into foregoing their rights to enforce article XIII B. An example is the Brown-Presley Trial Court Funding Act (Gov. Code, § 77000 et seq.), which provides that the county's acceptance of funds for court financing may, in the discretion of the Governor, be deemed a waiver of the counties' rights to proceed before the commission on all claims for reimbursement for state- mandated local programs which existed and were not filed prior to passage of the trial funding legislation. [5] The ability of state government by financial threat or inducement to persuade counties to waive their right of action before the commission renders the counties' right of action inadequate to protect the public interest in the enforcement of article XIII B.

The facts of the present litigation also demonstrate the inadequacy of the commission remedy. The state began transferring financial responsibility for MIA's to the counties in 1982. Six years later no county had brought a proceeding before the commission. After the present suit was filed, two counties filed claims for 70 percent reimbursement. Now, nine years after the 1982 legislation, the counties' claims are pending before the Court of Appeal. After that court acts, and we decide whether to review its decision, the matter may still have to go back to the commission for hearings to ***346** determine

the amount of the mandate-which is itself an appealable order. When an issue involves the life and health of thousands, a procedure which permits this kind of delay is not an adequate remedy.

In sum, effective, efficient enforcement of article XIII B requires that standing to enforce that measure be given to those harmed by its violation-in this case, the medically indigent-and not be vested exclusively in local officials who have no personal interest at stake and are subject to financial and political pressure to overlook violations.

C. *Even if plaintiffs lack standing this court should nevertheless address and resolve the merits of the appeal.*

Although ordinarily a court will not decide the merits of a controversy if the plaintiffs lack standing (see *McKinny v. Board of Trustees* (1982) 31 Cal.3d 79, 90 [181 Cal.Rptr. 549, 642 P.2d 460]), we recognized an exception to this rule in our recent decision in *Dix v. Superior Court, supra,* 53 Cal.3d 442 (hereafter *Dix*). In *Dix,* the victim of a crime sought to challenge the trial court's decision to recall a sentence under Penal Code section 1170. We held that only the prosecutor, not the victim of the crime, had standing to raise that issue. We nevertheless went on to consider and decide questions raised by the victim concerning the trial court's authority to recall a sentence under Penal Code section 1170, subdivision (d). We explained that the sentencing issues "are significant. The case is fully briefed and all parties apparently seek a decision on the merits. Under such circumstances, we deem it appropriate to address [the victim's] sentencing arguments for the guidance of the lower courts. Our discretion to do so under analogous circumstances is well settled. [Citing cases explaining when an appellate court can decide an issue despite mootness.]" (53 Cal.3d at p. 454.) In footnote we added that "Under article VI, section 12, subdivision (b) of the California Constitution ..., we have jurisdiction to 'review the *decision of a Court of Appeal* in any cause.' (Italics added.) Here the Court of Appeal's decision addressed two issues-standing and merits. Nothing in article VI, section 12(b) suggests that, having rejected the Court of Appeal's conclusion on the preliminary issue of standing, we are foreclosed from 'review [ing]' the second subject addressed and resolved in its decision." (Pp. 454-455, fn. 8.)

I see no grounds on which to distinguish *Dix.* The present case is also one in which the Court of Appeal decision addressed both standing and merits. It is fully briefed. Plaintiffs and the county seek a decision on the merits. While the state does not seek a decision on the merits in this proceeding, its appeal of the superior court decision in the mandamus proceeding brought by the County of Los Angeles (see maj. opn., *ante,* p. 330, fn. 2) shows that it is not opposed to an appellate decision on the merits. ***347**

The majority, however, notes that various state officials-the Controller, the Director of Finance, the Treasurer, and the Director of the Office of Planning and Research-did not participate in this litigation. Then in a footnote, the majority suggests that this is the reason they do not follow the *Dix* decision. (Maj. opn., *ante,* p. 336, fn. 9.) In my view, this explanation is insufficient. The present action is one for declaratory relief against the state. It is not necessary that plaintiffs also sue particular state officials. (The state has never claimed that such officials were necessary parties.) I do not believe we should refuse to reach the merits of this appeal because of the nonparticipation of persons who, if they sought to participate, would be here merely as amici curiae. [6]

The case before us raises no issues of departmental policy. It presents solely an issue of law which this court is competent to decide on the briefs and arguments presented. That issue is one of great significance, far more significant than any raised in *Dix.* Judges rarely recall sentencing under Penal Code section 1170, subdivision (d); when they do, it generally affects only the individual defendant. In contrast, the legal issue here involves immense sums of money and affect budgetary planning for both the state and counties. State and county governments need to know, as soon as possible, what their rights and obligations are; legislators considering proposals to deal with the current state and county budget crisis need to know how to frame legislation so it does not violate article XIII B. The practical impact of a decision on the people of this state is also of great importance. The failure of the state to provide full subvention funds and the difficulty of the county in filling the gap translate into inadequate staffing and facilities for treatment of thousands of persons. Until the constitutional issues are resolved the legal uncertainties may inhibit both levels of government from taking the steps needed to address this problem. A delay of several years until the Los Angeles case is resolved could result in pain, hardship, or even death for many people. I conclude that, whether or not plaintiffs have standing, this court should address and resolve the merits of the appeal.

D. *Conclusion as to standing.*

As I have just explained, it is not necessary for plaintiffs to have standing for us to be able to decide the merits of the appeal. Nevertheless, I conclude ***348** that plaintiffs have standing both as persons "beneficially interested" under Code of Civil Procedure section 1086 and under the doctrine of *Green v. Obledo, supra,* 29 Cal.3d 126, to bring an action to determine whether the state has violated its duties under article XIII B. The remedy given local agencies and school districts by Government Code sections 17500- 17630 is, as Government Code section 17552 states, the exclusive remedy by which those bodies can challenge the state's refusal to provide subvention funds, but the statute does not limit the remedies available to individual citizens.

III. Merits of the Appeal

A. *State funding of care for MIA's.*

Welfare and Institutions Code section 17000 requires every county to "relieve and support" all indigent or incapacitated residents, except to the extent that such persons are supported or relieved by other sources. [7] From 1971 until 1982, and thus at the time article XIII B became effective, counties were not required to pay for the provision of health services to MIA's, whose health needs were met through the state-funded Medi-Cal program. Since the medical needs of MIA's were fully met through other sources, the counties had no duty under Welfare and Institutions Code section 17000 to meet those needs. While the counties did make general contributions to the Medi-Cal program (which covered persons other than MIA's) from 1971 until 1978, at the time article XIII B became effective in 1980 the counties were not required to make any financial contributions to Medi-Cal. It is therefore undisputed that the counties were not required to provide financially for the health needs of MIA's when article XIII B became effective. The state funded all such needs of MIA's.

In 1982, the Legislature passed Assembly Bill No. 799 (1981-1982 Reg. Sess.; Stats. 1982, ch. 328, pp. 1568-1609) (hereafter AB No. 799), which removed MIA's from the state-funded Medi-Cal program as of January 1, 1983, and thereby transferred to the counties, through the County Medical Services Plan which AB No. 799 created, the financial responsibility to provide health services to approximately 270,000 MIA's. AB No. 799 required that the counties provide health care for MIA's, yet appropriated only 70 percent of what the state would have spent on MIA's had those persons remained a state responsibility under the Medi-Cal program.

Since 1983, the state has only partially defrayed the costs to the counties of providing health care to MIA's. Such state funding to counties was ***349** initially relatively constant, generally more than $400 million per year. By 1990, however, state funding had decreased to less than $250 million. The state, however, has always included the full amount of its former obligation to provide for MIA's under the Medi-Cal program in the year preceding July 1, 1980, as part of its article XIII B "appropriations limit," i.e., as part of the base amount of appropriations on which subsequent annual adjustments for cost-of-living and population changes would be calculated. About $1 billion has been added to the state's adjusted spending limit for population growth and inflation *solely* because of the state's inclusion of all MIA expenditures in the appropriation limit established for its base year, 1979-1980. The state has not made proportional increases in the sums provided to counties to pay for the MIA services funded by the counties since January 1, 1983.

B. *The function of article XIII B.*

Our recent decision in *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 486-487 [280 Cal.Rptr. 92, 808 P.2d 235] (hereafter *County of Fresno*), explained the function of article XIII B and its relationship to article XIII A, enacted one year earlier:

"At the June 6, 1978, Primary Election, article XIII A was added to the Constitution through the adoption of Proposition 13, an initiative measure aimed at controlling ad valorem property taxes and the imposition of new 'special taxes.' (*Amador Valley Joint Union High Sch. Dist. v. State Bd. of Equalization* (1978) 22 Cal.3d 208, 231-232 [149 Cal.Rptr. 239, 583 P.2d 1281].) The constitutional provision imposes a limit on the power of state and local governments to adopt and levy taxes. (*City of Sacramento v. State of California* (1990) 50 Cal.3d 51, 59, fn. 1 [266 Cal.Rptr. 139, 785 P.2d 522] (*City of Sacramento*).)

"At the November 6, 1979, Special Statewide Election, article XIII B was added to the Constitution through the adoption of Proposition 4, another initiative measure. That measure places limitations on the ability of both

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state and local governments to appropriate funds for expenditures.

" 'Articles XIII A and XIII B work in tandem, together restricting California governments' power both to levy and to spend [taxes] for public purposes.' (*City of Sacramento, supra,* 50 Cal.3d at p. 59, fn. 1.)

"Article XIII B of the Constitution was intended ... to provide 'permanent protection for taxpayers from excessive taxation' and 'a reasonable way to provide discipline in tax spending at state and local levels.' (See *County of Placer v. Corin* (1980) 113 Cal.App.3d 443, 446 [170 Cal.Rptr. 232], quoting and following Ballot Pamp., Proposed Stats. and Amends. to Cal. Const. with arguments to voters, Special Statewide Elec. (Nov. 6, 1979), argument ***350** in favor of Prop. 4, p. 18.) To this end, it establishes an 'appropriations limit' for both state and local governments (Cal. Const., art. XIII B, § 8, subd. (h)) and allows no 'appropriations subject to limitation' in excess thereof (*id.,* § 2).[8] (See *County of Placer v. Corin, supra,* 113 Cal.App.3d at p. 446.) It defines the relevant 'appropriations subject to limitation' as 'any authorization to expend during a fiscal year the proceeds of taxes ....' (Cal. Const., art. XIII B, § 8, subd. (b).)" (*County of Fresno, supra,* 53 Cal.3d at p. 486.)

Under section 3 of article XIII B the state may transfer financial responsibility for a program to a county if the state and county mutually agree that the appropriation limit of the state will be decreased and that of the county increased by the same amount.[9] Absent such an agreement, however, section 6 of article XIII B generally precludes the state from avoiding the spending limits it must observe by shifting to local governments programs and their attendant financial burdens which were a state responsibility prior to the effective date of article XIII B. It does so by requiring that "Whenever the Legislature or any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse such local government for the cost of such program or increased level of service ...."[10]

"Section 6 was included in article XIII B in recognition that article XIII A of the Constitution severely restricted the taxing powers of local governments. (See *County of Los Angeles* [v. *State of California* (1987)] 43 Cal.3d 46, 61 [233 Cal.Rptr. 38, 729 P.2d 202].) The provision was intended to preclude the state from shifting financial responsibility for carrying out governmental functions onto local entities that were ill equipped to handle the task. (*Ibid.*; see *Lucia Mar Unified School Dist. v. Honig, supra,* 44 Cal.3d 830, 836, fn. 6.) Specifically, it was designed to protect the tax ***351** revenues of local governments from state mandates that would require expenditure of such revenues." (*County of Fresno, supra,* 53 Cal.3d at p. 487.)

C. *Applicability of article XIII B to health care for MIA's.*

The state argues that care of the indigent, including medical care, has long been a county responsibility. It claims that although the state undertook to fund this responsibility from 1979 through 1982, it was merely temporarily (as it turned out) helping the counties meet their responsibilities, and that the subsequent reduction in state funding did not impose any "new program" or "higher level of service" on the counties within the meaning of section 6 of article XIII B. Plaintiffs respond that the critical question is not the traditional roles of the county and state, but who had the fiscal responsibility on November 6, 1979, when article XIII B took effect. The purpose of article XIII B supports the plaintiffs' position.

As we have noted, article XIII A of the Constitution (Proposition 13) and article XIII B are complementary measures. The former radically reduced county revenues, which led the state to assume responsibility for programs previously financed by the counties. Article XIII B, enacted one year later, froze both state and county appropriations at the level of the 1978-1979 budgets-a year when the budgets included state financing for the prior county programs, but not county financing for these programs. Article XIII B further limited the state's authority to transfer obligations to the counties. Reading the two together, it seems clear that article XIII B was intended to limit the power of the Legislature to retransfer to the counties those obligations which the state had assumed in the wake of Proposition 13.

Under article XIII B, both state and county appropriations limits are set on the basis of a calculation that begins with the budgets in effect when article XIII B was enacted. If the state could transfer to the county a program for which the state at that time had full financial responsibility, the county could be forced to assume additional financial obligations without the right to appropriate additional moneys. The state, at the same

time, would get credit toward its appropriations limit for expenditures it did not pay. County taxpayers would be forced to accept new taxes or see the county forced to cut existing programs further; state taxpayers would discover that the state, by counting expenditures it did not pay, had acquired an actual revenue surplus while avoiding its obligation to refund revenues in excess of the appropriations limit. Such consequences are inconsistent with the purpose of article XIII B.

Our decisions interpreting article XIII B demonstrate that the state's subvention requirement under section 6 is not vitiated simply because the ***352** "program" existed before the effective date of article XIII B. The alternate phrase of section 6 of article XIII B, " 'higher level of service[,]' ... must be read in conjunction with the predecessor phrase 'new program' to give it meaning. Thus read, it is apparent that *the subvention requirement for increased or higher level of service is directed to state mandated increases in the services provided by local agencies in existing 'programs.'* " (*County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56 [233 Cal.Rptr. 38, 729 P.2d 202], italics added.)

Lucia Mar Unified School Dist. v. Honig, supra, 44 Cal.3d 830, presents a close analogy to the present case. The state Department of Education operated schools for severely handicapped students, but prior to 1979 *school districts were required by statute to contribute* to education of those students from the district at the state schools. In 1979, in response to the restrictions on school district revenues imposed by Proposition 13, the statutes requiring such district contributions were repealed and the state assumed full responsibility for funding. The state funding responsibility continued until June 28, 1981, when Education Code section 59300 (hereafter section 59300), requiring school districts to share in these costs, became effective.

The plaintiff districts filed a test claim before the commission, contending they were entitled to state reimbursement under section 6 of article XIII B. The commission found the plaintiffs were not entitled to state reimbursement, on the rationale that the increase in costs to the districts compelled by section 59300 imposed no new program or higher level of services. The trial and intermediate appellate courts affirmed on the ground that section 59300 called for only an " 'adjustment of costs' " of educating the severely handicapped, and that "*a shift in the funding of an existing program is not a new program or a higher level of service*" within the meaning of article XIII B. (*Lucia Mar Unified School Dist. v. Honig, supra,* 44 Cal.3d at p. 834, italics added.)

We reversed, rejecting the state's theories that the funding shift to the county of the subject program's costs does not constitute a new program. "[There can be no] doubt that although the schools for the handicapped have been operated by the state for many years, the program was new insofar as plaintiffs are concerned, since *at the time section 59300 became effective* they were not required to contribute to the education of students from their districts at such schools. [¶] ... To hold, under the circumstances of this case, that a shift in funding of an existing program from the state to a local entity is not a new program as to the local agency would, we think, violate the intent underlying section 6 of article XIIIB. That article imposed spending limits on state and local governments, and it followed by one year the adoption by initiative of article XIIIA, which severely limited the taxing ***353** power of local governments. ... [¶] The intent of the section would plainly be violated if the state could, while retaining administrative control [11] of programs it has supported with state tax money, simply shift the cost of the programs to local government on the theory that the shift does not violate section 6 of article XIIIB because the programs are not 'new.' Whether the shifting of costs is accomplished by compelling local governments to pay the cost of entirely new programs created by the state, *or by compelling them to accept financial responsibility in whole or in part for a program which was funded entirely by the state before the advent of article XIIIB, the result seems equally violative of the fundamental purpose underlying section 6 of that article.*" (*Lucia Mar Unified School Dist. v. Honig, supra,* 44 Cal.3d at pp. 835- 836, fn. omitted, italics added.)

The state seeks to distinguish *Lucia Mar* on the ground that the education of handicapped children in state schools had never been the responsibility of the local school district, but overlooks that the local district had previously been required to contribute to the cost. Indeed the similarities between *Lucia Mar* and the present case are striking. In *Lucia Mar,* prior to 1979 the state and county shared the cost of educating handicapped children in state schools; in the present case from 1971-1979 the state and county shared the cost of caring for MIA's under the Medi-Cal program. In 1979, following enactment of Proposition 13, the state took full responsibility for both

programs. Then in 1981 (for handicapped children) and 1982 (for MIA's), the state sought to shift some of the burden back to the counties. To distinguish these cases on the ground that care for MIA's is a county program but education of handicapped children a state program is to rely on arbitrary labels in place of financial realities.

The state presents a similar argument when it points to the following emphasized language from *Lucia Mar Unified School Dist. v. Honig, supra,* 44 Cal.3d 830: "[B]ecause section 59300 shifts partial financial responsibility for the support of students in the state-operated schools from the state to school districts-*an obligation the school districts did not have at the time article XIII B was adopted*-it calls for plaintiffs to support a 'new program' within the meaning of section 6." (P. 836, fn. omitted, italics added.) It urges *Lucia Mar* reached its result *only* because the "program" requiring school district funding in that case *was not required by statute* at the effective date of ***354** article XIII B. The state then argues that the case at bench is distinguishable because it contends Alameda County had a continuing obligation *required by statute* antedating that effective date, which had only been "temporarily" [12] suspended when article XIII B became effective. I fail to see the distinction between a case-*Lucia Mar*-in which no existing statute as of 1979 imposed an obligation on the local government and one-this case-in which the statute existing in 1979 imposed no obligation on local government.

The state's argument misses the salient point. As I have explained, the application of section 6 of article XIII B does not depend upon when the program was created, but upon who had the burden of funding it when article XIII B went into effect. Our conclusion in *Lucia Mar* that the educational program there in issue was a "new" program as to the school districts was not based on the presence or absence of any antecedent statutory obligation therefor. *Lucia Mar* determined that whether the program was new *as to the districts* depended on *when* they were compelled to assume the obligation to partially fund an existing program which they had not funded at the time article XIII B became effective.

The state further relies on two decisions, *Madera Community Hospital v. County of Madera* (1984) 155 Cal.App.3d 136 [201 Cal.Rptr. 768] and *Cooke v. Superior Court* (1989) 213 Cal.App.3d 401 [261 Cal.Rptr. 706], which hold that the county has a statutory obligation to provide medical care for indigents, but that it need not provide precisely the same level of services as the state provided under Medi-Cal. [13] Both are correct, but irrelevant to this case. [14] The county's obligation to MIA's is defined by Welfare and Institutions Code section 17000, not by the former Medi-Cal program. [15] If the ***355** state, in transferring an obligation to the counties, permits them to provide less services than the state provided, the state need only pay for the lower level of services. But it cannot escape its responsibility entirely, leaving the counties with a state-mandated obligation and no money to pay for it.

The state's arguments are also undercut by the fact that it continues to use the approximately $1 billion in spending authority, generated by its previous total funding of the health care program in question, as a portion of its initial *base spending limit* calculated pursuant to sections 1 and 3 of article XIII B. In short, the state may maintain here that care for MIA's is a county obligation, but when it computes its appropriation limit it treats the entire cost of such care as a state program.

IV. Conclusion

This is a time when both state and county governments face great financial difficulties. The counties, however, labor under a disability not imposed on the state, for article XIII A of the Constitution severely restricts their ability to raise additional revenue. It is, therefore, particularly important to enforce the provisions of article XIII B which prevent the state from imposing additional obligations upon the counties without providing the means to comply with these obligations.

The present majority opinion disserves the public interest. It denies standing to enforce article XIII B both to those persons whom it was designed to protect-the citizens and taxpayers-and to those harmed by its violation-the medically indigent adults. And by its reliance on technical grounds to avoid coming to grips with the merits of plaintiffs' appeal, it permits the state to continue to violate article XIII B and postpones the day when the medically indigent will receive adequate health care.

Mosk, J., concurred. ***356**

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Footnotes

1 The complaint also sought a declaration that the county was obliged to provide health care services to indigents that were equivalent to those available to nonindigents. This issue is not before us. The County of Alameda aligned itself with plaintiffs in the superior court and did not oppose plaintiffs' effort to enforce section 6.

2 On November 23, 1987, the County of Los Angeles filed a test claim with the Commission. San Bernardino County joined as a test claimant. The Commission ruled against the counties, concluding that no state mandate had been created. The Los Angeles County Superior Court subsequently granted the counties' petition for writ of mandate (Code Civ. Proc., § 1094.5), reversing the Commission, on April 27, 1989. (No. C-731033.) An appeal from that judgment is presently pending in the Court of Appeal. (*County of Los Angeles v. State of California,* No. B049625.)

3 Plaintiffs argue that they seek only a declaration that AB 799 created a state mandate and an injunction against the shift of costs until the state decides what action to take. This is inconsistent with the prayer of their complaint which sought an injunction requiring defendants to restore Medi-Cal eligibility to all medically indigent adults until the state paid the cost of full health services for them. It is also unavailing.

An injunction against enforcement of a state mandate is available only after the Legislature fails to include funding in a local government claims bill following a determination by the Commission that a state mandate exists. (Gov. Code, § 17612.) Whether plaintiffs seek declaratory relief and/or an injunction, therefore, they are seeking to enforce section 6.

All further statutory references are to the Government Code unless otherwise indicated.

4 The test claim by the County of Los Angeles was filed prior to that proposed by Alameda County. The Alameda County claim was rejected for that reason. (See § 17521.) Los Angeles County permitted San Bernardino County to join in its claim which the Commission accepted as a test claim intended to resolve the issues the majority elects to address instead in this proceeding. Los Angeles County declined a request from Alameda County that it be included in the test claim because the two counties' systems of documentation were so similar that joining Alameda County would not be of any benefit. Alameda County and these plaintiffs were, of course, free to participate in the Commission hearing on the test claim. (§ 17555.)

5 " 'Local agency' means any city, county, special district, authority, or other political subdivision of the state." (§ 17518.)

6 " 'School district' means any school district, community college district, or county superintendant of schools." (§ 17519.)

7 Plaintiffs' argument that the Legislature's failure to make provision for individual enforcement of section 6 before the Commission demonstrates an intent to permit legal actions, is not persuasive. The legislative statement of intent to relegate all mandate disputes to the Commission is clear. A more likely explanation of the failure to provide for test cases to be initiated by individuals lies in recognition that (1) because section 6 creates rights only in governmental entities, individuals lack sufficient beneficial interest in either the receipt or expenditure of reimbursement funds to accord them standing; and (2) the number of local agencies having a direct interest in obtaining reimbursement is large enough to ensure that citizen interests will be adequately represented.

8 Plaintiffs are not without a remedy if the county fails to provide adequate health care, however. They may enforce the obligation imposed on the county by Welfare and Institutions Code sections 17000 and 17001, and by judicial action. (See, e.g., *Mooney v. Pickett* (1971) 4 Cal.3d 669 [94 Cal.Rptr. 279, 483 P.2d 1231].)

9 For this reason, it would be inappropriate to address the merits of plaintiff's claim in this proceeding. (Cf. *Dix v. Superior Court* (1991) 53 Cal.3d 442 [279 Cal.Rptr. 834, 807 P.2d 1063].) Unlike the dissent, we do not assume that in representing the state in this proceeding, the Attorney General necessarily represented the interests and views of these officials.

1 The majority states that "Plaintiffs are not without a remedy if the county fails to provide adequate health care .... They may enforce the obligation imposed on the county by Welfare and Institutions Code sections 17000 and 17001, and by judicial action." (Maj. opn., *ante,* p. 336, fn. 8)

The majority fails to note that plaintiffs have already tried this remedy, and met with the response that, owing to the state's inadequate subvention funds, the county cannot afford to provide adequate health care.

2 It is of no importance that plaintiffs did not request issuance of a writ of mandate. In *Taschner v. City Council* (1973) 31 Cal.App.3d 48, 56 [107 Cal.Rptr. 214] (overruled on other grounds in *Associated Home Builders etc., Inc. v. City of Livermore* (1976) 18 Cal.3d 582, 596 [135 Cal.Rptr. 41, 557 P.2d 473, 92 A.L.R.3d 1038]), the court said that "[a]s against a general demurrer, a complaint for declaratory relief may be treated as a petition for mandate [citations], and where a complaint for declaratory relief alleges facts sufficient to entitle plaintiff to mandate, it is error to sustain a general demurrer without leave to amend."

In the present case, the trial court ruled on a motion for summary judgment, but based that ruling not on the evidentiary record (which supported plaintiffs' showing of irreparable injury) but on the issues as framed by the pleadings. This is

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essentially equivalent to a ruling on demurrer, and a judgment denying standing could not be sustained on the narrow ground that plaintiffs asked for the wrong form of relief without giving them an opportunity to correct the defect. (See *Residents of Beverly Glen, Inc. v. City of Los Angeles* (1973) 34 Cal.App.3d 117, 127-128 [109 Cal.Rptr. 724].)

3 The majority's argument assumes that the state will comply with a judgment for plaintiffs by providing increased subvention funds. If the state were instead to comply by restoring Medi-Cal coverage for MIA's, or some other method of taking responsibility for their health needs, plaintiffs would benefit directly.

4 The majority emphasizes the statement of purpose of Government Code section 17500: "The Legislature finds and declares that the existing system for reimbursing local agencies and school districts for the costs of state-mandated local programs has not provided for the effective determination of the state's responsibilities under section 6 of article XIII B of the California Constitution. The Legislature finds and declares that the failure of the existing process to adequately and consistently resolve the complex legal questions involved in the determination of state-mandated costs has led to an increasing reliance by local agencies and school districts on the judiciary, and, therefore, in order to relieve unnecessary congestion of the judicial system, it is necessary to create a mechanism which is capable of rendering sound quasi-judicial decisions and providing an effective means of resolving disputes over the existence of state-mandated local programs." The "existing system" to which Government Code section 17500 referred was the Property Tax Relief Act of 1972 (Rev. & Tax. Code, §§ 2201-2327), which authorized local agencies and school boards to request reimbursement from the state Controller. Apparently dissatisfied with this remedy, the agencies and boards were bypassing the Controller and bringing actions directly in the courts. (See, e.g., *County of Contra Costa v. State of California* (1986) 177 Cal.App.3d 62 [222 Cal.Rptr. 750].) The legislative declaration refers to this phenomena. It does not discuss suits by individuals.

5 "(a) The initial decision by a county to opt into the system pursuant to Section 77300 *shall constitute a waiver of all claims for reimbursement for state-mandated local programs not theretofore approved by the State Board of Control, the Commission on State Mandates, or the courts to the extent the Governor, in his discretion, determines that waiver to be appropriate*; provided, that a decision by a county to opt into the system pursuant to Section 77300 beginning with the second half of the 1988-89 fiscal year shall not constitute a waiver of a claim for reimbursement based on a statute chaptered on or before the date the act which added this chapter is chaptered, which is filed in acceptable form on or before the date the act which added this chapter is chaptered. A county may petition the Governor to exempt any such claim from this waiver requirement; and the Governor, in his discretion, may grant the exemption in whole or in part. The waiver shall not apply to or otherwise affect any claims accruing after initial notification. Renewal, renegotiation, or subsequent notification to continue in the program shall not constitute a waiver. [¶] (b) The initial decision by a county to opt into the system pursuant to Section 77300 shall constitute a waiver of any claim, cause of action, or action whenever filed, with respect to the Trial Court Funding Act of 1985, Chapter 1607 of the Statutes of 1985, or Chapter 1211 of the Statutes of 1987." (Gov. Code, § 77203.5, italics added.)

"As used in this chapter, 'state-mandated local program' *means any and all reimbursements owed or owing by operation of either Section 6 of Article XIII B of the California Constitution,* or Section 17561 of the Government Code, or both." (Gov. Code, § 77005, italics added.)

6 It is true that these officials would participate in a proceeding before the Commission on State Mandates, but they would do so as members of an administrative tribunal. On appellate review of a commission decision, its members, like the members of the Public Utilities Commission or the Workers' Compensation Appeals Board, are not respondents and do not appear to present their individual views and positions. For example, in *Lucia Mar Unified School Dist. v. Honig* (1988) 44 Cal.3d 830 [244 Cal.Rptr. 677, 750 P.2d 318], in which we reviewed a commission ruling relating to subvention payments for education of handicapped children, the named respondents were the state Superintendent of Public Instruction, the Department of Education, and the Commission on State Mandates. The individual members of the commission were not respondents and did not participate.

7 Welfare and Institutions Code section 17000 provides that "[e]very county ... shall relieve and support all incompetent, poor, indigent persons, and those incapacitated by age, disease, or accident, lawfully resident therein, when such persons are not supported and relieved by their relatives or friends, by their own means, or by state hospitals or other state or private institutions."

8 Article XIII B, section 1 provides: "The total annual appropriations subject to limitation of the state and of each local government shall not exceed the appropriations limit of such entity of government for the prior year adjusted for changes in the cost of living and population except as otherwise provided in this Article."

9 Section 3 of article XIII B reads in relevant part: "The appropriations limit for any fiscal year ... shall be adjusted as follows: "(a) In the event that the financial responsibility of providing services is transferred, in whole or in part ... from one entity of government to another, then for the year in which such transfer becomes effective the appropriation limit of the transferee

entity shall be increased by such reasonable amount as the said entities shall mutually agree and the appropriations limit of the transferor entity shall be decreased by the same amount. ..."

10 Section 6 of article XIII B further provides that the "Legislature may, but need not, provide such subvention of funds for the following mandates: (a) Legislative mandates requested by the local agency affected; (b) Legislation defining a new crime or changing an existing definition of a crime; or (c) Legislative mandates enacted prior to January 1, 1975, or executive orders or regulations initially implementing legislation enacted prior to January 1, 1975." None of these exceptions apply in the present case.

11 The state notes that, in contrast to the program at issue in *Lucia Mar,* it has not retained administrative control over aid to MIA's. But the quoted language from *Lucia Mar,* while appropriate to the facts of that case, was not intended to establish a rule limiting article XIII B, section 6, to instances in which the state retains administrative control over the program that it requires the counties to fund. The constitutional language admits of no such limitation, and its recognition would permit the Legislature to evade the constitutional requirement.

12 The state's repeated emphasis on the "temporary" nature of its funding is a form of post hoc reasoning. At the time article XIII B was enacted, the voters did not know which programs would be temporary and which permanent.

13 It must, however, provide a *comparable* level of services. (See *Board of Supervisors v. Superior Court* (1989) 207 Cal.App.3d 552, 564 [254 Cal.Rptr. 905].)

14 Certain language in *Madera Community Hospital v. County of Madera, supra,* 155 Cal.App.3d 136, however, is questionable. That opinion states that the "Legislature intended that County bear an obligation to its poor and indigent residents, *to be satisfied from county funds,* notwithstanding federal or state programs which exist concurrently with County's obligation and alleviate, to a greater or lesser extent, County's burden." (P. 151.) Welfare and Institutions Code section 17000 by its terms, however, requires the county to provide support to residents only "when such persons are not supported and relieved by their relatives or friends, by their own means, or by state hospitals or other state or private institutions." Consequently, to the extent that the state or federal governments provide care for MIA's, the county's obligation to do so is reduced pro tanto.

15 The county's right to subvention funds under article XIII B arises because its duty to care for MIA's is a state- mandated responsibility; if the county had no duty, it would have no right to funds. No claim is made here that the funding of medical services for the indigent shifted to Alameda County is not a program " 'mandated' " by the state; i.e., that Alameda County has any option other than to pay these costs. (*Lucia Mar Unified School Dist. v. Honig, supra,* 44 Cal.3d at pp. 836-837.)

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59 Cal.4th 59
Supreme Court of California

LONG BEACH POLICE OFFICERS ASSOCIATION, Plaintiff and Appellant,
v.
CITY OF LONG BEACH et al.,
Defendants and Appellants;
Los Angeles Times Communications LLC,
Real Party in Interest and Respondent.

No. S200872.
|
May 29, 2014.

Synopsis

Background: City police officers association brought action against city, seeking an injunction against disclosure, pursuant to the California Public Records Act (CPRA), of names of officers involved in shooting incidents over a five-year period. Newspaper company intervened and filed opposition, and city filed memorandum aligning itself with association. The Superior Court, Los Angeles County, No. NC055491, Patrick T. Madden, J., denied injunction without prejudice to future requests relating to individual officers. Association and city petitioned for writ of mandate, and the Court of Appeal affirmed. Association and city filed separate petitions for review, and the Supreme Court granted review, superseding the opinion of the Court of Appeal.

[Holding:] The Supreme Court, Kennard, J., held that CPRA did not protect officers' names from disclosure.

Affirmed.

Chin, J., dissented with opinion.

West Headnotes (6)

[1] Records
Judicial enforcement in general

Any failure to serve newspaper with police lieutenant's declaration did not adversely affect newspaper in Public Records Act action regarding disclosure of names of officers involved in shootings, as trial court concluded that the facts asserted in the declaration were too general and speculative to support the request for injunctive relief prohibiting disclosure. West's Ann.Cal.Gov.Code § 6250.

2 Cases that cite this headnote

[2] Records
Discretion and equitable considerations; balancing interests

Records
Evidence and burden of proof

Public Records Act's "catchall exemption" allowing withholding of records if the public interest served by nondisclosure clearly outweighs the interest served by disclosure contemplates a case-by-case balancing process, with the burden of proof on the proponent of nondisclosure to demonstrate a clear overbalance on the side of confidentiality. West's Ann.Cal.Gov.Code § 6255(a).

4 Cases that cite this headnote

[3] Records
Exemptions or prohibitions under other laws

Public Records Act provision which protects records "exempted or prohibited pursuant to federal or state law" incorporates other disclosure prohibitions established by law. West's Ann.Cal.Gov.Code § 6254(k).

3 Cases that cite this headnote

[4] Records

Personal privacy considerations in general;personnel matters

California Public Records Act required disclosure of names of city police officers involved in shootings over five-year period; names themselves were not necessarily linked to information in personnel records, as they likely could be found in documents such as initial incident reports and could be provided without revealing any investigatory or disciplinary matter, public's substantial interest in the conduct of the officers involved in the shootings outweighed the officers' personal privacy interests, and there was no evidence of a specific safety concern regarding any particular officer which justified nondisclosure. West's Ann.Cal.Gov.Code §§ 6254(c), 6255; West's Ann.Cal.Penal Code § 832.7(a), 832.8(d).

3 Cases that cite this headnote

[5] Records

Personal privacy considerations in general;personnel matters

When it comes to the Public Records Act disclosure of a peace officer's name, the public's substantial interest in the conduct of its peace officers outweighs, in most cases, the officer's personal privacy interest. West's Ann.Cal.Gov.Code § 6254(c).

3 Cases that cite this headnote

[6] Records

Matters Subject to Disclosure; Exemptions

A mere assertion of possible endangerment does not clearly outweigh the public interest in access to records. West's Ann.Cal.Gov.Code § 6255(a).

See 2 Witkin, Cal. Evidence (5th ed. 2012) Witnesses, § 312 et seq.

1 Cases that cite this headnote

Attorneys and Law Firms

***57** Law Offices of James E. Trott, James E. Trott and Larry J. Roberts for Plaintiff and Appellant.

The Law Offices of Charles Goldwasser, Charles A. Goldwasser, David A. Goldwasser, Los Angeles, and Theodore H. Dokko for Association of Orange County Deputy Sheriffs, Santa Ana Police Officers Association and Santa Barbara Police Officers Association as Amici Curiae on behalf of Plaintiff and Appellant.

Crabbe, Brown & James, Larry H. James and Christina L. Corl for The National Fraternal Order of Police as Amicus Curiae on behalf of Plaintiff and Appellant.

Bobbitt, Pinckard & Fields, Richard L. Pinckard, San Diego, and Charles B. Walker for Police Officers Research Association of California as Amicus Curiae on behalf of Plaintiff and Appellant.

Stone Busailah, Michael P. Stone, Muna Busailah, Pasadena, and Robert Rabe for Los Angeles Police Protective League and Riverside Sheriffs' Association, Legal Defense Trust as Amici Curiae on behalf of Plaintiff and Appellant.

Robert E. Shannon, City Attorney, and Christina L. Checel, Deputy City Attorney, for Defendants and Appellants.

Liebert Cassidy Whitmore, Richard M. Kreisler and David A. Urban, Los Angeles, for Los Angeles County Police Chiefs' Association as Amicus Curiae on behalf of Defendants and Appellants.

Karlene W. Goller, Los Angeles; Davis Wright Tremaine, Kelli L. Sager, Rochelle L. Wilcox, Los Angeles, and Jeff Glasser, San Francisco, for Real Party in Interest and Respondent.

Peter Bibring; Michael T. Risher, San Francisco; and David Blair–Loy, San Francisco, for ACLU Foundation of Southern California, ACLU Foundation of Northern California and ACLU Foundation of San Diego & Imperial Counties as Amici Curiae on behalf of Real Party in Interest and Respondent.

Sheppard, Mullin, Richter & Hampton and Guylyn R. Cummins, San Diego, for California Newspaper Publishers Association, California

Broadcasters Association, Newspaper Association of America, National Press Photographers Association, Associated Press, CBS Broadcasting, Inc., Freedom Communications, Inc., Gannett Co., Inc., Hearst Corporation, The New York Times Company, Press Democrat, The Press–Enterprise, San Diego Union–Tribune, The McClatchy Company, First Amendment Coalition, First Amendment Project, Californians Aware, Citizen Media Law Project, the Reporters Committee for Freedom of the Press and Newspaper Guild as Amici Curiae on behalf of Real Party in Interest and Respondent.

Levine Sullivan Koch & Schulz, James E. Grossberg, Lee Levine, Jeanette Melendez Bead; Terry Francke; Mark Powers, Santa Maria; James Ewert, Sacramento; Mark H. Jackson, San Bernardino, Jason P. Conti, Gail C. Gove; ***58 David M. Giles; Peter Scheer, San Francisco; Eve B. Burton, Jonathan R. Donnellan; Karole Morgan–Prager, Stephen J. Burns, Sacramento; Denise Leary, Ashley Messenger; Mickey H. Osterreicher; Amanda M. Leith; Covington & Burling, Kurt Wimmer; Bruce D. Brown, Gregg P. Leslie and Mark R. Caramanica for Californians Aware, California Broadcasters Association, California Newspaper Publishers Association, Dow Jones & Company, Inc., The E.W. Scripps Company, First Amendment Coalition, Hearst Corporation, The McClatchy Company, National Press Photographers Association, National Public Radio, Inc. NBCUniversal Media, LLC, Newspaper Association of America and the Reporters Committee for Freedom of the Press as Amici Curiae on behalf of Real Party in Interest and Respondent.

Opinion

KENNARD, J. *

*64 **461 A newspaper asked a city to release the names of police officers involved in certain **462 shootings while on duty. The police union then sought injunctive relief against the city in superior court, attempting to prevent release of the names. The newspaper intervened (seeking disclosure of the names), and the city then aligned itself with the union (opposing disclosure). The trial court denied the union's request for a permanent injunction; that denial was upheld on appeal. We granted the separate petitions for review filed by the city and the union. We now affirm the judgment of the Court of Appeal.

I

Shortly before 5:00 p.m., on December 12, 2010, two City of Long Beach police officers responded to a resident's telephone call about an intoxicated man brandishing a "six-shooter" on neighboring property. At the sight of the two officers, the man (35–year–old Douglas Zerby) pointed at them an object resembling a gun. The officers immediately fired multiple rounds at Zerby, killing him. It turned out that the object Zerby was holding was a garden hose spray nozzle with a pistol grip.

Three days later, reporter Richard Winton of the Los Angeles Times (the Times), asked the Long Beach City Attorney's Office for "[t]he names of Long Beach police officers involved in the December 12[, 2010,] office[r-]involved shooting in the 5300 block of East Ocean Boulevard" (the Zerby shooting), as well as "[t]he names of Long Beach police officers involved in officer [-]involved shootings from Jan[uary] 1[,] 2005 to Dec[ember] 11, 2010" (the nearly six-year period leading up to the Zerby shooting). The request was made under the California Public Records Act (Gov.Code, § 6250 et seq.).

On December 30, 2010, plaintiff Long Beach Police Officers Association (the Union), the bargaining agent for all Long Beach police officers, sought injunctive relief in the superior court. Named as defendants were the City of Long Beach, the Long Beach Police Department, and its chief of police (collectively, the City). In its complaint, the Union asserted that the City had informed it that, unless prohibited by a court, the City would disclose the information sought by the Times. Accompanying the Union's request for injunctive relief was a declaration by Lieutenant Steve James, the Union's president, expressing concern that release of the officers' names could result *65 in "threats against the well being of officers or their families," as occurred in one recent police shooting case in which release of an officer's name led to "death threats" against ***59 the officer. James also mentioned an anonymous post on an Internet Web site, wishing that the children of an officer involved in a particular police shooting would experience Christmas without their father. James asserted that the Internet offers broad access to personal information, using only a person's name as an Internet search term.

The superior court issued a temporary restraining order prohibiting the City from disclosing to the Times the names of the officers involved in the Zerby shooting. The court then continued the case to a later date to determine whether to issue a preliminary or permanent injunction, and it allowed the Times to intervene in the action.

Defendant City supported plaintiff Union's request for injunctive relief. The City asserted that the names of the two officers involved in the December 2010 fatal shooting of Zerby were exempt from disclosure under the California Public Records Act. With respect to the names of the City's police officers involved in *earlier* shootings, the City asserted that those names, too, were likely subject to the same statutory exemptions but that its practice was to evaluate each disclosure request on a "case-by-case basis."

The City submitted a declaration by Long Beach Police Lieutenant Lloyd Cox, who was in charge of "the criminal and administrative investigations related to all Officer Involved Shootings." The declaration stated that the police department conducts an administrative investigation of every officer-involved shooting, and, if warranted, an internal criminal investigation follows. Documents resulting from these investigations are treated by the police department as personnel records that are statutorily exempt from disclosure. ****463** Cox's declaration also stated that revealing the name of an officer involved in a shooting could expose the officer and the officer's family to harassment, because the officer's home address and other personal information could easily be found using the Internet. The declaration further stated that when, for example, an officer is involved in a shooting of a gang member, it is not uncommon for the gang to retaliate against the officer. Cox mentioned eight "Officer Safety Bulletins ... about potential retaliation/ threats against officers," two of which were related to shootings, and he also described graffiti in the City of Long Beach that read "Strike Kill a Cop."

In arguing against disclosure of the names of the officers involved in the Zerby shooting, the Union and the City cited Government Code section 6255, subdivision (a), which authorizes denial of a public records request when "the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record." The Union and the City ***66** argued that the public interest in preventing harassment, threats, or violence against officers and their families outweighed any benefit the public would gain from disclosure.

[1] The Times moved to strike Lieutenant James's declaration (filed by the Union), but the Times did not object to the declaration of Lieutenant Cox (filed by the City).[1] The trial court struck those *****60** portions of the James declaration that mentioned (1) the general safety concerns associated with releasing the names of officers involved in shootings, (2) the death threats made against specific officers involved in past shootings, and (3) the ease with which a name can be used to gather personal information over the Internet. The trial court then denied the Union's request for a preliminary or permanent injunction, and it discharged the temporary restraining order. The court ruled that none of the disclosure exemptions in the California Public Records Act protected the names of officers involved in shootings. With respect to the potential harassment facing those officers and their families, the court considered such harassment to be speculative in the absence of a particularized showing regarding a specific officer. Recognizing that such a showing might be made in the future, the superior court denied injunctive relief "without prejudice" to a renewed request demonstrating that "releasing the names of particular officers will create a likelihood of harm."

The Union and the City appealed, without success. We then granted their petitions for review.[2]

II

A. Statutory Law

The California Legislature in 1968, recognizing that "access to information concerning the conduct of the people's business is a fundamental and ***67** necessary right of every person in this state" (Gov.Code, § 6250), enacted the California Public Records Act, which grants access to public records held by state and local agencies (*id.,* § 6253, subd. (a)). The act broadly defines " '[p]ublic records' " as including "any writing containing information relating to the conduct of the public's business prepared, owned, used, or retained by any state or local agency...." (*Id.,* § 6252, subd. (e).) The act has certain ****464** specific exemptions (*id.,* §§ 6254–6254.30), but a public entity claiming an exemption must show that the

requested information falls within the exemption (*id.,* § 6255, subd. (a)).

[2] Government Code section 6255's subdivision (a) contains a "catchall exemption." (*Michaelis, Montanari & Johnson v. Superior Court* (2006) 38 Cal.4th 1065, 1071, 44 Cal.Rptr.3d 663, 136 P.3d 194.) It allows a public agency to "justify withholding any record by demonstrating that ... on the facts of the particular case the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record." (Gov.Code, § 6255, subd. (a).) As we have said in the past, "this provision contemplates a case-by-case balancing process, with the burden of proof on the proponent of nondisclosure to demonstrate a clear overbalance on the side of confidentiality." (*Michaelis, Montanari & Johnson, supra,* at p. 1071, 44 Cal.Rptr.3d 663, 136 P.3d 194.)

[3] Also relevant here is Government Code section 6254, subdivision (c), which ***61** protects "[p]ersonnel, medical, or similar files, the disclosure of which would constitute an unwarranted invasion of personal privacy." But the Union and the City place their greatest reliance on Government Code section 6254, subdivision (k). That provision protects "[r]ecords, the disclosure of which is exempted or prohibited pursuant to federal or state law, including, but not limited to, provisions of the Evidence Code relating to privilege." Succinctly put, subdivision (k) " 'incorporates other [disclosure] prohibitions established by law.' " (*Copley Press, Inc. v. Superior Court* (2006) 39 Cal.4th 1272, 1283, 48 Cal.Rptr.3d 183, 141 P.3d 288 (*Copley*), quoting *CBS, Inc. v. Block* (1986) 42 Cal.3d 646, 656, 230 Cal.Rptr. 362, 725 P.2d 470.) The "prohibitions" pertinent here are those set forth in a set of discovery statutes that the Legislature enacted in 1978 in response to our 1974 decision in *Pitchess v. Superior Court* (1974) 11 Cal.3d 531, 113 Cal.Rptr. 897, 522 P.2d 305 (*Pitchess*).

In *Pitchess,* a defendant charged with battery on four sheriff's deputies (Pen.Code, §§ 242, 243, subd. (b)) claimed he was defending himself against the deputies' use of excessive force. We held that defendants in similar situations had a right, albeit limited, to discover from a peace officer's employer the existence of any previous complaints about the officer's use of excessive force. (*Pitchess, supra,* 11 Cal.3d at pp. 537–538, 113 Cal.Rptr. 897, 522 P.2d 305.) In response to our ***68** decision, the Legislature enacted several statutes, which we hereafter refer to as the "*Pitchess* statutes" and which we summarize below.

Under the *Pitchess* statutes, a public entity that employs peace officers must investigate and retain citizen complaints of any officer misconduct, such as the use of excessive force. (Pen.Code, § 832.5.) Litigants, upon a showing of good cause, are given limited access to records of such complaints and investigations (Evid.Code, §§ 1043, 1045), but such records are otherwise "confidential" and may "not be disclosed" (Pen.Code, §§ 832.7, subd. (a), 832.8, subd. (e)). Also protected as "confidential" are "[p]eace officer ... personnel records" and "information obtained from these records." (*Id.,* § 832.7, subd. (a).) Such "personnel records" include an officer's personal and family information, medical history, election of benefits (*id.,* § 832.8, subds. (a), (b) & (c)), as well as matters related to the officer's "advancement, appraisal, or discipline" (*id.,* subd. (d)). In addition, confidentiality applies to any information that "would constitute an unwarranted invasion of [a peace officer's] personal privacy." (*Id.,* § 832.8, subd. (f).)

One other piece of legislation merits mention here. In 2004, California's voters passed an initiative measure that added to the state Constitution a provision directing the courts to broadly construe statutes that grant public access to government information and to narrowly construe statutes that limit such access. (Cal. Const., art. I, § 3, subd. (b)(2).) That provision, however, does not affect the construction of any statute "to the extent ... it protects [the] right to privacy, including any statutory procedures governing discovery or disclosure of information concerning the official performance or professional qualifications of a peace officer." (**465 Cal. Const., art. I, § 3, subd. (b)(3).) Thus, by its express terms, the constitutional provision excludes from the requirement of narrow construction those statutes that protect the privacy interests of peace officers, including Government Code section 6254's subdivision (c) and the *Pitchess* statutes, both of which are at issue here.

B. Decisional Law

Relevant here are two of this court's recent decisions, which considered the interplay ***62** between the *Pitchess* statutes and requests under the California Public Records Act for disclosure of peace officers' names.

In *Copley, supra,* 39 Cal.4th 1272, 48 Cal.Rptr.3d 183, 141 P.3d 288 (decided in 2006), a newspaper publisher sought access to a civil service commission's records of an administrative appeal brought by a county sheriff's deputy who had been terminated for disciplinary reasons. After the commission denied the request, the publisher unsuccessfully petitioned the superior court for a writ of mandate, seeking to compel disclosure. The publisher then appealed, and the Court of Appeal ***69** directed the civil service commission to give the publisher access to the records, and also to disclose the deputy's name. The Court of Appeal reasoned that because the *Pitchess* statutes define "personnel records" as any file maintained under the officer's name *by the officer's employing agency* (Pen.Code, § 832.8) and because the civil service commission was not the officer's employing agency, the civil service commission's records did not qualify as "personnel records" protected by the *Pitchess* statutes. At the request of two police unions that had intervened in the action, we granted review and, with one justice dissenting, reversed the Court of Appeal.

Copley held that the civil service commission's records of the deputy's appeal were confidential "personnel records" under the *Pitchess* statutes (Pen.Code, §§ 832.7, 832.8) and therefore exempt from disclosure. (*Copley, supra,* 39 Cal.4th at pp. 1286–1296, 48 Cal.Rptr.3d 183, 141 P.3d 288.) *Copley* explained that neither the language nor the legislative history of the *Pitchess* statutes suggested that a peace officer's privacy rights should have less protection simply because the officer's employer uses an outside agency like the civil service commission to conduct its administrative appeals. (*Copley,* at p. 1295, 48 Cal.Rptr.3d 183, 141 P.3d 288.) *Copley* also rejected the Court of Appeal's conclusion that *the name* of the officer who brought the appeal had to be disclosed, noting that the *Pitchess* statutes were "designed to protect, among other things, 'the identity of officers' subject to [citizen] complaints." (*Copley,* at p. 1297, 48 Cal.Rptr.3d 183, 141 P.3d 288, quoting Pen.Code, § 832.7, subd. (a); see *Copley,* at p. 1297, 48 Cal.Rptr.3d 183, 141 P.3d 288, quoting Pen.Code, § 832.7, subd. (c).)

Copley then discussed the Court of Appeal's reliance on an earlier appellate decision, *New York Times Co. v. Superior Court* (1997) 52 Cal.App.4th 97, 60 Cal.Rptr.2d 410 (*New York Times*), which broadly declared that the *Pitchess* statutes do not prevent disclosure of *the names* of peace officers. (*Copley, supra,* 39 Cal.4th at pp. 1297–1298, 48 Cal.Rptr.3d 183, 141 P.3d 288.) That categorical statement was made, we said, "[w]ithout any analysis," and was "simply incorrect, at least insofar as it applies to disciplinary matters like the one at issue [in *Copley*]." (*Id.* at p. 1298, 48 Cal.Rptr.3d 183, 141 P.3d 288.) We disapproved *New York Times* to the extent that decision conflicted with our analysis in *Copley.* (*Copley,* at p. 1298, 48 Cal.Rptr.3d 183, 141 P.3d 288.)

In 2007, just one year after *Copley, supra,* 39 Cal.4th 1272, 48 Cal.Rptr.3d 183, 141 P.3d 288, we again addressed the issue of a newspaper's request, made under the California Public Records Act, for disclosure of the names of certain peace officers. In *Commission on Peace Officer Standards and Training v. Superior Court* (2007) 42 Cal.4th 278, 64 Cal.Rptr.3d 661, 165 P.3d 462 (*Commission on Peace Officer Standards*), a newspaper sought certain information about peace officers hired statewide by various California public entities during a specified 10–year period. *****63** The information was contained in a database maintained by a public agency. When the agency denied the newspaper's request, the ***70** newspaper challenged that decision in superior court, which ordered disclosure ****466** of each officer's name, the appointing agency, the date of new appointment, and, if applicable, the date of termination. The Court of Appeal reversed, but a majority of this court disagreed with the Court of Appeal. (*Id.* at p. 303, 64 Cal.Rptr.3d 661, 165 P.3d 462.)

In *Commission on Peace Officer Standards,* the public agency that had compiled the peace officer database did not employ any of the peace officers, and therefore the entries in its database were not "personnel records" under a literal reading of the *Pitchess* statutes (Pen.Code, § 832.8 [limiting personnel records to records held in files maintained by an individual's employer]). Nonetheless, a majority of this court concluded that the information in the database would fall within the protections afforded personnel records if the information was "obtained from" personnel records maintained by the employing agencies of the peace officers in question. (*Commission on Peace Officer Standards, supra,* 42 Cal.4th at p. 289, 64 Cal.Rptr.3d 661, 165 P.3d 462.) The majority further concluded, however, "that peace officer personnel records include only the types of information enumerated in [Penal Code] section 832.8" (*id.* at p. 293, 64 Cal.Rptr.3d 661, 165 P.3d 462), and because the specific information the trial court ordered disclosed (the names of the officers,

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their employing agencies, and their employment dates) did not fall into any of the enumerated categories, it was not information obtained from protected personnel records (*id.* at pp. 294–299, 64 Cal.Rptr.3d 661, 165 P.3d 462), and therefore it was subject to disclosure.

Commission on Peace Officer Standards next held that Government Code section 6254's subdivision (c), which is part of the California Public Records Act, also did not preclude disclosure of the information covered by the superior court's order. (See *Commission on Peace Officer Standards, supra,* 42 Cal.4th at p. 303, 64 Cal.Rptr.3d 661, 165 P.3d 462.) As noted (see 172 Cal.Rptr.3d at p. 60, 325 P.3d at p. 464, *ante*), that statutory provision authorizes denial of a public records request when the information sought consists of "[p]ersonnel, medical, or similar files, the disclosure of which would constitute an unwarranted invasion of personal privacy." (Gov.Code, § 6254, subd. (c).) *Commission on Peace Officer Standards* assumed for purposes of its analysis that the records at issue "may be characterized as '[p]ersonnel ... or similar files.' " (*Commission on Peace Officer Standards,* at p. 299, 64 Cal.Rptr.3d 661, 165 P.3d 462.) But it noted that the exemption set forth in section 6254's subdivision (c) requires a balancing of "the privacy interests of peace officers in the information at issue against the public interest in disclosure," and it further noted that the party opposing disclosure "has the burden" of showing that the records at issue fall within the exemption—a showing the agency failed to make in *Commission on Peace Officer Standards.* (*Commission on Peace Officer Standards,* at p. 299, 64 Cal.Rptr.3d 661, 165 P.3d 462.)

Against this background of relevant statutes and court decisions, we now consider the disclosure request of the Times.

*71 III

[4] The Times, citing the California Public Records Act, seeks disclosure of the names of the two Long Beach police officers involved in the December 12, 2010, fatal shooting of Zerby, as well as the ***64** names of any Long Beach officers involved in shootings occurring between January 1, 2005, and December 11, 2010. The Union and the City oppose disclosure. They rely largely on the confidentiality protections afforded peace officers under the *Pitchess* statutes, focusing in particular on Penal Code section 832.7's subdivision (a) (protecting from disclosure a peace officer's "personnel records") and Penal Code section 832.8's subdivision (d) (defining "personnel records" as including records of employee "appraisal[ ] or discipline").

The Union and the City also attach significance to the italicized language in this quote from *Commission on Peace Officer Standards:* "[T]he legislative concern [in adopting sections 832.7 and 832.8] appears to have been with *linking a named officer to the private or sensitive information listed in section 832.8.* ... It seems unlikely that the Legislature contemplated that the identification of an individual as a peace officer, *unconnected* ***467** *to any of the information it defined as part of a personnel record,* would be rendered confidential by section 832.8." (*Commission on Peace Officer Standards, supra,* 42 Cal.4th at p. 295, 64 Cal.Rptr.3d 661, 165 P.3d 462, italics added.) The Union and the City contend that disclosing the names of officers involved in on-duty shootings necessarily *links* the named officers to private or sensitive information in their personnel files, information made confidential under Penal Code section 832.7's subdivision (a). The Union and the City reason that because every on-duty shooting is routinely investigated by the employing agency, the details of every such incident (including the names of the officers involved) are "records relating to" officer "appraisal[ ] or discipline" (Pen.Code, § 832.8, subd. (d)), which, by definition, are confidential "personnel records" (*id.,* § 832.8). We are not persuaded.

Although the *Pitchess* statutes limit public access to personnel records (Pen.Code, § 832.7, subd. (a)), including officer names if they are *linked* to information in personnel records (*Commission on Peace Officer Standards, supra,* 42 Cal.4th at p. 295, 64 Cal.Rptr.3d 661, 165 P.3d 462), many records routinely maintained by law enforcement agencies are not personnel records. For example, the information contained in the initial incident reports of an on-duty shooting are typically not "personnel records" as that term is defined in Penal Code section 832.8. It may be true that such shootings are routinely investigated by the employing agency, resulting eventually in some sort of officer appraisal or discipline. But only the records *generated* in connection with that appraisal or discipline would come within the statutory definition of personnel records (Pen.Code, § 832.8, subd. (d)). We do not read the phrase "records relating to ... [¶] ... *72 [¶] ... [e]mployee ... appraisal[ ] or discipline" (*ibid.*) so broadly as to include every record that might be *considered* for

purposes of an officer's appraisal or discipline, for such a broad reading of the statute would sweep virtually all law enforcement records into the protected category of "personnel records" (*id.,* § 832.8).

Government Code section 6254's subdivision (f) lends some support to our conclusion. Under that statute, when a shooting by a peace officer occurs during an arrest (Gov.Code, § 6254, subd. (f)(1)) or in the course of responding to a complaint or request for assistance (*id.,* § 6254, subd. (f)(2)), and when the officer's name is recorded as one of the "factual circumstances" of the incident, disclosure of the officer's name is generally required. It thus appears that the Legislature draws a distinction between (1) records of factual information about an incident (which generally must be disclosed) and (2) records generated as part of an internal investigation ***65** of an officer in connection with the incident (which generally are confidential). We therefore agree with this point made in a 2008 opinion by the California Attorney General: "Generally speaking, a response to a request just for the names of officers involved in a particular incident may be provided without revealing any investigatory or disciplinary matter that may have arisen out of the incident. Disclosure would merely communicate a statement of fact that the named officers were involved in the incident. It would not imply any judgment that the actions taken were inappropriate or even suspect." (91 Ops.Cal.Atty.Gen. 11, 16–17 (2008), fn. omitted.) An employing agency is, of course, free to emphasize, when complying with a California Public Records Act request, that its disclosure of the names of officers involved in an incident does not imply any wrongdoing by those officers.

Significantly, the *Pitchess* statutes are silent as to whether the names of officers involved in shootings are protected "personnel records." (Pen.Code, § 832.8.) That silence is important because, as this court observed in *Commission on Peace Officer Standards,* the personnel records exemption is limited to the categories of information that are expressly "enumerated" in Penal Code section 832.8. (*Commission on Peace Officer Standards, supra,* 42 Cal.4th at p. 293, 64 Cal.Rptr.3d 661, 165 P.3d 462.) That the Legislature did not intend to protect peace officers' identities can also be inferred from the Legislature's enactment of Penal Code section 830.10, which requires uniformed officers to display their name or identification **468 number. That statute reflects a legislative policy that, generally, the public has a right to know the identity of an officer involved in an on-duty shooting.

Misplaced is the reliance by the Union and the City on this court's decision in *Copley, supra,* 39 Cal.4th 1272, 48 Cal.Rptr.3d 183, 141 P.3d 288. There, as we noted earlier, a newspaper publisher sought records of an administrative appeal brought by a sheriff's *73 deputy who had been terminated. This court concluded that the records (including the deputy's name) were confidential personnel records under the *Pitchess* statutes. (*Copley,* at pp. 1297–1298, 48 Cal.Rptr.3d 183, 141 P.3d 288.) Later, in *Commission on Peace Officer Standards,* this court emphasized that the records requested in *Copley* would have "linked" the deputy's name to "private or sensitive" personnel matters, thus explaining why the name at issue in *Copley* was protected. (*Commission on Peace Officer Standards, supra,* 42 Cal.4th at p. 295, 64 Cal.Rptr.3d 661, 165 P.3d 462; see *id.* at pp. 298–299, 64 Cal.Rptr.3d 661, 165 P.3d 462.) Here, by contrast, disclosing the names of officers involved in various shootings would not imply that those shootings resulted in disciplinary action against the officers, and it would not link those names to any confidential personnel matters or other protected information.

In arguing here against disclosure of the officers' names, the Union and the City note this court's disapproval in *Copley, supra,* 39 Cal.4th at page 1298, 48 Cal.Rptr.3d 183, 141 P.3d 288, of the Court of Appeal's statement in *New York Times, supra,* 52 Cal.App.4th at page 101, 60 Cal.Rptr.2d 410, that " 'an individual's name is not exempt from disclosure' " under the *Pitchess* statutes. But, as we explained in *Commission on Peace Officer Standards, supra,* 42 Cal.4th at page 298, 64 Cal.Rptr.3d 661, 165 P.3d 462, this court disapproved the statement from *New York Times* only " 'insofar as it applie [d] to disciplinary matters like the one at issue' " in *Copley.* (See *Copley,* at p. 1298, 48 Cal.Rptr.3d 183, 141 P.3d 288.) The records sought in *Copley* linked the officer's name, not just to an on-duty shooting, but to a ***66** confidential disciplinary action involving the officer, and therefore they were exempt from disclosure. (See *Commission on Peace Officer Standards, supra,* 42 Cal.4th at pp. 295, 298–299, 64 Cal.Rptr.3d 661, 165 P.3d 462.) Thus, *Copley*'s disapproval of the statement from *New York Times* did not alter the latter case's core holding, generally permitting disclosure of the names of peace officers involved in on-duty shootings.

(See 91 Ops.Cal.Atty.Gen. 11, 13–15 (2008) [discussing *Copley*'s effect on *New York Times*].)

[5] Nor does Government Code section 6254's subdivision (c), which is part of the California Public Records Act, help the Union and the City in their effort to prevent disclosure of the names of officers involved in shootings. As noted (see 172 Cal.Rptr.3d at p. 60, 325 P.3d at p. 464, *ante*), that provision exempts from disclosure "[p]ersonnel ... or similar files" if disclosure "would constitute an unwarranted invasion of personal privacy." (Gov.Code, § 6254, subd. (c).) A serious question arises as to whether the names of peace officers involved in particular law enforcement incidents can be characterized as "[p]ersonnel ... or similar files" (*ibid.*). Moreover, when it comes to the disclosure of a peace officer's name, the public's substantial interest in the conduct of its peace officers outweighs, in most cases, the officer's personal privacy interest. As we noted in *Commission on Peace Officer Standards:* "Peace officers 'hold one of the most powerful positions in our society; our dependence on them is high and the potential for abuse of power is far from insignificant.' ***74** *City of Hemet v. Superior Court* (1995) 37 Cal.App.4th 1411, 1428 [44 Cal.Rptr.2d 532].) A police officer 'possesses both the authority and the ability to exercise force. Misuse of [this] authority can result in significant deprivation of constitutional rights and personal freedoms, not to mention bodily injury and financial loss.' (*Gray v. Udevitz* (10th Cir.1981) 656 F.2d 588, 591.)" (*Commission on Peace Officer Standards, supra,* 42 Cal.4th at pp. 299–300, 64 Cal.Rptr.3d 661, 165 P.3d 462.) Thus, the public's significant interest in the conduct of its peace officers "diminishes and counterbalances" an officer's privacy interest in keeping his or her name confidential. (*Id.* at p. 299, 64 Cal.Rptr.3d 661, 165 P.3d 462.)

****469** In a case such as this one, which concerns officer-involved shootings, the public's interest in the conduct of its peace officers is particularly great because such shootings often lead to severe injury or death. Here, therefore, in weighing the competing interests, the balance tips strongly in favor of identity disclosure and against the personal privacy interests of the officers involved. Of course, if it is essential to protect an officer's anonymity for safety reasons or for reasons peculiar to the officer's duties —as, for example, in the case of an undercover officer —then the public interest in disclosure of the officer's name may need to give way. (See *International Federation of Professional and Technical Engineers, Local 21, AFL–CIO v. Superior Court* (2007) 42 Cal.4th 319, 337, 64 Cal.Rptr.3d 693, 165 P.3d 488.) That determination, however, would need to be based on a particularized showing, which was not made here.

We next consider the City's assertion that Government Code section 6254's subdivision (f) permits it to withhold the names of officers involved in on-duty shootings. That provision exempts from disclosure "[r]ecords ... of investigations conducted by ... any state or local police agency." (*Ibid.*) The Times here is not seeking the records of any administrative or criminal investigation, so that exemption is inapplicable.

*****67** **[6]** Finally, we consider the catchall exemption in Government Code section 6255's subdivision (a), which allows a public agency to withhold any public record if the agency shows that "on the facts of the particular case the public interest served by not disclosing the record clearly outweighs the public interest served by disclosure of the record." The catchall exemption sets forth a balancing test, and we have already concluded that, generally, the balance of interests favors disclosing the names of peace officers involved in on-duty shootings. (See 172 Cal.Rptr.3d at pp. 65–66, 325 P.3d at pp. 467–468, *ante.*) Vague safety concerns that apply to all officers involved in shootings are insufficient to tip the balance against disclosure of officer names. As we have said in the past, "[a] mere assertion of possible endangerment does not 'clearly outweigh' the public interest in access to ... records." (*CBS, Inc. v. Block, supra,* 42 Cal.3d at p. 652, 230 Cal.Rptr. 362, 725 P.2d 470.)

The Union and the City assert that disclosing the names of peace officers involved in shootings could lead to harassment of those officers and their ***75** families. In rejecting that argument, the trial court found that the Union and the City had offered "no evidence" of a "specific safety concern regarding any particular officer." We agree. The declaration by Long Beach Police Lieutenant Cox (submitted by the City) described the possibility of gang retaliation against officers involved in shooting gang members, but those concerns were general in nature. The December 2010 Zerby shooting did not involve a gang member, and the Union and the City did not identify other shootings that did involve a gang member. The Cox declaration also mentioned two safety bulletins warning of "potential retaliation/threats" against

officers involved in shootings, and it described graffiti that read "Strike Kill a Cop," but those vague concerns do not establish any specific danger to the officers involved in the Zerby shooting or any shooting that occurred in the six years before the Zerby shooting (see the Times's public records request, quoted at 172 Cal.Rptr.3d at p. 58, 325 P.3d at p. 462, *ante*).

We do not hold that the names of officers involved in shootings have to be disclosed in every case, regardless of the circumstances. We merely conclude, as did the trial court and the Court of Appeal, that the particularized showing necessary to outweigh the public's interest in disclosure was not made *here,* where the Union and the City relied on only a few vaguely worded declarations making only general assertions about the risks officers face after a shooting. The public records request by the Times is broadly worded and covers a wide variety of incidents. Thus, the Union and the City sought a blanket rule preventing the disclosure of officer names *every time* an officer is involved in a shooting. Such a rule would even prevent disclosure of the name of an officer who acted in a heroic manner that was unlikely to provoke retaliation of any kind, in which case officer ****470** safety would not be an issue. We reject that blanket rule.

The trial court's denial of injunctive relief was without prejudice to any later evidentiary showing that disclosing a particular officer's name would compromise that officer's safety or the safety of the officer's family. That ruling permits further litigation by the Union, and it reflects the trial court's recognition, which we share, that the public's interest in access to public records is not absolute and must be weighed against the countervailing privacy and safety interests of peace officers. Understandable are the general safety concerns of officers who fear retaliation from angry members of the community *****68** after an officer-involved shooting, especially when the shooting results in the death of an unarmed person. But the Legislature, whose laws we must construe, has not gone so far as to protect the names of all officers involved in such shootings. That the Legislature generally considers it important for the public to know the identities of the officers serving the community is reflected in the statutory provision requiring a uniformed officer to display either a name or an identification number (Pen.Code, § 830.10).

***76 DISPOSITION**

We affirm the judgment of the Court of Appeal, which upheld the trial court's denial of the Union's requested injunctive relief.

WE CONCUR: CANTIL–SAKAUYE, C.J., BAXTER, WERDEGAR, CORRIGAN, LIU, JJ.

Dissenting Opinion by CHIN, J.

I disagree with the majority's conclusion that the City of Long Beach (the City) and the Long Beach Police Officers Association (the Union) have failed to show that the information the Los Angeles Times (the Times) has requested—the names of the officers "involved in" the December 12, 2010, shooting of Douglas Zerby and the names of all police officers "involved in" shootings from January 1, 2005, until December 11, 2010—is exempt from disclosure under the California Public Records Act (CPRA) (Gov.Code, § 6250 et seq.).[1] In my view, the evidence in the record of the safety threat faced by police officers identified as having been involved in a shooting establishes that the requested information is exempt from disclosure under section 6254, subdivision (c), which provides that the CPRA does not require disclosure of "[p]ersonnel, medical, or similar files, the disclosure of which would constitute an unwarranted invasion of personal privacy." I therefore dissent.

In relying on this section, the Union acknowledges that the majority in *Commission on Peace Officer Standards and Training v. Superior Court* (2007) 42 Cal.4th 278, 64 Cal.Rptr.3d 661, 165 P.3d 462 (*Commission on Peace Officer Standards*) held that "the privacy and safety interests of peace officers" as a group regarding the mere fact of their employment "do not outweigh the public's interest in the disclosure of [that] information." (*Commission on Peace Officer Standards, supra,* 42 Cal.4th at p. 303, 64 Cal.Rptr.3d 661, 165 P.3d 462.) The Union argues, however, that the "heightened safety concerns of officers who have been involved in shootings" warrant striking a different "balance" with regard to this "subgroup." In support of its argument, the Union relies on the declaration of Long Beach Police Lieutenant Lloyd Cox (Cox declaration), which states in relevant part: (1) "A number of officer involved shootings

involve gang members or violent criminals"; (2) "When an officer is involved in a shooting with a gang member, it is not uncommon for the gang to retaliate against law enforcement officers"; (3) "Since late 2007, the Long Beach Police Department has issued eight Officer Safety Bulletins to the department about potential retaliation/ threats against officers, two of which were directly related to shootings involving police officers. As recently as January 10, 2011, the department was notified of graffiti at 5100 Appian Way ***77** that was approximately 4 feet high and 6 inches long which read 'Strike Kill a Cop' "; and (4) "Today, in the age of the internet, knowing an individual's name can be the gateway to a world of information. Public documents *****69** are readily ****471** accessible on line and can provide anyone with the home address of an individual, including a police officer. The address of a police officer in the hands of a gang member, violent offender, or angry friend, relative, or associate of a person who was shot by a police officer is of great concern for the personal safety of both the officer and their [*sic*] family. Therefore the Long Beach Police Department insists on protecting the identity of its officers, when those officers are involved in critical incidents, including shootings, in order to ensure their safety and the safety of their families."

I agree with the Union's argument. As I explained in *Commission on Peace Officer Standards,* "in 1990, the Legislature amended subdivision (a) of [Penal Code] section 832.8 by adding [officers'] 'home addresses' to the list of examples of confidential '[p]ersonal data.' (Stats.1990, ch. 264, § 1, p. 1535.) According to the amendment's legislative history, one of the Legislature's purposes in adding 'home addresses' to the list was to protect officers and their families. (Assem. Com. on Public Safety, Analysis of Sen. Bill 1985 (1989–1990 Reg. Sess.) as amended May, 16, 1990, p. 2.) Given that publicly available databases on the Internet make it easy to link a name to an address, the release of an officer's name would not seem to pose much, if any, less of a safety risk than would disclosing an officer's home address. (See *Frank v. City of Akron* (6th Cir.2002) 290 F.3d 813, 819 ['Most individuals' addresses ... are readily available on the Internet'].) ... [I]n light of the accessibility of information through the Internet, it would be entirely 'feasible' for someone hostile toward the police to use the list of names to locate peace officers' addresses in order to 'harass them' or their families. [Citation.] Moreover, in light of the Legislature's acknowledgment of the dangers faced by officers and their families, ... we [cannot] simply dismiss this threat as being 'purely speculative.' (See *King County v. Sheehan* [(2002) 114 Wash.App. 325, 340, 57 P.3d 307] [it is 'naïve ... to believe that police officers who are identified on anti-police web sites ... by name and home address ... could not thereby be placed in danger or subjected to harassment'].)" (*Commission on Peace Officer Standards, supra,* 42 Cal.4th at p. 317, 64 Cal.Rptr.3d 661, 165 P.3d 462 (dis. opn. of Chin, J.).) The evidence in the record here amply supports this analysis.

Nothing in the majority's brief discussion of section 6254, subdivision (c), convinces me otherwise. The majority first asserts that there is a "serious question" as "to whether the names of peace officers involved in particular law enforcement incidents can be characterized as '[p]ersonnel ... or similar files' " within the meaning of section 6254, subdivision (c). (Maj. opn., *ante,* 172 Cal.Rptr.3d at p. 65, 325 P.3d at p. 467.) However, for reasons I have explained in a previous case, I have no trouble concluding that the names of officers who have been involved in a ***78** shooting constitute "personnel ... or similar files" under section 6254, subdivision (c). (See *International Federation of Professional and Technical Engineers, Local 21, AFL–CIO v. Superior Court* (2007) 42 Cal.4th 319, 350–351, 64 Cal.Rptr.3d 693, 165 P.3d 488 (conc. & dis. opn. of Chin, J.) (*International Federation*).)

The majority then moves on to its primary focus: the public's interest. Relying on *Commission on Peace Officer Standards,* the majority first identifies the public's interest generally in "the conduct of its peace officers"—specifically, the " '[m]isuse' " of their authority—and asserts that, "when it comes to the disclosure of a peace officer's name," this interest "outweighs, in most cases, the officer's personal privacy interest." (Maj. opn., *****70** *ante,* 172 Cal.Rptr.3d at p. 66, 325 P.3d at p. 468.) The majority next asserts that this general public interest "is particularly great" in connection with "officer-involved shootings" because "such shootings often lead to severe injury or death." (Maj. opn., *ante,* at p. 66, 325 P.3d at p. 468.) This heightened public interest, the majority states, "tips" the balance here "strongly in favor of identity disclosure." (*Id.* at p. 66, 325 P.3d at p. 469.)

The majority's discussion is unpersuasive for several reasons. First, the majority fails to explain how disclosing the name of an officer who has in any way been "involved in ****472** officer involved shootings"—which is what the

Times seeks—provides any information about whether the involved officers " ' [m]isuse[d]' " their authority. (Maj. opn., *ante,* 172 Cal.Rptr.3d at p. 65, 325 P.3d at p. 467.) Thus, merely knowing which officers were "involved in officer involved shootings" does little, if anything, to advance the public's interest in "the conduct of its peace officers." (Maj. opn., *ante,* at p. 66, 325 P.3d at p. 468.)

Second, the majority's assessment of the public's interest is inconsistent with the Legislature's and the voters' view of that interest. Through the *Pitchess* statutes (see maj. opn., *ante,* 172 Cal.Rptr.3d at pp. 60–61, 325 P.3d at pp. 464–465), the Legislature has precluded the general public from obtaining "[p]eace officer ... personnel records" or "information obtained from these records." (Pen.Code, § 832.7, subd. (a).) It has specified that this restriction protects records "relating to" (1) an officer's "advancement, appraisal, or discipline" (*id.,* § 832.8, subd. (d)), and (2) "[c]omplaints, or investigations of complaints, concerning an event or transaction in which [an officer] participated, or which he or she perceived, and pertaining to the manner in which he or she performed his or her duties" (*id.,* § 832.8, subd. (e)). It has authorized law enforcement agencies to "disseminate data regarding the number, type, or disposition of complaints ... made against [their] officers" *only* "if that information is in a form which does not identify the individuals involved." (*Id.,* § 832.7, subd. (c).) These provisions clearly express *the Legislature's* view regarding the public's interest in discovering whether particular officers have misused their power or even have been the subject of complaints about their conduct. ***79** The voters have ratified the Legislature's view by passing a constitutional provision that expressly preserves "statutory procedures governing discovery or disclosure of information concerning the official performance or professional qualifications of a peace officer." (Cal. Const., art. I, § 3, subd. (b)(3).) The majority improperly ignores these expressions of policy by the Legislature and the voters, and improperly substitutes its own view of policy. As a court, we have neither prerogative nor power "to substitute our public policy judgment" for that of the Legislature and the voters. (*Thomas v. City of Richmond* (1995) 9 Cal.4th 1154, 1165, 40 Cal.Rptr.2d 442, 892 P.2d 1185.)

The majority errs in asserting that Penal Code section 830.10 "reflects a legislative policy that, generally, the public has a right to know the identity of an officer involved in an on-duty shooting." (Maj. opn., *ante,* 172 Cal.Rptr.3d at p. 65, 325 P.3d at p. 468.) That section provides: "Any uniformed peace officer shall wear a badge, nameplate, or other device which bears clearly on its face the identification number or name of the officer." (Pen.Code, § 830.10.) On its face, the section applies only to "uniformed" officers. (*Ibid.*) Thus, to the extent it has any relevance to officers who are *not* in uniform, it indicates a legislative intent to protect their identities. Even as to uniformed officers, *****71** it fails to support the majority's broad conclusion that the public, "generally," has a right to know the identity of officers involved in shootings. (Maj. opn., *ante,* at p. 64, 325 P.3d at p. 467.) Under the section, police departments may choose not to require their uniformed officers to display their names, and may instead require them only to display their "identification number[s]." (Pen.Code, § 830.10.) Even were the statute to require officers to display their names, a statute affording the immediate participants in a police encounter access to the officers' names does not reflect a far broader legislative policy that, "generally, the public has a right to know the identity of an officer involved in an on-duty shooting." (Maj. opn., *ante,* at p. 65, 325 P.3d at p. 468.) This conclusion is obvious from the fact that, as noted above, the *Pitchess* statutes allow law enforcement agencies to "disseminate data regarding the number, type, or disposition of complaints ... made against [their] officers" *only* "if that information is in a form which does not identify the individuals involved." (Pen.Code, § 832.7, subd. (c).) In other words, the Legislature has precluded release of identifying information *generally to the public* even though the names of officers against whom complaints have been made are known to those who have filed complaints. As the ****473** majority recognized in *Commission on Peace Officer Standards,* "the mere fact that officers' names" may be displayed on their uniforms does not mean "that the information cannot be considered personal or private. (See *Department of Defense v. FLRA* (1994) 510 U.S. 487, 500, 114 S.Ct. 1006, 127 L.Ed.2d 325 ... ['An individual's [privacy] interest in controlling the dissemination of information regarding personal matters does not dissolve ***80** simply because that information may be available to the public in some form'].)" [2] (*Commission on Peace Officer Standards, supra,* 42 Cal.4th at p. 296, fn. 5, 64 Cal.Rptr.3d 661, 165 P.3d 462.)

Nor do I agree with the majority that, under section 6254, subdivision (f), "when a shooting by a peace

officer occurs during an arrest [citation] or in the course of responding to a complaint or request for assistance [citation], and when the officer's name is recorded as one of the factual circumstances of the incident, disclosure of the officer's name is generally required." (Maj. opn., *ante,* 172 Cal.Rptr.3d at p. 64, 325 P.3d at p. 467.) Section 6254, subdivision (f), generally exempts from disclosure under the CPRA "[r]ecords of complaints to, or investigations conducted by, ... any state or local police agency." As here relevant, it further provides that, "[n]otwithstanding any other provision of this subdivision," a law enforcement agency "shall" disclose the following: (1) "the factual circumstances surrounding the arrest" of each person the agency arrests (§ 6254, subd. (f)(1)); and (2) the "nature of the response" to all complaints or requests for assistance the agency receives, "including, *****72** to the extent the information regarding crimes alleged or committed or any other incident investigated is recorded, ... the factual circumstances surrounding the crime or incident" (*id.,* subd. (f)(2)). Where one of the specified incidents involves a shooting, it is not at all clear that the "factual circumstances surrounding" the incident (*id.,* subd. (f)(1), (2)) include the names of officers involved in the shooting. The majority cites, and I have found, no case supporting that view. Moreover, the language stating that these disclosure provisions apply "[n]otwithstanding any other provision of *this subdivision* " (*id.,* subd. (f), italics added) indicates that the section's disclosure requirement does not override the confidentiality provisions found in other statutes. Our courts of appeal have so construed the statute. (*County of Los Angeles v. Superior Court* (1993) 18 Cal.App.4th 588, 600, 22 Cal.Rptr.2d 409 ["we cannot construe section 6254, subdivision (f), to require" disclosure of "law enforcement information" the *Pitchess* statutes make confidential].) Finally, the statute itself authorizes nondisclosure "to the extent that disclosure of a particular item of information would endanger the safety of a person involved in an investigation or would endanger the successful completion of the ***81** investigation or a related investigation." (§ 6254, subd. (f).) Because, in my view, this would include the names of officers involved in shootings, I do not agree that, even under the circumstances the majority posits, section 6254, subdivision (f), "generally require[s]" disclosure of the information the Times seeks. [3] (Maj. opn., *ante,* at p. 64, 325 P.3d at p. 466.)

****474** The majority also makes several errors in evaluating the other side of the balance: the interests of the officers in nondisclosure. Although relying principally on a heightened public interest in officer-involved shootings, the majority fails to consider or even acknowledge *the officer's* heightened privacy and safety interests in such cases. In this regard, *Commission on Peace Officer Standards,* on which the majority principally relies (maj. opn., *ante,* 172 Cal.Rptr.3d at pp. 65–66, 325 P.3d at pp. 467–468), actually supports the Union. There, in holding that "the typical peace officer has [no] more than an insubstantial privacy interest in the fact of his or her employment as an officer" (*Commission on Peace Officer Standards, supra,* 42 Cal.4th at p. 300, 64 Cal.Rptr.3d 661, 165 P.3d 462), the majority reasoned that the fact of employment is "innocuous information" (*id.* at p. 302, 64 Cal.Rptr.3d 661, 165 P.3d 462) because "it would not reveal [the *****73** officer's] involvement *in any particular case* " (*id.* at p. 302, fn. 12, 64 Cal.Rptr.3d 661, 165 P.3d 462, italics added). In this regard, the majority reasoned, disclosure of basic employment information is different from the disclosure sought in *Stone v. F.B.I.* (D.D.C.1990) 727 F.Supp. 662 (*Stone*): the names of FBI agents "who participated in the investigation of the assassination of Robert F. Kennedy." (*Commission on Peace Officer Standards, supra,* 42 Cal.4th at p. 302, fn. 12, 64 Cal.Rptr.3d 661, 165 P.3d 462.) In *Stone,* " '[w]hat could reasonably be expected to constitute an unwarranted invasion of an agent's privacy is not that he or she is revealed as an FBI agent but that he or she is named as an FBI agent *who participated in the RFK investigation.*' [Citation.]" (*Commission on Peace Officer Standards, supra,* at p. 302, fn. 12, 64 Cal.Rptr.3d 661, 165 P.3d 462.) The " 'concern is not with the identifying information *per se,* but with the connection between such information and some other detail—a statement, an event, or otherwise—which the individual would not wish to be publicly disclosed.' " (*Ibid.,* quoting *Halloran v. Veterans Admin.* (5th Cir.1989) 874 F.2d 315, 321.) Here, the information the ***82** Times seeks *would* reveal the participation of the named officers in "particular case[s]" and *would* reveal their connection to an event —a shooting—they may " 'not wish to be publicly disclosed.' " (*Commission on Peace Officer Standards, supra,* at p. 302, fn. 12, 64 Cal.Rptr.3d 661, 165 P.3d 462.) As the majority opinion in *Commission on Peace Officer Standards* establishes, the officers therefore have a heightened privacy interest in nondisclosure. Moreover, the potentially incendiary nature of the information the Times seeks—an officer's involvement in a shooting—further heightens an officer's already elevated privacy

interest in not being linked to "particular case[s]." (*Ibid.*) The majority errs in failing even to acknowledge this heightened interest.

Finally, the majority's conclusion that the Union's claim under section 6254, subdivision (c), fails for lack of a "particularized showing" regarding the need for confidentiality (maj. opn., *ante,* 172 Cal.Rptr.3d at p. 65, 325 P.3d at p. 468) is both erroneous and inconsistent with our prior decisions. The majority acknowledges both the existence and validity of the "safety concerns of officers who fear retaliation from angry members of the community after an officer-involved shooting." (Maj. opn., *ante,* at p. 66, 325 P.3d at p. 469.) It also acknowledges that *the record contains evidence* of " 'potential retaliation/threats' against officers involved in shootings." (Maj. opn., *ante,* at p. 67, 325 P.3d at p. 469.) However, the majority finds this evidence too "vague" and insists that more is required; as to each officer whose name is to be withheld, there must be evidence to "establish" a "specific danger" to the officer or to the members of the officer's family. (Maj. opn., *ante,* at p. 67, 325 P.3d at p. 469.)

****475** The specificity of proof the majority demands is inconsistent with our decision in *Times Mirror Co. v. Superior Court* (1991) 53 Cal.3d 1325, 283 Cal.Rptr. 893, 813 P.2d 240 (*Times Mirror*). There, we held that, because of safety concerns, the Governor of California had properly refused to disclose his daily, weekly, and monthly appointment calendars and schedules. (*Id.* at pp. 1329, 1346–1347, 283 Cal.Rptr. 893, 813 P.2d 240.) The only evidence supporting our conclusion was the declaration of the Governor's security director, which stated in the most general terms that disclosing this information " 'would seriously impair [his] ... ability to assure the Governor's security, and would constitute *a potential threat* to the Governor's safety, because the information ... will enable the *****74** reader to know in advance and with relative precision when and where the Governor may be found, those persons who will be with him, and when he will be alone.' " (*Id.* at p. 1346, 283 Cal.Rptr. 893, 813 P.2d 240, italics added.) Based on this evidence of a " 'potential threat to the Governor's safety' " (*ibid.*), and without requiring evidence of a particular or "specific" threat (maj. opn., *ante,* 172 Cal.Rptr.3d at p. 66, 325 P.3d at p. 468), we concluded that, even as to "outdated calendars and schedules," nondisclosure was justified because "it is plausible to believe that an individual intent on doing harm [to the Governor] could use such information to discern activity patterns of the Governor and identify areas of particular vulnerability." (*Times Mirror, supra,* at p. 1346, 283 Cal.Rptr. 893, 813 P.2d 240.) Here, based on ***83** the Cox declaration, it is plausible to believe there are individuals, intent on doing harm to police officers in retaliation for their involvement in a shooting, who could use the requested information to exact revenge on the officers or members of their families. The "showing" in this case regarding safety concerns is certainly no more "vague," and is at least as, if not more, "particularized" (maj. opn., *ante,* at p. 66, 325 P.3d at p. 469), than the showing we found sufficient in *Times Mirror.* [4]

The majority does not contend otherwise or explain why *Times Mirror* is inapplicable. Instead, in applying a different and far stricter standard, it simply ignores *Times Mirror.* It fails to explain why police officers and their family members are entitled to less protection than the Governor. Surely, their lives are not worth less. Nor is it less "plausible to believe" there are "individual[s] intent on doing harm" to police officers involved in shootings than it is to believe there are "individual[s] intent on doing harm" to the Governor. (*Times Mirror, supra,* 53 Cal.3d at p. 1346, 283 Cal.Rptr. 893, 813 P.2d 240.) On the contrary, as already noted, the majority acknowledges both the existence and validity of the "safety concerns of officers who fear retaliation from angry members of the community after an officer-involved shooting." (Maj. opn., *ante,* 172 Cal.Rptr.3d at p. 66, 325 P.3d at p. 469.)

Contrary to the majority's suggestion (maj. opn., *ante,* 172 Cal.Rptr.3d at pp. 65–66, 325 P.3d at pp. 467–468), *Commission on Peace Officer Standards* and *International Federation* are consistent with, and supportive of, this analysis. In neither case was there any *evidence* submitted regarding the alleged safety concerns, a circumstance the court stressed in refusing to apply a disclosure exemption. (*Commission on Peace Officer Standards, supra,* 42 Cal.4th at p. 302, 64 Cal.Rptr.3d 661, 165 P.3d 462; *International Federation, supra,* 42 Cal.4th at pp. 337–338, 64 Cal.Rptr.3d 693, 165 P.3d 488.) Notably, after stating that " '[a] mere assertion of possible endangerment' is insufficient to justify nondisclosure," the majority in *Commission on Peace Officer Standards* cited *Times Mirror* as a case in which *****75** disclosure ****476** *was* justified because *the evidence*—the "declaration of [the] Governor's security director"—"supported [the]

conclusion that release of his schedules would present a potential security threat." (*Commission on Peace Officer Standards, supra,* at p. 302, 64 Cal.Rptr.3d 661, 165 P.3d 462.) As earlier explained, here, even more than in *Times Mirror, evidence* regarding the dangers of disclosure was submitted. Moreover, in *Commission on Peace Officer Standards,* the majority held that, on remand, nondisclosure as to officers in certain "categories" could be justified "because the safety or ***84** efficacy of" officers in those categories "would be jeopardized by disclosure." (*Commission on Peace Officer Standards, supra,* 42 Cal.4th at p. 284, 64 Cal.Rptr.3d 661, 165 P.3d 462.) The majority in *Commission on Peace Officer Standards* identified one such category: officers "operating undercover." (*Id.* at p. 301, 64 Cal.Rptr.3d 661, 165 P.3d 462.) The Times's broad request for the names of all officers "involved in" shootings from January 1, 2005, until December 11, 2010, surely includes such officers. Moreover, the evidence in the record here establishes another category of officers whose safety would be jeopardized by disclosure: those who have been involved in a shooting.

Contrary to the majority's suggestion, there is no basis for excluding from this category officers who, in using their weapons, "acted in a heroic manner that was unlikely to provoke retaliation." (Maj. opn., *ante,* 172 Cal.Rptr.3d at p. 67, 325 P.3d at p. 469.) The majority asserts that safety is not "an issue" for such officers. (Maj. opn., *ante,* at p. 66, 325 P.3d at p. 468.) But the majority fails to explain how to distinguish between heroic acts that are likely to provoke retaliation and those that are not. And it is naïve to believe that the desire for revenge of friends, family members, and gang associates of those shot by police will be reduced, much less eliminated, by the fact that the officers acted heroically. Indeed, the majority's bald assertion will surely come as surprising news to the many officers who, having heroically used their weapons in confronting gang-related crime, face retaliation from other gang members. It simply is not true, as the majority asserts, that officer safety is "not ... an issue" whenever a shooting may be characterized as "heroic" and "unlikely to provoke retaliation." (Maj. opn., *ante,* at p. 67, 325 P.3d at p. 469) Of course, as to individual officers who do not perceive a safety threat to themselves or their families, and who do not oppose public recognition of their heroism, section 6254, subdivision (c), would not prevent disclosure. Releasing an officer's name under those circumstances would not constitute "an unwarranted invasion of personal privacy." (*Ibid.*)

Finally, there are good reasons for not requiring, as to each officer whose name is to be withheld, evidence of an actual and specific threat to the officer or the members of his or her family. Where, as here, the disclosure request covers all officer-involved shootings during a six-year period, requiring such individualized proof will impose an obvious and substantial burden on law enforcement agencies that want to protect their officers.[5] More importantly, *****76** as the Union observes, "killers do not usually announce their intentions in advance." Thus, in most cases, although the threat to officer safety is real, the ***85** kind of evidence the majority demands is not available. Because the lives of our officers and their families are at stake, I would not require a law enforcement agency to wait until there is a specific threat—or worse, an actual attack—before allowing it to withhold information that puts its officers and their families at risk. Absent a showing of some greater public need for the information, we should allow law enforcement agencies to protect the very officers who are out there every day protecting us. They deserve at least that much for their brave service.

I therefore dissent.[6]

All Citations

59 Cal.4th 59, 325 P.3d 460, 172 Cal.Rptr.3d 56, 199 L.R.R.M. (BNA) 3501, 42 Media L. Rep. 2105, 14 Cal. Daily Op. Serv. 5853, 2014 Daily Journal D.A.R. 6795

Footnotes

* Retired Associate Justice of the Supreme Court, assigned by the Chief Justice pursuant to article VI, section 6 of the California Constitution.

1 The Times contends that it was not properly served with the Cox declaration. The Times does not, however, assert that it raised that issue in the trial court, and hence the issue appears to have been forfeited. In any case, as discussed below, the trial court concluded that the facts asserted in the Cox declaration were too general and speculative to support the

Union's request for injunctive relief. Therefore, any failure to properly serve the Cox declaration did not adversely affect the Times.

2 Both the trial court and the Court of Appeal rejected the Times's legal issue that Government Code sections 6258 and 6259 set forth the exclusive means for litigating whether requested records must be disclosed and that therefore declaratory relief was inappropriate. (See *Filarsky v. Superior Court* (2002) 28 Cal.4th 419, 121 Cal.Rptr.2d 844, 49 P.3d 194 [holding that a *city* is not entitled to declaratory relief regarding its disclosure obligations under the California Public Records Act, but not deciding whether a *third party*—such as the Union here—is entitled to such relief].) We did not grant review to decide that legal issue, and we express no view on the matter. The issue remains open, and the Times can reassert it in any future proceedings.

1 All further unlabeled statutory references are to the Government Code.

2 The majority cites no legislative history to support its view of the "legislative policy" Penal Code section 830.10 "reflects." (Maj. opn., *ante,* 172 Cal.Rptr.3d at p. 65, 325 P.3d at p. 468.) The statute derives from its substantively identical predecessor, Penal Code former section 830.7, which provided: "Any uniformed peace officer shall wear a badge, nameplate, or other device which bears clearly on its face the identification number or name of such officer." (Stats.1969, ch. 1458, § 1, p. 2978.) In the only illuminating item of legislative history I could find—a letter to the Governor urging him to sign the passed bill containing the statute—the bill's legislative author stated that it would "aid[ ] morale in that it goes far to halt the deindividualization of our law enforcement personnel." (Assemblyman John Miller, letter to Governor Ronald Reagan re Assem. Bill No. 1830 (1969 Reg. Sess.) Aug. 8, 1969, p. 1.) This letter does not support the majority's assertion.

3 The majority asserts that the disclosure exemption of section 6254, subdivision (f), does not apply because the requested information comes from a source other than "the records of any administrative or criminal investigation" of officer-involved shootings (maj. opn., *ante,* 172 Cal.Rptr.3d at p. 66, 325 P.3d at p. 469), perhaps "the initial incident reports" of such shootings (maj. opn., *ante,* at p. 61, 325 P.3d at p. 464). The appellate record offers no basis for the majority's speculation regarding the source of the requested information, as to either the Zerby shooting or any of the other officer-involved shootings that occurred during the six-year period the request identifies. Nor does the majority offer any legal basis for construing the broadly worded phrase "records *relating to* ... [¶] ... [¶] ... [e]mployee ... appraisal[ ] or discipline," which defines one category of confidential personnel records under Penal Code section 832.8, subdivision (d), to apply narrowly "only" to "the records *generated* in connection with" officer appraisal or discipline (maj. opn., *ante,* at pp. 63–64, 325 P.3d at pp. 466–467). Had the Legislature intended to so limit the scope of confidentiality under this section, it easily could have used the majority's far narrower phrase.

4 Moreover, although there is a *greater* showing in this case regarding safety than in *Times Mirror,* the showing needed to justify nondisclosure here arguably *is less than* the showing that was needed in *Times Mirror.* Nondisclosure is proper under section 6254, subdivision (c), upon a showing that disclosure "would constitute an unwarranted invasion of personal privacy." In *Times Mirror,* we held that nondisclosure was proper under section 6255, which requires a showing that "on the facts of the particular case the public interest served by not disclosing the record *clearly outweighs* the public interest served by disclosure of the record." (Italics added; see *Times Mirror, supra,* 53 Cal.3d at pp. 1346–1347, 283 Cal.Rptr. 893, 813 P.2d 240.)

5 For example, according to reported statistics, the Los Angeles Police Department averaged 70 officer-involved shootings per year for the years 2005–2008. (L.A. Police Dept., Use of Force Annual Report, p. 16 < http:// www.lapdonline.org/ assets/pdf/2009YearEndReportFinal.pdf> as of May 29, 2014.) In 42 officer-involved shootings internally reviewed in 2009 for compliance with department policy, "[t]here were 278 substantially involved officers," 85 of whom "discharged their firearms." (*Id.* at p. 19.)

6 Given my conclusion, I do not further address the majority's analysis regarding the applicability of the exemptions set forth in Government Code section 6255 and Penal Code sections 832.7 and 832.8.

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Distinguished by City and County of San Francisco v. Western Air Lines, Inc., Cal.App. 1 Dist., May 28, 1962

33 Cal.2d 635, 204 P.2d 7

THE CITY OF NATIONAL CITY et al., Petitioners,
v.
GILBERT E. FRITZ, as City Mayor, etc., et al., Respondents.

L. A. No. 20857.
Supreme Court of California
Mar. 22, 1949.

HEADNOTES

(1)
Municipal Corporations § 161--Funds--Capital Outlays.
The term "utilities," as used in the statutory restriction on the use of a municipal fund established for capital outlays (Stats. 1937, p. 1995, Deering's Gen. Laws, Act 8496a) means "public utilities," and does not include sewers; hence such a fund may be used for the construction of sewers.

See 18 **Cal.Jur.** 870, 1076.

SUMMARY

PROCEEDING in mandamus to compel the signing of a contract and the transfer of a fund to meet payments thereunder. Writ granted.

COUNSEL
Burke, Marshall & Burke and Daniel G. Marshall for Petitioners.
Merideth L. Campbell, City Attorney, for Respondents.

CARTER, J.

The controversy in this proceeding involves the interpretation of a statute authorizing the establishment by municipal corporations of capital outlay funds (Stats. 1937, p. 1995, as amended last in 1945; Stats. 1945, p. 1867).

That act provides that the governing body of any city "empowered to levy and collect assessments or taxes may by ordinance provide for the levy and collection of assessments or taxes for the creation and accumulation of a fund for capital outlays." The general limitation on the right to impose taxes applies. "At any time after the creation of such a fund such governing body may transfer to such fund any unincumbered surplus funds remaining on hand in such city, ... at the end of any fiscal year.

"Whenever such fund is created in the manner aforesaid it shall remain inviolate for the making of any capital outlays and no moneys shall be disbursed therefrom excepting for such a purpose; ....

"The term 'capital outlays' shall not be construed to include the construction, acquisition, extensions of, or additions to, ***636** *utilities, other than utilities for the furnishing of water supply."* (Emphasis added.)

In the instant case the city council passed an ordinance purporting to create a capital outlay fund pursuant to the act. There is a dispute in regard to whether the ordinance in fact achieved that end inasmuch as it did not provide for the levy of taxes or assessments for the creation of the fund. It merely created the fund. But in view of the result reached herein, it is not necessary to resolve that question. From the receipts from sale of real property of the city to the United States, $983,800.29 was ordered deposited in the fund by the city council and it is now there and unencumbered. The council has awarded contracts for the construction of sewers in the city in the sum of $675,287.77 but respondent mayor of the city refuses to sign the contracts, and respondent clerk refuses to transfer said sum to the general fund to meet the payments under those contracts, claiming that moneys in the capital outlay fund cannot be used for sewer purposes under the above quoted act for the reason that a sewer is a utility as used in the last sentence dealing with things for which the fund cannot be used. Petitioners, on the other hand, take the position (among others) that a sewer is not a utility as that term is used in the act. With the latter contention we agree for the following reasons.

([1]) The unqualified word "utility" has a broad meaning. It is defined as " quality or state of being useful; usefulness; profitableness to some desired end." (Webster's New Internat. Dict. (2d ed.) p. 2808.) (See also *Interstate National Gas Co. v. Gulley,* 4 F.Supp. 697, 699.) If that definition were applied to the statute in question, there would be practically no activity in which the city could use

the money from the capital outlay fund because practically all of its property and public services are presumably for useful purposes. Thus the exception in the act (the italicized part thereof) for which funds may not be used would be broader than the main purpose of the act to authorize the creation of, and levy of taxes for, a capital outlay fund. Practically the only use that could be made of the fund would be for a water supply which is an exception carved out of an exception. These factors, coupled with the rule that exceptions in a statute are to be strictly construed (*Hurst v. City & County of San Francisco, ante,* p. 298 [201 P.2d 805]; *McAlpine v. Baumgartner,* 10 Cal.2d 409 [74 P.2d 753]; *Dufton v. Daniels,* 190 Cal. 577 [213 P. 949]; *Forbes v. City of Los* ***637** *Angeles,* 101 Cal.App. 781 [282 P. 528]; Crawford, Statutory Construction, § 299), require that the word "utility" be interpreted to mean a "public utility, " for as will be seen, that term as used here has a more narrow meaning than " utility."

We are convinced that the construction and maintenance of a sewer system is not a "public utility" within the meaning of the act. Generally speaking statutes should be construed in the light of other statutes dealing with the same subject matter. (*In re Phyle,* 30 Cal.2d 838 [186 P.2d 134]; *Stillwell v. State Bar,* 29 Cal.2d 119 [178 P.2d 313].) The term "public utilities," with reference to the power of a municipal corporation to acquire and operate them, customarily embraces an enterprise which was usually engaged in by private corporations or individuals such as supplying water and electricity to the inhabitants. In this state it never has been the custom to have sewers operated privately. There was some doubt whether municipal corporations could acquire and operate such enterprises (public utilities) until the amendment to the Constitution (Cal. Const., art. XI, § 19) in 1911 authorizing such corporations to supply their inhabitants with light, water, power, heat, transportation and means of communications (18 Cal.Jur. 1076), but the power of municipal corporations to construct and maintain sewers has always been broad and unquestioned; the power may be derived from the authority to construct and maintain streets. (See *Harter v. Barkley,* 158 Cal. 742 [112 P. 556]; *Kramer v. Los Angeles,* 147 Cal. 668 [82 P. 334]; *McBean v. City of Fresno,* 112 Cal. 159, 163 [44 P. 358, 53 Am.St.Rep. 191, 31 L.R.A. 794]; *City of Madera v. Black,* 181 Cal. 306, 313 [184 P. 397]). The Public Utilities Act of this state lists many activities as "public utilities " but no mention is made of sewers (Stats. 1915, p. 115, as amended).

For the foregoing reasons it is clear that the term "utilities" as used in the exception in the statute in question does not include sewers. The fund here involved may, therefore, be used for construction of sewers.

Let a peremptory writ of mandate issue as prayed for.

Gibson, C. J., Shenk, J., Traynor, J., Schauer, J., and Spence, J., concurred.

EDMONDS, J.

Again the court has rendered what I consider to be an advisory opinion in a collusive proceeding ***638** brought by a city against two of its officers. The result is a decision which places the stamp of the highest judicial approval upon financial transactions which affect every taxpayer of the city without any truly adversary presentation of the merits of the controversy. Moreover, the construction of the statute authorizing the establishment of a capital outlay fund may now be the unquestioned basis for action by the governing body of other cities. For the reasons I have stated in *City of Whittier v. Dixon,* 24 Cal.2d 664, 668 [151 P.2d 5, 153 A.L.R. 956]; *City and County of San Francisco v. Boyd,* 22 Cal.2d 685, 707 [140 P.2d 666]; *City and County of San Francisco v. Linares,* 16 Cal.2d 441, 448 [106 P.2d 369], I believe that this procedure is contrary to fundamental principles of the administration of justice.

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49 Cal.4th 12
Supreme Court of California

SIMPSON STRONG–TIE COMPANY, INC., Plaintiff and Appellant,
v.
Pierce GORE et al., Defendants and Respondents.

No. S164174.
|
May 17, 2010.

Synopsis

Background: Manufacturer of name-brand galvanized screws brought claims for defamation, trade libel, false advertising, and unfair business practices against attorney, relating to attorney's newspaper advertisement stating that owners of wood decks, built with certain brand-name galvanized screws, "may" have legal rights to compensation or other relief. The Superior Court, Santa Clara County, No. CV057666, John F. Herlihy, J., granted attorney's special motion to strike under the anti-SLAPP (strategic lawsuit against public participation) statute. Manufacturer appealed. The Court of Appeal affirmed. The Supreme Court granted review, superseding the opinion of the Court of Appeal.

Holdings: The Supreme Court, Baxter, J., held that:

[1] plaintiff has burden of establishing the applicability of a statutory exemption from anti-SLAPP statute, disapproving *Brill Media Co., LLC v. TCW Group, Inc.*, 132 Cal.App.4th 324, 33 Cal.Rptr.3d 371, and

[2] "commercial speech" exemption from anti-SLAPP statute was inapplicable.

Affirmed.

Opinion, 76 Cal.Rptr.3d 292, superseded.

West Headnotes (16)

[1] Pleading
Frivolous pleading

For purposes of anti-strategic lawsuit against public participation (SLAPP) statute, a "SLAPP" is a civil lawsuit that is aimed at preventing citizens from exercising their political rights or punishing those who have done so. West's Ann.Cal.C.C.P. § 425.16.

48 Cases that cite this headnote

[2] Pleading
Frivolous pleading

The commercial speech exemption, like the public interest exemption, is a statutory exception to the anti-strategic lawsuit against public participation (SLAPP) statute and should be narrowly construed. West's Ann.Cal.C.C.P. §§ 425.16, 425.17(b, c).

11 Cases that cite this headnote

[3] Pleading
Application and proceedings thereon

The plaintiff has the burden of establishing the applicability of the "commercial speech" statutory exemption from the anti-strategic lawsuit against public participation (SLAPP) statute, in opposing the defendant's anti-SLAPP motion; disapproving *Brill Media Co., LLC v. TCW Group, Inc.*, 132 Cal.App.4th 324, 33 Cal.Rptr.3d 371. West's Ann.Cal.C.C.P. § 425.17(c); West's Ann.Cal.Evid.Code § 500.

63 Cases that cite this headnote

[4] Contracts
Presumptions and burden of proof

Statutes
Burden of proof

It is a legal principle that when a proviso carves an exception out of the body of a

statute or contract those who set up such exception must prove it.

3 Cases that cite this headnote

[5] **Statutes**
Burden of proof

The enactment of the statute providing that except as otherwise provided by law, "a party has the burden of proof as to each fact the existence or nonexistence of which is essential to the claim for relief or defense that he is asserting," did not upset the traditional rule of statutory construction that when a proviso carves an exception out of the body of a statute or contract those who set up such exception must prove it. West's Ann.Cal.Evid.Code § 500.

8 Cases that cite this headnote

[6] **Evidence**
Elements of cause of action or claim

Evidence
Matters of Defense and Rebuttal

The general principle of the statute providing that except as otherwise provided by law, "a party has the burden of proof as to each fact the existence or nonexistence of which is essential to the claim for relief or defense that he is asserting," is that a party who seeks a court's action in his favor bears the burden of persuasion thereon. West's Ann.Cal.Evid.Code § 500.

6 Cases that cite this headnote

[7] **Evidence**
Nature and scope in general

The ordinary rules governing allocation of the burden of proof may be disregarded for policy reasons in exceptional circumstances, yet such exceptions are few, and narrow, and the reasons justifying a shift in the normal allocation of the burden of proof must be compelling.

3 Cases that cite this headnote

[8] **Pleading**
Frivolous pleading

The "commercial speech" exemption from the anti-strategic lawsuit against public participation (SLAPP) statute does not prescribe "content" and "delivery" exemptions with distinctly different elements. West's Ann.Cal.C.C.P. § 425.17(c)(1).

8 Cases that cite this headnote

[9] **Statutes**
Purpose and intent

In any case involving statutory interpretation, the court's fundamental task is to determine the Legislature's intent so as to effectuate the law's purpose.

1 Cases that cite this headnote

[10] **Statutes**
Language and intent, will, purpose, or policy

Statutes
Literal, precise, or strict meaning;letter of the law

Statutes
Unintended or unreasonable results; absurdity

Statutes
Relation to plain, literal, or clear meaning;ambiguity

In construing a statute, courts begin with the text of the statute as the best indicator of legislative intent but courts may reject a literal construction that is contrary to the legislative intent apparent in the statute or that would lead to absurd results.

9 Cases that cite this headnote

[11] **Pleading**
Frivolous pleading

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Statements or conduct made during the delivery of goods or services would qualify as statements or conduct made "in the course of" delivering goods or services, within meaning of the "commercial speech" statutory exemption from the anti-strategic lawsuit against public participation (SLAPP) statute. West's Ann.Cal.C.C.P. § 425.17(c)(1).

35 Cases that cite this headnote

[12] Pleading

Frivolous pleading

The "commercial speech" exemption from the anti-strategic lawsuit against public participation (SLAPP) statute exempts a cause of action arising from commercial speech when (1) the cause of action is against a person primarily engaged in the business of selling or leasing goods or services; (2) the cause of action arises from a statement or conduct by that person consisting of representations of fact about that person's or a business competitor's business operations, goods, or services; (3) the statement or conduct was made either for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services or in the course of delivering the person's goods or services; and (4) the intended audience for the statement or conduct meets the definition set forth in the statute. West's Ann.Cal.C.C.P. § 425.17(c).

45 Cases that cite this headnote

[13] Pleading

Frivolous pleading

Galvanized screw manufacturer's claims against attorney for defamation, trade libel, false advertising, and unfair business practices, relating to attorney's newspaper advertisement stating that owners of wood decks built with the screws "may" have legal rights to compensation or other relief, did not arise from representations of fact about attorney's "business operations, goods, or services," and thus were not within the "commercial speech" exemption from the anti-strategic lawsuit against public participation (SLAPP) statute; even if the advertisement created the inference that attorney had investigated manufacturer, any implication that manufacturer's screws were defective was a representation about manufacturer's products rather than about attorney's business operations. West's Ann.Cal.C.C.P. § 425.17(c)(1).

See Cal. Civil Practice (Thomson Reuters 2010) Civil Rights Litigation, § 14:10; 5 Witkin, Cal. Procedure (5th ed. 2008) Pleading, § 1026; Weil & Brown, Cal. Practice Guide: Civil Procedure Before Trial (The Rutter Group 2009) ¶ 7:555 et seq. (CACIVP Ch. 7(II)-B); Cal. Jur. 3d, Constitutional Law, § 270.

5 Cases that cite this headnote

[14] Pleading

Frivolous pleading

The representation that an attorney would investigate "whether you have a potential claim," in attorney's newspaper advertisement seeking potential plaintiffs for class action against galvanized screw manufacturer, did not constitute a representation of fact about attorney's business operations, goods, or services, and thus was not within the commercial speech exemption to the anti-strategic lawsuit against public participation (SLAPP) law; the statement was not a representation of fact, but an agreement to take certain actions in the future. West's Ann.Cal.C.C.P. § 425.17(c)(1).

3 Cases that cite this headnote

[15] Pleading

Frivolous pleading

Under the "commercial speech" exemption from the anti-strategic lawsuit against public participation (SLAPP) statute the statement or conduct giving rise to the cause of action must consist of factual representations about

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the speaker's or a competitor's goods, services, or business operations; it would not be sufficient for the statement giving rise to the cause of action to appear in the same publication as factual representations about the speaker's or a competitor's business. West's Ann.Cal.C.C.P. § 425.17(c)(1).

24 Cases that cite this headnote

[16] Pleading

Frivolous pleading

A party should not be able to defeat the commercial speech exception to the anti-strategic lawsuit against public participation (SLAPP) statute by parsing a two-sentence advertisement into its component parts; the proper test does not turn on the punctuation used in the advertisement, but on the basis for the cause of action. West's Ann.Cal.C.C.P. § 425.17(c)(1).

1 Cases that cite this headnote

Attorneys and Law Firms

***332** Shartsis Friese, Arthur J. Shartsis, Erick C. Howard, San Francisco; Eisenberg and Hancock, Jon B. Eisenberg and William N. Hancock, San Francisco, for Plaintiff and Appellant.

Davis Wright Tremaine, Thomas R. Burke, San Francisco, and Rochelle L. Wilcox, Los Angeles, for Defendants and Respondents.

Arkin & Glovsky, Pasadena, and Sharon Arkin for Consumer Attorneys of California as Amicus Curiae on behalf of Defendants and Respondents.

Levy, Ram & Olson and Karl Olson, San Francisco, for Senator Sheila Kuehl and California First Amendment Coalition as Amici Curiae on behalf of Defendants and Respondents.

Opinion

BAXTER, J.

*16 **1120 In this case we consider the scope of the commercial speech exemption to the anti-SLAPP statute. (See Code Civ. Proc., §§ 425.16, 425.17, subd. (c).) [1]

In February 2006, plaintiff Simpson Strong–Tie Company, Inc. (Simpson) filed this action for defamation and related claims against defendants Pierce Gore and The Gore Law Firm arising from a newspaper advertisement placed by Gore a few weeks earlier. The advertisement, which was directed to owners of wood decks constructed after January 1, 2004, advised readers that "you may have certain legal rights and be entitled to monetary compensation, and repair or replacement of your deck" if the deck was built with galvanized screws manufactured by Simpson or other specified entities, and invited those persons to contact Gore "if you would like an attorney to investigate whether you have a potential claim."

*17 Gore moved successfully in the superior court to have the entire complaint stricken under section 425.16, the anti- ***333** SLAPP statute, and the Court of Appeal affirmed. We granted review to consider the limited issue whether Simpson's complaint was exempt from the anti-SLAPP statute because of section 425.17, subdivision (c) (section 425.17(c)), which excludes causes of action arising from representations of fact about the speaker's or a competitor's "business operations, goods, or services ... made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services" or "made in the course of delivering the person's goods or services." Having found that the complaint is not exempt from dismissal under the anti-SLAPP statute, we affirm.

BACKGROUND

Plaintiff Simpson is a California corporation in the business of designing, manufacturing, and marketing building products, including metal connectors and other hardware for use in wood frame construction. According to Simpson, it is well known in the wood frame construction industry that pressure-treated wood, which is commonly used in outdoor decks to protect against termites and fungal decay, can have a corrosive effect on steel products, including galvanized screws. Corrosion potentially shortens the service life of these fasteners and connectors and compromises their ability to support their

recommended loads or endure seismic and environmental stresses.

In early 2004, at the recommendation of the United States Environmental Protection Agency, the construction industry stopped selling lumber treated with chromium copper arsenate, due to health hazards posed by its arsenic content. Alternative lumber products, such as wood treated with alkaline copper quaternary and copper azole, were substituted, but, as Simpson explains, these chemicals are "more corrosive" to galvanized steel products. Simpson states that it communicated this potential problem to the building industry and to the public generally through its Web site, annual catalog, articles in engineering and building magazines, bulletins issued to the building industry, point-of-sale information, and annual report.

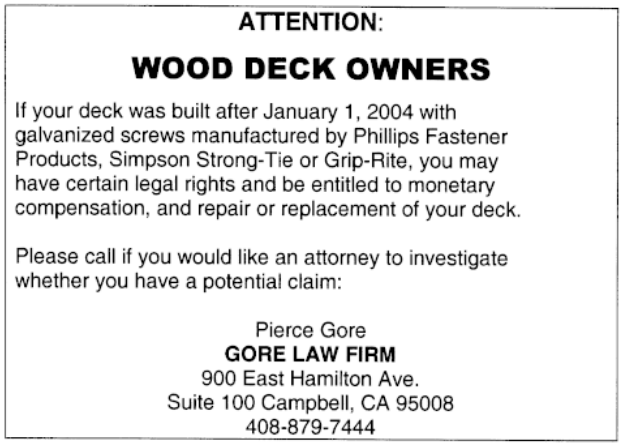
Gore, a California attorney, learned from television reports about the potential for corrosion of galvanized deck fasteners and connectors when used on wood pressure treated with alkaline copper quaternary or copper azole, and contacted Ted Todd, a senior inspector with the Contra Costa ***18** County District Attorney's Office who was featured in the television reports. At that time, the district attorney's office was conducting an investigation into the risk posed by galvanized fasteners and connectors when used with these types of pressure-treated wood. The office ultimately issued a "Consumer Alert" warning of the corrosive effect of the ****1121** new pressure-treated wood products "on the metal connector brackets typically used in construction." The alert noted that advisories had been posted in some retail stores about the potential incompatibility of the two products but cautioned that the advisories "tend to be in very small print or somewhat inconspicuously posted."

Gore also visited the company Web site, where Simpson had advised in bold type that "[m]any of the new Pressure Treated Woods use chemicals that are corrosive to steel. By selecting connectors that offer greater corrosion resistance ... you can extend the service life of your connectors. However, corrosion will still occur. You should perform periodic inspection of your connectors and fasteners to insure their strength is not being adversely affected by corrosion. In some cases, it may be necessary to have a local professional perform *****334** the inspections. Because of the many variables involved, Simpson Strong–Tie cannot provide estimates on service life of connectors, anchors or fasteners."

In addition, Gore discovered that a class action complaint had been filed in Massachusetts against one of Simpson's competitors, Phillips Fastener Products, Inc., which sought relief on behalf of consumers allegedly damaged by defective galvanized fasteners and connectors used with pressure-treated lumber, and that Gore's former law firm, Lieff, Cabraser, Heimann & Bernstein, LLP, was investigating claims that some of the newly designed fasteners were failing, in spite of the manufacturers' representations that the "special coatings" were intended to resist corrosion.

Based on this information, Gore arranged for an advertisement to be placed in the San Jose Mercury News in order to locate individuals who had purchased galvanized fasteners and connectors manufactured by Simpson and two other companies, which together were responsible for most of the metal fasteners sold to consumers in California. The advertisement, which commenced Christmas Day 2005 and ran four more times over a 28–day period in the Mercury News and once in the Los Gatos Weekly–Times, read as follows:

***19**


ATTENTION:

WOOD DECK OWNERS

If your deck was built after January 1, 2004 with galvanized screws manufactured by Phillips Fastener Products, Simpson Strong-Tie or Grip-Rite, you may have certain legal rights and be entitled to monetary compensation, and repair or replacement of your deck.

Please call if you would like an attorney to investigate whether you have a potential claim:

Pierce Gore
GORE LAW FIRM
900 East Hamilton Ave.
Suite 100 Campbell, CA 95008
408-879-7444

Gore has asserted that the wording of the advertisement was modeled after notices he or his cocounsel had used in this state and in others during the preceding three years in connection with potential class actions based on consumer fraud or product defects.

****1122** In a letter dated January 9, 2006, counsel for Simpson advised Gore that the advertisement falsely implied that Simpson's galvanized screws fail to meet

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appropriate industry standards and that a valid claim may exist against Simpson based upon negligence or product liability. The letter demanded that Gore cease publication of any further defamatory advertisements directed at Simpson and reserved Simpson's right to recover against Gore for any costs ***335 or damages that may have already resulted from this or any similar publication. Gore did not respond to the letter. In a letter dated January 27, 2006, counsel for Simpson declared that Gore's failure to respond "suggests that your claims are without merit, and that your newspaper advertisement is false, misleading, and defames Simpson.... Unless you can present specific evidence to support your charges, Simpson intends to pursue its defamation claim against your firm[ ] and vindicate its rights." Again, Gore did not respond.

Prior to filing this action, Simpson retained an opinion survey firm to confirm that the advertisement had caused injury to Simpson's reputation. The survey firm intercepted 214 randomly selected shoppers at nine different *20 home improvement stores in January and February 2006 and obtained their responses to a set of questions with and without exposure to the Gore advertisement. The survey revealed that the shoppers, after reading the advertisement, were significantly more likely to believe that Simpson's galvanized screws were defective or of low quality and were significantly less likely to purchase galvanized screws manufactured by Simpson.

Two days after the survey was completed, Simpson filed this action for defamation, trade libel, false advertising, and unfair business practices. The complaint sought compensatory and punitive damages as well as injunctive relief.

When Gore moved to strike the complaint under section 425.16, Simpson invoked the exemption to the anti-SLAPP law for commercial speech under section 425.17(c). The trial court granted the special motion to strike and entered a judgment of dismissal, finding Gore had made a threshold showing that the statements were made in furtherance of his right of petition or free speech on an issue of public interest (§ 425.16, subd. (e)(4)), that Simpson had failed to demonstrate a probability of prevailing on the merits (§ 425.16, subd. (b)(1)), and that the commercial speech exemption did not apply because the advertisement made no statement about a business competitor's products or services.

The Court of Appeal affirmed in a published opinion. The court first considered "who bears the burden of persuasion with respect to the applicability of [the section 425.17(c)] exemption—the party invoking the anti-SLAPP law (i.e., the defendant), or the party invoking the exemption (the plaintiff)?" In assigning the burden to the plaintiff, the Court of Appeal disagreed with *Brill Media Co., LLC v. TCW Group, Inc.* (2005) 132 Cal.App.4th 324, 33 Cal.Rptr.3d 371 (*Brill*), which had assigned the burden to the defendant to establish that the cause of action is *not* exempt. The court next determined that while the advertisement was "made for the purpose of ... promoting ... [Gore's] services" (§ 425.17(c)(1)), Simpson's causes of action did not " 'aris[e] from' " any representation of fact " 'about' Gore's or a competitor's services or business operations."

In construing the exemption in section 425.17(c)(1) for causes of action arising from statements or conduct "made in the course of delivering the person's goods or services," the Court of Appeal once again disagreed with *Brill,* which had found this prong was satisfied where "the statements were made and conduct engaged in as part of....the type of business transaction engaged in by defendants." (*Brill, supra,* 132 Cal.App.4th at p. 341, 33 Cal.Rptr.3d 371.) The Court of Appeal reasoned that the Legislature had enacted instead "a much narrower exemption, predicated by its plain terms on conduct in the course of *21 *delivering* the *goods or services* the defendant is in the business of *selling or* ***336 *leasing.*" The court then found that the advertisement here "was *seeking business from* prospective clients, not *delivering services to* them." Concluding that the anti-SLAPP statute applied and that Simpson had failed to establish a probability **1123 of prevailing on any of its claims, the Court of Appeal affirmed the order granting the special motion to strike and the judgment of dismissal.

We granted review to address the conflict in the case law concerning the construction of the commercial speech exemption to the anti-SLAPP statute.

DISCUSSION

[1] A SLAPP is a civil lawsuit that is aimed at preventing citizens from exercising their political rights or punishing those who have done so. " 'While SLAPP suits masquerade as ordinary lawsuits such as defamation

and interference with prospective economic advantage, they are generally meritless suits brought primarily to chill the exercise of free speech or petition rights by the threat of severe economic sanctions against the defendant, and not to vindicate a legally cognizable right.' " (*Castillo v. Pacheco* (2007) 150 Cal.App.4th 242, 249–250, 58 Cal.Rptr.3d 305, quoting Sen. Com. on Judiciary, Analysis of Sen. Bill No. 1296 (1997–1998 Reg. Sess.) as amended May 12, 1997, pp. 1–2.)

In 1992, out of concern over "a disturbing increase" in these types of lawsuits, the Legislature enacted section 425.16, the anti-SLAPP statute. (§ 425.16, subd. (a).) The statute authorized the filing of a special motion to strike to expedite the early dismissal of these unmeritorious claims. (§ 425.16, subds. (b)(1), (f).) To encourage "continued participation in matters of public significance" and to ensure "that this participation should not be chilled through abuse of the judicial process," the Legislature expressly provided that the anti-SLAPP statute "shall be construed broadly." (§ 425.16, subd. (a).)

A special motion to strike involves a two-step process. First, the defendant must make a prima facie showing that the plaintiff's "cause of action ... aris[es] from" an act by the defendant "in furtherance of the [defendant's] right of petition or free speech ... in connection with a public issue." [2] (§ 425.16, subd. (b)(1).) If a defendant meets this threshold showing, the cause of action shall be stricken unless the plaintiff can establish "a probability that the plaintiff will prevail on the claim." (*Ibid.*)

In 2003, concerned about the "disturbing abuse" of the anti-SLAPP statute, the Legislature enacted section 425.17 to exempt certain actions from it. ***22** (§ 425.17, subd. (a).) We recently discussed the exemption for public interest lawsuits in *Club Members for an Honest Election v. Sierra Club* (2008) 45 Cal.4th 309, 86 Cal.Rptr.3d 288, 196 P.3d 1094, where we "narrowly construed" section 425.17, subdivision (b) and held that it applied "only when the entire action is brought in the public interest." (*Club Members for an Honest Election, supra,* 45 Cal.4th at pp. 312, 316, 86 Cal.Rptr.3d 288, 196 P.3d 1094.)

This case involves the scope and operation of the exemption for commercial speech under section 425.17(c), which provides: "Section 425.16 does not apply to any cause of action brought against a person primarily engaged in the business of selling or leasing goods or services, including, but not limited to, insurance, securities, or financial instruments, arising from any statement or conduct by that person if both of the following conditions exist: [¶] *****337** (1) The statement or conduct consists of representations of fact about that person's or a business competitor's business operations, goods, or services, that is made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services, or the statement or conduct was made in the course of delivering the person's goods or services. [¶] (2) The intended audience is an actual or potential buyer or customer, or a person likely to repeat the statement to, or otherwise influence, an actual or prospective buyer or customer, ..."

[2] The commercial speech exemption, like the public interest exemption, "is a statutory exception to section 425.16" and "should be narrowly construed." (*Club Members for an Honest Election v. Sierra Club, supra,* 45 Cal.4th at p. 316, 86 Cal.Rptr.3d 288, 196 P.3d 1094; see also ****1124** *Major v. Silna* (2005) 134 Cal.App.4th 1485, 1494, 36 Cal.Rptr.3d 875; accord, Sen. Com. on Judiciary, Analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended May 1, 2003, pp. 7–8 ["before us for consideration in [Senate Bill] 515 is a measure that seeks to trim off a few bad branches as argued and identified by the [Consumer Attorneys of California]"].)

A. Which Party Bears the Burden to Establish the Applicability of the "Commercial Speech" Exemption Under Section 425.17(c)?

[3] The Court of Appeal determined that Simpson, as the plaintiff, bore the burden of establishing that Gore's advertisement fell within the commercial speech exemption to the anti-SLAPP law, relying on the general rule that " '[o]ne claiming an exemption from a general statute has the burden of proving that he comes within the exemption.' " Simpson argues that the burden should have been placed on Gore, as the defendant, to establish that the exemption does *not* apply. He relies in particular on our summary in *Equilon Enterprises v. Consumer Cause, Inc.* (2002) 29 Cal.4th 53, 67, 124 Cal.Rptr.2d 507, 52 P.3d 685 (*Equilon*), of the "two-step process" for ***23** analyzing anti-SLAPP motions: "First, the court decides whether the *defendant* has made a threshold showing that the challenged cause of action is one arising from protected activity.... If the court finds such a showing has been made, it then determines whether the *plaintiff*

has demonstrated a probability of prevailing on the claim." (Italics added.) We agree with the Court of Appeal's construction.

[4] It is a "familiar" and "longstanding" legal principle that " '[w]hen a proviso ... carves an exception out of the body of a statute or contract those who set up such exception must prove it.' " (*Meacham v. Knolls Atomic Power Laboratory* (2008) 554 U.S. 84, 128 S.Ct. 2395, 2400, 171 L.Ed.2d 283; see also *Trade Comm'n v. Morton Salt Co.* (1948) 334 U.S. 37, 44–45, 68 S.Ct. 822, 92 L.Ed. 1196 ["the burden of proving justification or exemption under a special exception to the prohibitions of a statute generally rests on one who claims its benefits ..."]; accord, 29 Am.Jur.2d (2008) Evidence § 176, p. 193.) Likewise, in California, "it has been declared that where the statute has exemptions, exceptions or matters which will avoid the statute the burden is on the claimant to show that he falls within that category." (*Colonial Ins. Co. v. Ind. Acc. Com.* (1945) 27 Cal.2d 437, 441, 164 P.2d 490; see also *Briggs v. McCullough* (1869) 36 Cal. 542, 551–552; *In re Lorenzo C.* (1997) 54 Cal.App.4th 1330, 1345, 63 Cal.Rptr.2d 562 ["one who claims an exemption from a general statute has the burden of proving that he or she comes within the exemption"].)

***338** Simpson does not dispute that section 425.16 sets forth a general statute or that section 425.17 creates specified exemptions to it. Simpson contends, though, that the familiar and long-standing rule of statutory construction governing exemptions to a general statute was abrogated by the enactment in 1965 of Evidence Code section 500, which provides: "Except as otherwise provided by law, a party has the burden of proof as to each fact the existence or nonexistence of which is essential to the claim for relief or defense that he is asserting."

[5] Although it is true that Evidence Code section 500 superseded former section 1981, which had provided that the burden of proof was on the party holding the affirmative of the issue, the change in wording did not upset the traditional rule of statutory construction. As the Law Revision Commission Comments to Evidence Code section 500 explain, the phrase the " 'affirmative of the issue' " in former section 1981 had been criticized "as establishing a meaningless standard," inasmuch as " 'practically any proposition may be stated in either affirmative or negative form.' " (Cal. Law Revision Com. com., reprinted at 29B West's Ann. Evid.Code (1995 ed.) foll. § 500, p. 554.) Evidence Code section 500 was intended to make the allocation of the burden of proof "easier to ascertain" than the "classic formulation," but *24 not to signal a sea change in the law. (*Conservatorship of Hume* (2006) 140 Cal.App.4th 1385, 1388, fn. 5, 44 Cal.Rptr.3d 906; see also *Los Angeles Unified School Dist. v. Workers' Comp. Appeals Bd.* (1984) 150 Cal.App.3d 823, 829, 198 Cal.Rptr. 116 [citing the two formulations together].) Tellingly, Simpson **1125 cites nothing to support its novel claim that Evidence Code section 500 abrogated the ordinary rule of statutory construction. (Cf. 31 Cal.Jur.3d (2002) Evidence § 90, p. 151 ["What facts are essential to a particular party's claim for relief or defense is generally a matter to be determined by the substantive law, not the law of evidence; Evid.Code, § 500 does not purport to determine which facts are 'essential' to the plaintiff's claim for relief and which facts are 'essential' to a claimed defense, but rather leaves those substantive determinations to be resolved in light of the particular cause of action or defense at issue," (fns. omitted)].) Indeed, the Law Revision Commission Comments note that Evidence Code section 500 "follows th[e] basic rule"—i.e., " 'that whatever facts a party must affirmatively plead he also has the burden of proving' "—and is even broader, in that it " appl[ies] to issues not necessarily raised in the pleadings." (Cal. Law Revision Com. com., reprinted at 29B West's Ann. Evid.Code, *supra,* foll. § 500, p. 554.) Inasmuch as Simpson concedes that "[t]he initial burden should be on the plaintiff to invoke the exemption in opposition to the anti-SLAPP motion," it follows that the plaintiff also has the burden of proving the applicability of the exemption.

[6] Furthermore, the "general principle" of Evidence Code section 500 is "that a party who seeks a court's action in his favor bears the burden of persuasion thereon." (*Aguilar v. Atlantic Richfield Co.* (2001) 25 Cal.4th 826, 850, 107 Cal.Rptr.2d 841, 24 P.3d 493.) Because establishing the commercial speech exemption is essential to Simpson's defense to the special motion to strike, Evidence Code section 500 places the burden of proof on Simpson. (See generally *City of Lafayette v. East Bay Mun. Utility Dist.* (1993) 16 Cal.App.4th 1005, 1017, 20 Cal.Rptr.2d 658 [" ' "One seeking to be excluded from the sweep of the general statute must establish that the exception applies" ' "].)

Nothing in *Equilon* or its discussion of the "two-step process" alters the analysis. (*Equilon, supra,* 29 Cal.4th

at p. 67, 124 Cal.Rptr.2d 507, 52 P.3d 685.) In *Equilon,* ***339** we explained that the defendant has the burden to show that the cause of action being challenged under the anti-SLAPP statute is one arising from protected activity. (*Equilon, supra,* at p. 67, 124 Cal.Rptr.2d 507, 52 P.3d 685.) In discussing the defendant's burden at the first stage, *Equilon* construed only section 425.16, and did not purport to identify the party with the burden to establish the existence or nonexistence of the public interest exemption in section 425.17, subdivision (b), or the commercial speech exemption in section 425.17(c), inasmuch as *Equilon* predated the enactment of section 425.17. It is worth noting, though, that *25 nothing in *Equilon* purported to abrogate the long-standing rule of construction that the party seeking to benefit from an exception to a general statute bears the burden to establish the exception. [3]

[7] Simpson argues, correctly, that the ordinary rules governing allocation of the burden of proof may be disregarded for policy reasons in exceptional circumstances. (*Adams v. Murakami* (1991) 54 Cal.3d 105, 119–120, 284 Cal.Rptr. 318, 813 P.2d 1348; *Cassady v. Morgan, Lewis & Bockius LLP* (2006) 145 Cal.App.4th 220, 234, 51 Cal.Rptr.3d 527 (*Cassady*).) Yet such exceptions are "few, and narrow" (*Sargent Fletcher, Inc. v. Able Corp.* (2003) 110 Cal.App.4th 1658, 1670, 3 Cal.Rptr.3d 279), and the reasons justifying a shift in the normal allocation of the burden of proof must be "compelling." **1126 (*Aydin Corp. v. First State Ins. Co.* (1998) 18 Cal.4th 1183, 1193, 77 Cal.Rptr.2d 537, 959 P.2d 1213; accord, *Meacham v. Knolls Atomic Power Lab., supra,* 554 U.S. at pp. 90–92, 128 S.Ct. at p. 2400.) Simpson fails to identify any compelling justification.

Simpson does assert that the facts underlying the commercial speech exemption are "peculiarly" within the speaker's knowledge. But Simpson does not explain how a plaintiff would be significantly disadvantaged in demonstrating that the statement or conduct underlying its cause of action "consists of representations of fact about [the defendant]'s or a business competitor's business operations, goods, or services"; that the defendant's statement or conduct was "made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services" or "in the course of delivering the persons' goods or services"; or that the "intended audience" was "an actual or potential buyer or customer, or a person likely to repeat the statement to, or otherwise influence, an actual or potential buyer or customer." (§ 425.17(c)(1), (2); see generally *Schaffer v. Weast* (2005) 546 U.S. 49, 60, 126 S.Ct. 528, 163 L.Ed.2d 387 [" 'Very often one must plead and prove matters as to which his adversary has superior access to the proof' "].) In sum, Simpson does not persuade us that section 425.17(c) presents ***340** one of those " 'rare occasions' " *26 justifying a deviation from the normal allocation of the burden of proof. (*Cassady, supra,* 145 Cal.App.4th at p. 234, 51 Cal.Rptr.3d 527.)

The burden of proof as to the applicability of the commercial speech exemption, therefore, falls on the party seeking the benefit of it—i.e., the plaintiff.

B. Were Simpson's Causes of Action Exempted from the Anti–SLAPP Statute by Section 425.17(c)?

As noted, section 425.17(c) provides, in pertinent part: "Section 425.16 does not apply to any cause of action brought against a person primarily engaged in the business of selling or leasing goods or services ... arising from any statement or conduct by that person if both of the following conditions exist: [¶] (1) The statement or conduct consists of representations of fact about that person's or a business competitor's business operations, goods, or services, that is made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services, or the statement or conduct was made in the course of delivering the person's goods or services. [¶] (2) The intended audience is an actual buyer or potential buyer or customer, or a person likely to repeat the statement to, or otherwise influence, an actual buyer or customer...."

There are no disputed issues of fact here. We review the applicability of the commercial speech exemption independently. (*Soukup v. Law Offices of Herbert Hafif* (2006) 39 Cal.4th 260, 269, fn. 3, 46 Cal.Rptr.3d 638, 139 P.3d 30.)

[8] The Court of Appeal held, and the parties' initial briefing assumed, that section 425.17(c)(1) prescribes a "content exemption" and a "delivery exemption" and that these exemptions have distinctly different elements. The content exemption shields a cause of action from the anti-SLAPP statute if the cause of action arises from a statement or conduct that "consists of representations of

fact about that person's or a business competitor's business operations, goods, or services, that is made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services." (§ 425.17, subd. (c)(1).) The delivery exemption provides a similar shield for *any* statement or conduct "made in the course of delivering the person's goods or services." (*Ibid.*) In other words, this approach divided the first 47 words of subdivision (c)(1) from the last 17 to create two independent and parallel theories of exemption from the anti-SLAPP law.

Although section 425.17(c)(1) is grammatically susceptible of such a construction, that construction was not necessarily the only plausible one. ***27** Gore had observed, in a footnote in its initial briefing, that the statute might also be read to exempt a cause of action arising from a statement or conduct ****1127** that consists of representations of fact about that person's or a competitor's business operations, goods, or services that was made *either* "for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services" *or* "in the course of delivering the person's goods or services." (§ 425.17(c)(1).) We granted the parties the opportunity to file supplemental briefing as to which construction was the correct one and, as will appear, agree with Gore's construction.

[9] **[10]** As in any case involving statutory interpretation, our fundamental task is to determine the Legislature's intent so as to effectuate the law's purpose. *****341** (*People v. Lewis* (2008) 43 Cal.4th 415, 491, 75 Cal.Rptr.3d 588, 181 P.3d 947.) "We begin with the text of the statute as the best indicator of legislative intent" (*Tonya M. v. Superior Court* (2007) 42 Cal.4th 836, 844, 69 Cal.Rptr.3d 96, 172 P.3d 402), but we may reject a literal construction that is contrary to the legislative intent apparent in the statute or that would lead to absurd results. (*Ornelas v. Randolph* (1993) 4 Cal.4th 1095, 1105, 17 Cal.Rptr.2d 594, 847 P.2d 560.)

Simpson's argument, at least at the outset, relies on the plain language of section 425.17(c)(1) and the canon of construction of avoiding surplusage. According to Simpson, section 425.17(c)(1) creates two independent commercial speech exemptions, each introduced by the phrase "the statement or conduct," and to hold otherwise would render the second iteration of "the statement or conduct" in the subdivision redundant. In Simpson's view, therefore, the delivery exemption encompasses a cause of action arising from "*any* statement or conduct made in the course of delivering the person's goods or services." Gore argues that such a construction would contravene the legislative intent and lead to absurd results.

The Legislature's findings supporting the enactment of section 425.17 are set forth in subdivision (a), which states that "there has been a disturbing abuse of Section 425.16, the California Anti–SLAPP Law, which has undermined the exercise of the constitutional rights of freedom of speech and petition for the redress of grievances, contrary to the purpose and intent of Section 425.16. The Legislature finds and declares that it is in the public interest to encourage continued participation in matters of public significance, and that this participation should not be chilled through abuse of the judicial process or Section 425.16."

The construction favored by Simpson does not effectively fulfill the statute's purposes. Under that construction, the Legislature can be seen to have carefully devised specific requirements in order to exempt a cause of ***28** action under the content prong—i.e., the statement or conduct underlying the cause of action must (1) consist of representations of fact (2) about that person's or a business competitor's business operations, goods, or services, and (3) have been made for the purpose of obtaining approval for, promoting, or securing transactions in the person's goods or services. Yet, under Simpson's construction of the delivery prong, the Legislature apparently imposed no particular requirements—i.e., a cause of action arising from *any* statement or conduct on *any* subject for *any* purpose is exempted from the anti-SLAPP statute, as long as it was made in the course of delivering goods or services. Simpson has not offered any rationale for why the stage of the transaction should play such a critical factor in determining whether to exempt a cause of action from the reach of the anti-SLAPP law.

Moreover, under Simpson's approach, a business that was sued because of political or religious statements made by an employee *in the course of delivering* the product or service to a customer would be deprived of the protection of the anti-SLAPP law, but that same business would be able to invoke the anti-SLAPP law if the same statements were made for the purpose of obtaining approval for, promoting, or securing transactions in its

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products. Neither the Legislature's findings nor common sense endorses or justifies such a result.

[11] Simpson effectively concedes that such a result would be problematic, but argues that the statements in these hypotheticals "are *not a part of* the delivery of ***342** goods **1128** or services" and thus fall outside the delivery exemption as Simpson would interpret it. But, as we recently observed, " '[d]uring' means 'at some point in the course of.' " (*People v. Lewis, supra,* 43 Cal.4th at p. 514, 75 Cal.Rptr.3d 588, 181 P.3d 947.) Statements or conduct made *during* the delivery of goods or services thus would qualify as statements or conduct made *in the course of* delivering the goods or services. (Cf. § 425.17(c)(1).)

Simpson attempts to narrow the definition of the delivery exemption by combining language that appears in two different sentences in *Brill, supra,* 132 Cal.App.4th at page 341, 33 Cal.Rptr.3d 371, to argue that the exemption extends only to " 'statements ... made and conduct engaged in *as part of* ... the type of business transaction engaged in by defendants.' " But this formulation does not appear anywhere in the text of section 425.17(c)(1). If, as Simpson effectively concedes, the delivery prong requires an interpretive gloss to avoid absurd results, it seems more consonant with legislative intent to adopt the restriction the Legislature articulated earlier in the sentence setting forth the exemption rather than to rummage about elsewhere for new limitations arising out of whole cloth.

Moreover, Simpson's construction of the delivery prong would render the first part of section 425.17(c)(1)—the so-called "content and purpose" ***29** prong—surplusage. Statements or conduct that are " 'part of ... the type of business transaction engaged in by defendants' " would necessarily encompass "representations of fact about that person's ... business operations, goods, or services, that [are] made for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services" (§ 425.17(c)(1)) inasmuch as *every* business engages in efforts to obtain approval for, promote, or secure sales or transactions in its goods or services. Indeed, Simpson concedes that "a grocer's advertisement in advance of intended sales" falls within its broad definition of the delivery prong "to the extent the advertising informs the public about the availability of the product for delivery" *or* "to the extent the advertising keeps the product in the public eye and bolsters its prestige." With such a broad definition of the delivery prong, there would be no need for the content and purpose prong.

The legislative history further undermines Simpson's interpretation of the statute. Summaries of the bill prepared for various legislative committees consistently stated that section 425.17(c) would prohibit "the anti-SLAPP motion from being used in specified causes of action against businesses sued for statements or conduct consisting of representations of fact about their goods, services or business operations, or those of a competitor, when *those* statements or conduct were for the purpose of obtaining approval for, promoting, or securing sales or leases of the person's goods or services, *or* in the course of delivering the person's goods or services, if the intended audience is an actual or potential buyer or customer, or a person likely to repeat the statement to, or otherwise influence, an actual or potential buyer or customer, ..." (Legis. Analyst, 3d reading analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended July 8, 2003, p. 1, italics added; Assem. Com. on Judiciary, Analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended June 27, 2003, p. 2, italics added; Assem. Republican Caucus, analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended June 27, 2003, p. 1, italics added; see also Sen. Sheila Kuehl, letter to Governor Gray Davis, Sept. 3, 2003, p. 2.) In addition, an analysis prepared for the Senate Committee on the Judiciary noted that Senate Bill 515 was ***343** "consistent with the recommendation of the Senate Judiciary Committee analysis last year on [Senate Bill] 1651[,] which urged the sponsors to look at *the content and context* of the statement or conduct when crafting an exemption, rather than enacting a wholesale exclusion of a class of defendants[,] which had been proposed in [Senate Bill] 1651." (Sen. Com. on Judiciary, Analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended May 1, 2003, p. 9, italics added.) Simpson offers no explanation why the Legislature would have been so concerned about the content of the statement or conduct in the first part of section 425.17(c)(1) but would **1129** have abandoned any such concern in the remainder of the sentence.

[12] ***30** For these reasons, we interpret section 425.17(c) to exempt from the anti-SLAPP law a cause of action arising from commercial speech when (1) the cause of action is against a person primarily engaged in the business of selling or leasing goods or services; (2) the cause of action arises from a statement or conduct by

that person consisting of representations of fact about that person's or a business competitor's business operations, goods, or services; (3) the statement or conduct was made either for the purpose of obtaining approval for, promoting, or securing sales or leases of, or commercial transactions in, the person's goods or services or in the course of delivering the person's goods or services; and (4) the intended audience for the statement or conduct meets the definition set forth in section 425.17(c)(2).

[13] Gore does not dispute that he is in the business of selling legal services, that Simpson's causes of action arise from Gore's advertisement, that the purpose of the advertisement was to promote Gore's legal services, or that the advertisement was addressed to a qualifying audience under section 425.17, subdivision (c)(2). The point of contention concerns whether the causes of action "aris[e] from ... representations of fact about [Gore's] ... business operations, goods, or services." (§ 425.17(c)(1).) We find that they do not.

Simpson's complaint asserts claims for defamation, trade libel, false advertising, and unfair business practices. The common theme among these causes of action is the allegation that the advertisement "communicates that Simpson's galvanized screws are defective." The complaint alleges in particular that the advertisement "is libelous on its face in that it falsely communicates to the reader that Simpson's products are defective"; that the advertisement "disparaged Simpson's goods in that the Advertisement falsely communicates to the reader that Simpson's galvanized screws are defective"; that these assertions in the advertisement "are false and misleading"; and that using "the false and misleading Advertisement to recruit potential plaintiffs to participate in an unjustified class action lawsuit against Simpson" was an unfair business practice.

We will assume arguendo that the advertisement implies that Simpson's galvanized screws are defective. As the Court of Appeal recognized, however, even an implication that Simpson's screws are defective "is not 'about' Gore's or a competitor's 'business operations, goods, or services....' (§ 425.17(c)(1).) It is, rather, a statement 'about' *Simpson*—or, more precisely, Simpson's products." It therefore falls squarely outside section 425.17(c)' s exemption for commercial speech.

Simpson contends that the advertisement does nonetheless satisfy the commercial speech exemption in that it "expressly states that 'an attorney' will 'investigate whether you have a potential claim" and that it also ***31** supports the inference "that Gore has investigated the named companies and has discovered that they are selling *****344** defective screws." Both of these statements are "about" Gore's business operations, but neither satisfies the elements of the commercial speech exemption to the anti-SLAPP law.

[14] Simpson's causes of action plainly do not "arise from" (§ 425.17(c)) the representation that an attorney will investigate "whether you have a potential claim." Simpson's complaint does not allege that this statement is false or even that it is defamatory. In addition, a promise of what an attorney will do if the reader were to respond to the advertisement "is not a representation of fact, but an agreement to take certain actions in the future." (*Navarro v. IHOP Properties, Inc.* (2005) 134 Cal.App.4th 834, 841, 36 Cal.Rptr.3d 385.) Consequently, it does not constitute "representations of fact about that person's ... business operations, goods, or services." (§ 425.17(c)(1).)

The alleged inference that Gore has investigated Simpson and discovered that the galvanized screws are defective is not obvious from the advertisement itself, which asserts only that users of these fasteners "may" have certain (but unspecified) legal rights and that an attorney would need to "investigate whether you have a potential claim." Even if ****1130** one were to draw this inference, however, it would be no more than an attempt to layer the allegedly defamatory inference itself—i.e., that Simpson's galvanized screws are defective—with an alleged inference that Gore had *discovered* the defect. Simpson cites no authority for expanding the scope of the commercial speech exemption in this manner. (Cf. *Stewart v. Rolling Stone LLC* (2010) 181 Cal.App.4th 664, 676, 105 Cal.Rptr.3d 98 [the commercial speech exemption did not apply to a claim that the defendant magazine wrongfully used plaintiffs' names for a Camel advertisement; "as plaintiffs concede, the goods they sell are copies of Rolling Stone magazine, not Camel cigarettes. More significantly, the statement or conduct at issue here did not consist of 'representations of fact about the business operations, goods, or services' of Rolling Stone or of any of defendants' business competitors. Instead, the representation at the center of this lawsuit is the representation that plaintiffs and their fellow musicians

endorse the sale and use of Camel cigarettes"]; accord, *New.Net v. Lavasoft* (C.D.Cal.2004) 356 F.Supp.2d 1090, 1104 [the commercial speech exemption did not apply because "the purportedly offending statements are not statements made about Defendant's product, but rather statements about Plaintiff and its products" and the two were not competitors]; see also *Troy Group, Inc. v. Tilson* (C.D.Cal.2005) 364 F.Supp.2d 1149, 1151, 1155 [defendant investment adviser's e-mail asking whether plaintiff corporation is one of "the biggest crooks on the planet or what?" is "clearly not about [defendant]'s business, rather it is about [plaintiff], which, as [plaintiffs] admit, is not a business competitor of [defendant]"].) We are reluctant to allow plaintiffs to evade the limitations of the statutory ***32** text by mere wordplay, especially given our obligation to construe the commercial speech exemption narrowly.

Moreover, Simpson has not attempted to recover damages here because of any implied representation that Gore allegedly *discovered* that Simpson's products were defective, but because Gore allegedly *implied* that they were defective. Whether the Simpson products are in fact defective is beyond the scope of this proceeding, but the inference that they are defective is not a representation of fact about *Gore's* business operations, goods, or services. The Court of Appeal stated the issue succinctly: "To the extent that Gore's advertisement 'consists of' representations about his services, Simpson's action does not 'aris[e] *****345** from' it; to the extent that Simpson's action 'aris[es] from' a representation by Gore, the representation was not 'about' Gore's or a competitor's services or business operations." [4]

Simpson argues next that the commercial speech exemption from dismissal under the anti-SLAPP statute should not require that the statement itself giving rise to the cause of action include factual representations about the defendant's or a business competitor's business operations, goods, or services, as long as the statement giving rise to the cause of action is *accompanied* by factual representations about the defendant's or a business competitor's business operations, goods, or services. The statute's plain language, however, is otherwise. The commercial speech exemption applies only to a cause of action "arising from" a statement (or conduct) that "consists of representations of fact about that person's or a business competitor's business operations, goods, or services...." (§ 425.17(c)(1).)

Simpson complains, with rhetorical flourish, that the advertisement "defam[es] Simpson in order to tout Gore and his services.... The tout and the defamation were of an inseparable whole, with the defamation serving as bait for the tout. The Court of Appeal's approach is as if to parse cheese from a mousetrap." But this is merely another way of saying that the speaker made a representation of fact about a *noncompetitor's* goods for the purpose of promoting the speaker's own services. Had the Legislature intended the commercial speech exemption to encompass representations of fact about *any* ****1131** business operations, goods, or services made for the purpose of promoting sales, leases, or transactions in the speaker's own goods or services, then it would not have limited the exemption to statements or conduct consisting of "representations of fact about *that person's or a business competitor's* business operations, goods, or services ...." (§ 425.17(c)(1); see *Mendoza v.* ***33** *ADP Screening and Selection Services, Inc.* (2010) 182 Cal.App.4th 1644, 1652, 107 Cal.Rptr.3d 294 ["the Legislature appears to have enacted section 425.17, subdivision (c), for the purpose of exempting from the reach of the anti-SLAPP statute cases involving comparative advertising by businesses."].)

[15] **[16]** The legislative history accords with the statute's plain language. As stated earlier, committee reports summarized the bill as "[p]rohibit[ing] the anti-SLAPP motion from being used in specified causes of action against businesses sued for statements or conduct *consisting of* representations of fact about their goods, services or business operations, or those of a competitor, *when those statements* ... were for the purpose of obtaining approval for, promoting, or securing sales or leases of the person's goods or services, or in the course of delivering the person's goods or services...." (Assem. Com. on Judiciary, Analysis of Sen. Bill No. 515 (2003–2004 Reg. Sess.) as amended June 27, 2003, p. 3, italics added.) The plain language and the legislative history each confirm that the statement or conduct giving rise to the cause of action must consist of factual representations about the speaker's (or a competitor's) goods, services, or business operations. Nothing in the plain language or the legislative history suggests it would be enough to protect against dismissal under the anti-SLAPP statute if the factual representations about the speaker's or a competitor's business simply appeared in the *****346** same publication as the statements actually giving rise to the cause of action. [5]

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Indeed, Simpson's proposed construction would seriously undermine the anti-SLAPP statute itself. As Gore points out, a press release critical of a political candidate—i.e., core political speech—would lose the protection of the anti-SLAPP statute if the press release *also* mentioned the products sold by the business. We therefore reject Simpson's expansive construction of the commercial speech exemption and conclude, in accordance with the trial court and the Court of Appeal, that Simpson's complaint was not exempted from the anti-SLAPP statute by section 425.17(c)(1).

The trial court went on to consider Gore's special motion to strike the complaint under section 425.16, determined that Simpson had failed to establish a probability of prevailing on the merits, and granted the special motion to strike. The Court of Appeal affirmed. The correctness of those rulings is beyond the scope of our grant of review, which was limited to the ***34** applicability of the commercial speech exemption to the anti-SLAPP statute set forth in section 425.17(c)(1).

DISPOSITION

The judgment of the Court of Appeal is affirmed.

WE CONCUR: GEORGE, C.J., KENNARD, WERDEGAR, CHIN, MORENO, and CORRIGAN, JJ.

All Citations

49 Cal.4th 12, 230 P.3d 1117, 109 Cal.Rptr.3d 329, 38 Media L. Rep. 1737, 10 Cal. Daily Op. Serv. 5946, 2010 Daily Journal D.A.R. 7087

Footnotes

1 SLAPP is an acronym for “strategic lawsuit against public participation.” (*Jarrow Formulas, Inc. v. LaMarche* (2003) 31 Cal.4th 728, 732, fn. 1, 3 Cal.Rptr.3d 636, 74 P.3d 737.) All further statutory references are to the Code of Civil Procedure unless otherwise indicated.

2 See *Leoni v. State Bar* (1985) 39 Cal.3d 609, 624, 217 Cal.Rptr. 423, 704 P.2d 183 (lawyer advertising is protected by the First Amendment).

3 As Simpson points out, *Brill* did place the burden on the defendant. But *Brill* analyzed only whether the applicability of the commercial speech exception was part of *Equilon's* first step, where the court decides whether the defendant has made a threshold showing the challenged cause of action arises from protected activity, or part of *Equilon's* second step, where the court determines whether the plaintiff has demonstrated a probability of prevailing on the claim. (*Brill, supra,* 132 Cal.App.4th at pp. 329–331, 33 Cal.Rptr.3d 371.) *Brill's* conclusion that the defendant had the burden of proof to establish the nonapplicability of the commercial speech exception was based solely on its classification of the issue as a first-step determination and did not at all consider section 425.17's status as an exception to section 425.16 or any canons of construction. (*Brill, supra,* at p. 331, 33 Cal.Rptr.3d 371.) *Brill Media Co., LLC v. TCW Group, Inc., supra,* 132 Cal.App.4th 324, 33 Cal.Rptr.3d 371, is therefore disapproved to the extent it is inconsistent with our holding here.

4 One can conceive of a cause of action arising from a representation of fact about the attorney's own services—such as a false claim that the attorney had already recovered a judgment against the manufacturer for the defective product—but the advertisement in this case did not contain such a representation.

5 Simpson complains that a party should not be able to defeat the commercial speech exception to the anti-SLAPP statute by parsing a two-sentence advertisement into its component parts. We agree. The proper test does not turn on the punctuation used in the advertisement, but on the basis for the cause of action. Here, the causes of action all arise from the inference that Simpson's products are defective, an inference that Simpson alleges is implied from the text of the advertisement. This inference, though, contains no representations of fact about *Gore's* business operations, goods, or services.

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34 Cal.App. 660, 168 P. 595

WILLIAM D. STEPHENS, Governor of the State of California, Petitioner,
v.
JOHN S. CHAMBERS, State Controller, Respondent.

Civ. No. 1757.
Court of Appeal, Third District, California.
September 17, 1917.

CONSTITUTIONAL LAW--APPROPRIATION OF PUBLIC MONEY FOR PEACE JUBILEE AT VICKSBURG--VALID LEGISLATIVE ENACTMENT--GIFT PROVISION NOT VIOLATED.
The act of the legislature which became effective July 31, 1917 (Stats. 1917, p. 1608), appropriating the sum of fifteen thousand dollars, to be expended by the Governor, in his discretion, for the purpose of assisting to defray the expenses of a public nature incident to the holding of the national memorial reunion and peace jubilee at Vicksburg, Mississippi, in October, 1917, is a valid enactment, and is not within the inhibition of section 31 of article IV of the Constitution, prohibiting any gift of public money to any individual or corporation, and interdicting the appropriation of public money for the purpose or benefit of any corporation or institution not under the exclusive management and control of the state as a state institution.

ID.--REQUIREMENTS OF BILL APPROPRIATING PUBLIC MONEY--CONSTITUTIONAL PROVISION NOT CONTRAVENED.
The act of the legislature which became effective July 31, 1917, appropriating public money for the purpose of assisting to defray the expenses of a public nature incident to the national memorial and peace jubilee at Vicksburg, Mississippi, in October, 1917, is not inconsistent with section 34 of article IV of the Constitution, declaring that no bill making an appropriation of money, except the general appropriation bill shall contain more than one item of appropriation, and that for a single and certain purpose to be expressed therein, because of the indefiniteness of the language of the act.

ID.--EXPENDITURE OF MONEY--DISCRETION OF GOVERNOR--VALIDITY NOT AFFECTED.
The act of the legislature which went into effect July 31, 1917, appropriating public money for the national peace jubilee celebration at Vicksburg, Mississippi, in October, 1917, is not void because it vests the Governor with discretion in the expenditure of the money appropriated.

APPLICATION for a Writ of Mandamus originally made to the District Court of Appeal for the Third Appellate District.

The facts are stated in the opinion of the court.

***661** L. T. Hatfield, for Petitioner.
U. S. Webb, Attorney-General, and Robert W. Harrison, Deputy Attorney-General, for Respondent.

HART, J.

This is an application for a writ of mandate requiring respondent, as state controller, to draw his warrant in favor of petitioner "for such portion of the sum of fifteen thousand dollars, as petitioner may require."

At the recent session of the legislature there was regularly passed an act entitled "An act to provide for the celebration of the national memorial reunion and peace jubilee at Vicksburg, Mississippi, and making an appropriation therefor," which act was by the Governor approved and took effect July 31, 1917 (Stats. 1917, p. 1608). Section 1 thereof reads, in part, as follows: "There is hereby appropriated … the sum of fifteen thousand dollars, to be expended by the Governor, in his discretion, for the purpose of assisting to defray the expenses of a public nature incident to the holding of the national memorial reunion and peace jubilee to commemorate the victories and virtues leading to the half century of peace and prosperity to the American nation, and further to strengthen the fraternal ties of amity in the United States," said reunion to be held at Vicksburg in October, 1917, on certain named days.

Section 2 provides that the Governor shall "demand from the state controller, and the state controller is hereby authorized and instructed upon such demand, to draw his warrant in favor of the Governor for the sum of fifteen thousand dollars to be expended by him as above provided, and the treasurer is hereby authorized and directed to pay the same."

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By way of answer and return to the petition for a writ of mandate, respondent alleges that said petition "does not state facts sufficient to entitle the petitioner to the relief prayed for," and it is contended that the attempted appropriation of money is contrary to the provisions of section 34, article IV, of the Constitution, which reads: "No bill making an appropriation of money, except the general appropriation bill, shall contain more than one item of appropriation, and that for one single and certain purpose, to be therein expressed."

Thus it will be observed that, so far as the pleadings in this proceeding are concerned, the legality of the statute or appropriation ***662** in question is attacked upon one ground only. Indeed, in his brief, the attorney-general appears to concede that it is within the constitutional competence of the legislature of this state to appropriate money from the funds of the state for the purpose and object for which the appropriation is made by the act under attack here, for he says: "In the determination of the validity of this appropriation, it is not necessary to question the objects and purposes of the reunion to be held at Vicksburg. It may well be admitted that such reunion tends to do all of the things expressed in the act as the reasons for holding such reunion. Nor do we here contend that the holding of such reunion is not a matter of state and national importance and one which it might well be to the state's advantage to encourage, even to the extent of appropriations of money to defray the expenses incident thereto." In thus expressing himself, the attorney-general doubtless took into consideration, as properly he should, the act of the Sixty-fourth Congress of the United States (Session of 1915-16)--Act Cong. Sept. 8, 1916, c. 464, 39 Stat. 812--whereby money was appropriated for defraying the expenses of the "National Memorial Celebration and Peace Jubilee at Vicksburg, in the year 1917, by the survivors of the armies of the Tennessee and of the Mississippi," who participated in the memorable battle of Vicksburg in the month of July, 1863, for the reason that the appropriation involved in the act whose validity is here challenged is in aid of the purposes and objects of said act of the national Congress. With this concession of the attorney-general that there legally reside in the state the power and the right to appropriate a reasonable amount of the public moneys to aid in the achievement of the purposes of the act of Congress referred to, further consideration herein thereof might well be waived or dismissed, but, in view of the strictness with which the Constitution, by certain provisions therein contained, guards the disposal of the public revenues, and of certain cases expounding those provisions, some observations with respect to that proposition need not be deemed out of place herein.

From what has already been said, it is doubtless plain enough that we are in full accord with the concession of the attorney-general that the legislature may, without offending any of the inhibitory mandates of the Constitution with regard to the appropriations of the public moneys, make such ***663** an appropriation as the one whose legality is challenged in this proceeding; and so we express ourselves because of the conviction that, while the legislature will not be permitted to go beyond the bounds expressly established by the people through their Constitution in the matter of the disposal of the revenues raised for the support of the state government. it would be opposed to and, indeed, conceivably in many instances, subversive of the highest ends and the best interests of, a government whose sovereignty and general policies are outlined and controlled by a written constitution, framed in language necessarily general, if it were found requisite, in constitutional construction, to hold that the terms of the organic law should on all occasions be accepted and applied in their literal sense, or that there are not certain matters incidental and necessary to every well-governed state and its subjects as to which the Constitution is silent, in so far as express language is concerned, and as to which legislation looking to the highest welfare of the governed is absolutely necessary. A written constitution, like a statute, cannot so deal with particulars as to meet or provide for every case or contingency which may arise and of which legislative cognizance is allowable if necessary to the complete enjoyment of those privileges, immunities, and rights which are of the essence, and, indeed, the primary and foremost objects of a government in which, like ours, ultimate sovereignty is in the people themselves. By this we do not mean to say that the limitations or barriers contained in the Constitution against the exercise of legislative power may be set aside or disregarded, or that the intent of the organic law, as it is to be gathered from the instrument itself, shall not in all cases prevail. Nor do we intend thus to imply that the courts, in the construction of a written constitution, may be governed by a change in public sentiment as to any subject to which express attention is given and as to which limitations are fixed by the Constitution. But what we do maintain is that, since a written constitution is intended as and is the mere framework according to whose

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general outlines specific legislation must be framed and modeled, and is therefore, as stated and as is essentially true, necessarily couched in general terms or language, it is not to be interpreted according to narrow or super-technical principles, but liberally and on broad general lines, so that it may accomplish in full measure ***664** the objects of its establishment and so carry out the great principles of government.

The Constitution of the United States involves a grant and limitation of powers. The federal government, through its Congress, can exercise or exert no power which is not clearly within the grant of the federal Constitution; and this means that Congress may exercise only the powers expressly conferred upon the federal government and such incidental or auxiliary powers as may be essential to the exercise and execution of the powers expressly granted. There is no provision in the national Constitution expressly authorizing the expenditure of public moneys for the purposes and objects stated in the act of Congress above referred to. Nor is there any single provision of that Constitution within the spirit or reason of which does authority for such an appropriation of the public moneys fall. The same is true as to the several acts of Congress pensioning soldiers who fought to uphold the Union in our domestic Civil War. But the latter acts, as well as the one giving rise to the appropriation herein attacked, have never been challenged upon the ground that they were *ultra vires,* or beyond the authority of Congress to enact. Perhaps, by applying to them the touchstone of strict technical principles of construction, their force as legal enactments might be destroyed. But no such view or method of construction as applied to those acts would by any court be accepted or resorted to. To the contrary, in comparing them with the Constitution, if, indeed, the solution of the question whether they are or are not valid involves a matter of constitutional construction, the courts, if discovering even no indirect or inferential authority for their enactment in the language of that instrument, would nevertheless find ample sanction for them in the general spirit of our national government and in the genius of our political institutions, as outlined and promulgated by the Constitution itself and so sustain them as treating with subjects which clearly fall, not within the letter of the organic law, but within the spirit and reason of those general policies which inhere, and of necessity must inhere, in every government framed and formed upon the lines of enlightened general principles--policies consistent and in harmony with the nature and form of the government as outlined by the primary law of the land and the absence of which would greatly and seriously curtail or ***665** restrict that full enjoyment of the rights of persons and of property which can only come from a government deriving its force from the consent of the governed. It would, indeed, come as a shock if the courts felt compelled to declare and so hold that laws pensioning those who fought to preserve the integrity of the American Union and who, from their accumulated years or disease, are unable to care for themselves, were beyond the power of Congress to enact. Such a judicial fiat would be universally denounced as repugnant to every consideration of governmental duty, obligation, and gratitude. But the motive underlying such legislation is much broader and more far-reaching in its effect upon the government of society than the mere consideration of gratitude. Undeniably, the stability of every civilized government and its political institutions wholly depends upon the patriotism and loyalty thereto of its subjects; hence it is the first duty of every government so to administer its affairs as to inspire in its citizens patriotism and loyalty to the fundamental political principles upon which it is founded, and, to that end, through appropriate policies, teach and exemplify the duty which every citizen owes to his country and its government. Therefore, as stated, legislation which provides for the pensioning of those who have fought the battles of their country for the preservation of its governments and who are in need of assistance involves not only the quality of gratitude, but a just and substantial recognition of services inspired by patriotism, without which battles cannot, as a rule, successfully be fought. If it may be said as to the present crisis with which our country is confronted that patriotism in our citizens has not been aroused, how infinitely worse would the conditions in that regard now be if, in the past, our government had wholly failed in a proper way to recognize and reward, in proper cases, those who had gone to the front and fought our battles in the past?

As we understand the congressional act in aid of the purposes and objects of which the appropriation challenged here was made by our own legislature, the great object and desideratum thereof is to bring about a sentiment of amity between those sections of our country who opposed each other in one of the most bitterly fought domestic wars of which history gives any record; for it is a matter of common historical knowledge that the bitterness of sentiment brought ***666** about between the northern and southern sections by that war existed in

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full vigor down to the opening of hostilities between this country and Spain, which ended with the late Spanish-American war. And there can hardly be any doubt that that same old feeling in some degree still lingers or exists. The governments of the Union and of the states could adopt no more effective policy for reuniting the two sections in one common political sentiment than that which is involved in and represented by the legislation in question. That the inevitable effect of such a gathering, annually held, as seems to be the policy of Congress, so long as there is a considerable number of the survivors of both sides of that war, will be ultimately to destroy every vestige of that old feeling of antagonism in political sentiment (we here use the word "political" in its more comprehensive sense), there cannot be the shadow of a doubt; and that the inevitable consequence of a condition so brought about will be to establish throughout the whole country a deeper, more abiding and a universal love for our common country and its government, is equally plain. Congress could have exercised no power or established no other policy more conducive to the general welfare of our government and the people, for no government can long exist with its people radically divided in sentiment upon the fundamental political doctrines upon which it is founded.

If, then, Congress, circumscribed as it is within the narrow bounds of granted and limited powers, may rightfully, in the absence of express authority therefor, but solely by the exertion of that power which must inhere in every government if the general welfare is on all occasions and in every emergency to be subserved as intended by the very nature and spirit of our form of government, appropriate moneys from the public revenues for the purpose of accomplishing the great ultimate object of the act in question, why may not a state, essentially a constituent part of the Union--which, indeed, goes to the making of the Union--make a like appropriation as in aid of the object thus to be achieved?

While the governments of the Union and the states are independent of each other, operate within distinctly different spheres, and are designed for the accomplishment of different specific objects, yet, upon general political or governmental policies their interests are common, and what in a political sense stands for the general welfare of the Union necessarily ***667** stands for the general welfare of the states. Unquestionably, the states, as separate entities and as component parts of the Union, are each equally with the Union interested in the crystallization and execution of any policy of the federal Union that will tend to perpetuate the permanency of the latter, for largely if not wholly upon the perpetuity of the Union depends the permanency of the states as governmental organizations. It follows, therefore, that the policy of the general government with respect to the subject matter of the act of Congress above mentioned is necessarily the policy of each of the states, and that within the latter, no less than within the federal government, resides the power of effectuating and applying that policy. In other words, the duty, if it be a duty, of contributing to the carrying out or execution of that policy rests no less upon the states than upon the federal government. And the right of the states to do so does not depend upon any authority vested in them by express language in their constitutions, nor is it to be controlled by the restrictions or limitations upon the legislative power contained in those instruments, but, as in the case of the federal government, arises from that inherent, dormant power which may legally be aroused to action, exerted and applied by all democratic governments, controlled by written constitutions, whenever the exigencies of government imperatively require its exertion and exercise--that power which, in a general sense, is analogous to the general war powers of the federal government, under which, as war measures, the latter may, as it is now doing, properly control trade principles and execute an infinite variety of other acts which, under normal conditions, approach if not in truth involve paternalism in government or unwarranted abridgments of individual rights as assured and guaranteed by the Constitution.

Thus, it is clear, the inhibitions of our state Constitution against any gift of public money to any individual, municipal or other corporation (article IV, section 31), and interdicting the appropriation of public money "for the purpose or benefit of any corporation, association, … or other institution not under the exclusive management and control of the state as a state institution" (Const., art. IV, sec. 22) have no application to this case. Indeed, it has been so held in a decision treating a proposition quite analogous in principle to that submitted for solution here. (***668** *Daggett v. Colgan,* 92 Cal. 53, [27 Am. St. Rep. 95, 14 L. R. A. 474, 28 Pac. 51].) That case involves an interesting and instructive discussion of the propositions to which we have hereinabove given considerable attention, and we may, therefore,

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pardonably and with advantage, reproduce herein an extended excerpt from the learned opinion therein. It should first be explained that the legislature of 1891 (Stats. 1891, p. 24) passed an act appropriating a large sum of money to be paid to the California Commission of the World's Fair Columbian Exposition, held in the city of Chicago, and to be used by said commission in the construction of buildings at said fair in which to maintain an exhibit of the industrial products of this state and to defray the expenses arising in connection with such exhibit. The state controller, claiming that the appropriation made by the act was in direct contravention of that part of section 22, article IV, of the Constitution above quoted herein, declined to draw his warrant in favor of said commissioners on the fund so appropriated. After discussing that proposition adversely to the position of the controller, the court, in its opinion, made these significant observations:

"The defendant further contends that the statute is unconstitutional for the reason that the appropriation thereby made is not for a public use, such as the state is authorized to make; that the maintenance of an exhibition of the products of the state in the manner contemplated does not fall within the legitimate authority of the state government.

"In passing upon this proposition, it is necessary to bear in mind that what is for the public good, and what are public purposes, 'are questions which the legislature must decide upon its own judgment, in respect to which it is vested with a large discretion which cannot be controlled by the courts, except, perhaps, where its action is clearly *evasive*.... Where the power which is exercised is legislative in its character, the courts can enforce *only* those limitations which the Constitution imposes; not those implied restrictions which, resting in theory only, the people have been satisfied to leave to the judgment, patriotism, and sense of justice of their representatives.' (Cooley's Constitutional Limitations, 154.)

"It is undoubtedly true that public money can be rightfully expended only for public purposes, but as well said by that eminent jurist, Judge Cooley, in delivering the opinion of the court in ***669** *People v. Salem,* 20 Mich. 452, [4 Am. Rep. 400]: '*Necessity* alone is not the test by which the limits of state authority in this direction are to be defined, but a wise statesmanship must look beyond the expenditures which are absolutely needful to the continued existence of organized government, and embrace others which may tend to make that government *subserve the general well-being of society,* and advance the present and *prospective happiness and prosperity of the people.*'

"In view of these principles of constitutional law, which are so well settled as to be placed beyond discussion or dispute, it is manifest, we think, that the court is not authorized to declare the act under consideration void, upon the theory that the expenditure thereby authorized can in no manner be considered as tending to promote the public welfare, which it is one great object of government to secure. The question whether the public interests of the state would be at all advanced by an exhibition of its products such as is contemplated by the act was an appropriate one for discussion in the halls of the legislature before its enactment, and for the consideration of the Governor before approving it, but it is not one for this court to decide, upon the individual views of its members concerning the wisdom or expediency of such legislation.

"There is no difference, except in degree, between the appropriation contained in this act and those which for years have been made without any question as to their validity, for the support of the state agricultural fair, and the various district agricultural societies throughout the state. The fact that this exhibit of the products of the state is to be made without the limits of the state does not change its essential character, or make it any less an occasion or purpose in which, in an enlarged sense, it may be said that the people of the state have an interest. So, also, it would be hard to distinguish this appropriation in principle from those appropriations which have been made from time to time for the maintenance of horticultural, viticultural, and other similar commissions. None of these, strictly speaking, are required for the proper administration of the government of the state, and possibly, in the opinion of many, call for an unjustifiable and useless expenditure of money. But the power of the legislature to create such commissions has never been doubted.

***670** "We know from the express declaration of the act of Congress authorizing the Columbian Exposition that the purpose of the exposition is to commemorate the four hundredth anniversary of the discovery of America,

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'by an exhibition of the resources of the United States of America, their development, and of the progress of civilization in the New World'; and that such exhibition is to be of a 'national and international character, so that not only the people of the Union and of this continent, but those of all nations, as well, can participate.'

"We have no doubt that it was fairly a matter within the power of the legislature to determine whether, as a matter of public policy and as tending to advance the best interests of its citizens, this state should join with its sister states, and with the government of the United States, in celebrating in the way suggested the historical event referred to.

"It has been held in many cases that a municipal corporation has no authority, under the general powers usually given such corporations, to appropriate money for the celebration of the anniversary of important events in the history of our country, such as the Fourth of July (*Hodges v. Buffalo,* 2 Denio (N. Y.), 110; *Hood v. Lynn,* 1 Allen (Mass.), 103) and the surrender of Cornwallis. (*Tash v. Adams,* 10 Cush. (Mass.) 252. See, also, *The Liberty Bell,* 23 Fed. 844.)

"These decisions, however, all rest upon the principle that municipal corporations have no powers except such as are specifically granted by the act of incorporation, or are necessary for the purpose of carrying into effect the powers expressly granted. *But it has never been doubted that the state could confer upon a city or town the authority to celebrate such important events in the history of the country as appeal to the patriotism or higher sentiments of the people, and to tax their citizens to pay the expense thereof.* Thus it was held that the city of Philadelphia had the power under its charter to provide for the entertainment of distinguished visitors upon the occasion of the celebration of the Centennial Anniversary of American Independence. (*Tatham v. Philadelphia,* 11 Phila. (Pa.) 276.) So, also, in Massachusetts, by general statutes, the power has been conferred upon towns to celebrate the centennial anniversary of their incorporation (*Hill v. East Hampton,* 140 Mass. 381, [4 N. E. 811]), and also to appropriate money for the celebration of holidays, and for ***671** other public purposes. (*Hubbard v. Taunton,* 140 Mass. 467, [5 N. E. 157].)

"These cases are authority for the proposition that the state itself, unless restrained by its Constitution, has the power to make appropriations for such purposes, because unless it possesses the power, it could not confer it upon its municipal corporations. Such expenditures are justified under the general power which the state has to provide for the public welfare--the limits of which are perhaps not capable of exact definition--*and are the same in principle as appropriations made for the building of monuments to commemorate great historical events, or for the erection in public places of the statues of those who by common consent are classed among the patriots or benefactors of the nation.*

"Undoubtedly this power may be the subject of great abuse, but this is no argument against its existence. The only protection against reckless and improvident appropriations for public purposes must be found in the character of those intrusted with the power of legislation, and in the integrity and firmness of the chief executive of the state."

Obviously, there is a distinction between the act questioned in the Daggett case and the act involved in this proceeding with respect to the specific objects of the respective appropriations of the public money. Both, however, aim at the accomplishment of the same general object, viz., the promotion of the general public welfare. For, so far as the promotion of the public welfare is concerned, no distinction in importance or effect between the two acts can logically be pointed out. The exploitation of the industrial resources of a state is surely a matter which directly affects and, where such resources are in magnitude such as to demonstrate the natural material wealth and prosperity of the state, promotes the public welfare. No less may be said of public acts looking to the promotion and fostering in the citizens of a state or nation sentiments of patriotism, which, as we have shown, and as is most obviously true, constitutes the essential mainspring of every stable government. What, indeed, would industrial prosperity count for in a country whose government was without the support of the patriotism and loyalty of its subjects? The past political history of Russia, at this writing in the throes of bitter political disturbances and turbulences, may well stand as an answer to the question.

***672** As stated in the opinion in the Daggett case, *supra,* the question whether the public interests of the state as well as of the nation of which the former is an essential part will be advanced by the meeting in reunion at Vicksburg of the survivors of both sides of the Civil War that fought

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at the battle known in history by the name of that city was an appropriate one for discussion in the halls of the legislature before the appropriation was made by a legislative act, and for the consideration of the executive before approving it. We must assume that the legislature and the Governor had before them facts and data upon which they were enabled to predicate their judgment that the state and the Union would be materially benefited by the reunion and thus the public welfare and general well-being of society subserved. Their conclusion regarding the act cannot, therefore, be impeached by the courts.

There is no language or provision in the statute appropriating the money indicating that any individual will or can, if the appropriation be properly expended, or dispensed according to the face of the act, receive a single cent as a gratuity or by way of assistance, but that the money appropriated shall be expended in such manner as the executive shall determine will the better and the more effectively effectuate the specific objects of the appropriation and the ultimate purpose to be thereby subserved. And herein lies the distinction between the appropriation in question and that considered and properly held invalid by this court in the case of *McClure v. Nye,* 22 Cal. App. 248, [[[133 Pac. 1145]. The act in that case attempted to appropriate the sum of fifteen thousand dollars, out of the state treasury "for the purpose of paying the transportation of certain veterans of the Civil War to Gettysburg, Pennsylvania, on the occasion of the fiftieth anniversary of the battle fought on that battlefield." Obviously, upon the very face of that provision the appropriation amounted to nothing less than a gift of public moneys, and hence flew squarely in the face of the provision of our Constitution against thus disposing of our public revenues. In the present case, as seen, the appropriation is to be used on the occasion of the reunion at Vicksburg for the purpose of effectuating the great, central object of the gathering, as pointed out by the act of Congress and the act here in question, viz., to strengthen the fraternal ties of amity in the United States. ***673** As shown, no express provision is made by the act for the payment of the transportation of veterans or other persons to Vicksburg, though we doubt not that if, in furtherance of the paramount and ultimate object of the reunion, it be necessary to apply some of the money in sending representatives from California to the reunion or convention, such expenditure would come within the legitimate purposes of the appropriation and the right of the state to bear.

We are now brought to the consideration of the principal point upon which the attorney-general relies to impeach the constitutional validity of the appropriation, viz.: That the act making the appropriation is inconsistent with the provisions of section 34 of article IV of the Constitution, which is above reproduced in full herein. The gravamen of the attorney-general's argument in support of this position is that the language of the act is so uncertain and indefinite that it cannot be determined therefrom whether the appropriation thereby provided for is or is not for a public purpose. This argument, no doubt, comes from the language of the act, "for the purpose of assisting to defray the expenses of a *public nature,"* etc. It may be conceded that this language is so general as to be ambiguous as to the specific purpose of the appropriation, and if the act contained no further amplification of the purpose for which the appropriation is designed than may be implied from those words-- that is, that the appropriation was for some unexpressed or undiscovered purpose--it might be necessary to hold that the position of the attorney-general is well taken. But the language referred to is immediately followed by other language which clearly and with certainty expresses the specific purpose of the appropriation--a purpose which the legislature has found refers to the general welfare of the state and, therefore, the expenses necessary for its execution a burden which may properly be borne by the state.

There is no ground to support the argument that the appropriation is not for a "single" purpose within the meaning of that word as it is employed in the section of the Constitution mentioned. The sole and only purpose of the appropriation, as is clearly deducible from the language of the act, is to assist in defraying the expenses of a convention of persons who are so to meet in reunion to effectuate a purpose by the execution of which, according to the tenor of the act here in ***674** question and the act of Congress above referred to, the public welfare of the state will be subserved.

Nor is there any legal reason which will uphold the objection that the act is invalid because it vests in the Governor discretion as to the expenditure of the money appropriated. This provision was doubtless inserted in the act for the purpose of committing to the judgment of the executive the determination of the manner in which the appropriation may be expended to the best and highest interests of the state. If, for illustration, it becomes

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necessary to send representatives from the state to the reunion, it is only proper that the Governor, upon whom the act fixes the responsibility for the expenditure of the money, should be clothed with some discretionary power as to the number of persons so to be sent, and as to the amount of money that should reasonably be expended for defraying the expenses of such representatives to Vicksburg and back and while there during the progress of the convention. This should be true, since the act itself does not undertake to point out specifically how the money shall be used. Of course, the presumption is that the executive will perform his duty under the act faithfully and in furtherance of the objects and purposes intended to be subserved thereby.

Our conclusion is that the appropriation is perfectly valid, and, accordingly, a writ of mandate will issue out of this court commanding and requiring the respondent, state controller, to draw his warrant or warrants on the fund appropriated by the act in favor of the Governor of the state of California, as provided by said act, and, in accordance with the stipulation heretofore filed herein by the attorneys of the respective parties, said writ is ordered to issue forthwith.

Chipman, P. J., and Burnett, J., concurred.

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DECLARATION OF SERVICE BY EMAIL

I, the undersigned, declare as follows:

I am a resident of the County of Sacramento and I am over the age of 18 years, and not a party to the within action. My place of employment is 980 Ninth Street, Suite 300, Sacramento, California 95814.

On September 11, 2017, I served the:

- **Notice of Complete Test Claim Filing, Schedule for Comments, Request for Administrative Record, and Notice of Tentative Hearing Date issued September 11, 2017**
- **Test Claim filed by City of Union City on June 30, 2017, cured August 14, 2017**

  California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, 16-TC-03
  City of Union City, Claimant

by making it available on the Commission's website and providing notice of how to locate it to the email addresses provided on the attached mailing list.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this declaration was executed on September 11, 2017 at Sacramento, California.

Jill L. Magee
Commission on State Mandates
980 Ninth Street, Suite 300
Sacramento, CA 95814
(916) 323-3562

COMMISSION ON STATE MANDATES

Mailing List

Last Updated: 9/8/17

Claim Number: 16-TC-03

Matter: California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049

Claimant: City of Union City

TO ALL PARTIES, INTERESTED PARTIES, AND INTERESTED PERSONS:

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Antonio Acosta, City Manager, *City of Union City*
34009 Alvarado-Niles Road, Union City, CA 94587
Phone: (510) 675-5351
tonya@unioncity.org

Socorro Aquino, *State Controller's Office*
Division of Audits, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-7522
SAquino@sco.ca.gov

Harmeet Barkschat, *Mandate Resource Services,LLC*
5325 Elkhorn Blvd. #307, Sacramento, CA 95842
Phone: (916) 727-1350
harmeet@calsdrc.com

Lacey Baysinger, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 324-0254
lbaysinger@sco.ca.gov

Cindy Black, City Clerk, *City of St. Helena*
1480 Main Street, St. Helena, CA 94574
Phone: (707) 968-2742
cityclerk@cityofsthelena.org

Allan Burdick,
7525 Myrtle Vista Avenue, Sacramento, CA 95831
Phone: (916) 203-3608
allanburdick@gmail.com

J. Bradley Burgess, *MGT of America*
895 La Sierra Drive, Sacramento, CA 95864
Phone: (916)595-2646
Bburgess@mgtamer.com

Gwendolyn Carlos, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 323-0706
gcarlos@sco.ca.gov

Daniel Carrigg, Deputy Executive Director/Legislative Director, *League of California Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8222
Dcarrigg@cacities.org

Annette Chinn, *Cost Recovery Systems,Inc.*
705-2 East Bidwell Street, #294, Folsom, CA 95630
Phone: (916) 939-7901
achinncrs@aol.com

Carolyn Chu, Senior Fiscal and Policy Analyst, *Legal Analyst's Office*
925 L Street, Sacramento, CA 95814
Phone: (916) 319-8326
Carolyn.Chu@lao.ca.gov

Michael Coleman, *Coleman Advisory Services*
2217 Isle Royale Lane, Davis, CA 95616
Phone: (530) 758-3952
coleman@muni1.com

Anita Dagan, Manager, Local Reimbursement Section, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 324-4112
Adagan@sco.ca.gov

Marieta Delfin, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-4320
mdelfin@sco.ca.gov

Donna Ferebee, *Department of Finance*
915 L Street, Suite 1280, Sacramento, CA 95814
Phone: (916) 445-3274
donna.ferebee@dof.ca.gov

Susan Geanacou, *Department of Finance*
915 L Street, Suite 1280, Sacramento, CA 95814
Phone: (916) 445-3274
susan.geanacou@dof.ca.gov

Dillon Gibbons, Legislative Representative, *California Special Districts Association*
1112 I Street Bridge, Suite 200, Sacramento, CA 95814
Phone: (916) 442-7887
dillong@csda.net

Catherine George Hagan, Senior Staff Counsel, *State Water Resources Control Board*
c/o San Diego Regional Water Quality Control Board, 2375 Northside Drive, Suite 100, San Diego,

CA 92108
Phone: (619) 521-3012
catherine.hagan@waterboards.ca.gov

Heather Halsey, Executive Director, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
heather.halsey@csm.ca.gov

Sunny Han, Project Manager, *City of Huntington Beach*
2000 Main Street, Huntington Beach, CA 92648
Phone: (714) 536-5907
Sunny.han@surfcity-hb.org

Chris Hill, Principal Program Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, Sacramento, CA 95814
Phone: (916) 445-3274
Chris.Hill@dof.ca.gov

Justyn Howard, Program Budget Manager, *Department of Finance*
915 L Street, Sacramento, CA 95814
Phone: (916) 445-1546
justyn.howard@dof.ca.gov

Mark Ibele, *Senate Budget & Fiscal Review Committee*
California State Senate, State Capitol Room 5019, Sacramento, CA 95814
Phone: (916) 651-4103
Mark.Ibele@sen.ca.gov

Edward Jewik, *County of Los Angeles*
Auditor-Controller's Office, 500 W. Temple Street, Room 603, Los Angeles, CA 90012
Phone: (213) 974-8564
ejewik@auditor.lacounty.gov

Jill Kanemasu, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-9891
jkanemasu@sco.ca.gov

Anne Kato, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 324-5919
akato@sco.ca.gov

Anita Kerezsi, *AK & Company*
3531 Kersey Lane, Sacramento, CA 95864
Phone: (916) 972-1666
akcompany@um.att.com

Michael Lauffer, Acting Executive Director and Chief Counsel, *State Water Resources Control Board*
1001 I Street, 22nd Floor, Sacramento, CA 95814-2828
Phone: (916) 341-5183
mlauffer@waterboards.ca.gov

Hortensia Mato, *City of Newport Beach*
100 Civic Center Drive, Newport Beach, CA 92660

Phone: (949) 644-3000
hmato@newportbeachca.gov

Michelle Mendoza, *MAXIMUS*
17310 Red Hill Avenue, Suite 340, Irvine, CA 95403
Phone: (949) 440-0845
michellemendoza@maximus.com

Meredith Miller, Director of SB90 Services, *MAXIMUS*
3130 Kilgore Road, Suite 400, Rancho Cordova, CA 95670
Phone: (972) 490-9990
meredithcmiller@maximus.com

Gregory Newmark, *Meyers,Nave,Riback,Silver & Wilson*
Claimant Representative
555 12th Street, Suite 1500, Oakland, CA 94607
Phone: (510) 808-2000
gnewmark@meyersnave.com

Andy Nichols, *Nichols Consulting*
1857 44th Street, Sacramento, CA 95819
Phone: (916) 455-3939
andy@nichols-consulting.com

Arthur Palkowitz, *Artiano Shinoff*
2488 Historic Decatur Road, Suite 200, San Diego, CA 92106
Phone: (619) 232-3122
apalkowitz@as7law.com

Steven Pavlov, Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, Sacramento, CA 95814
Phone: (916) 445-3274
Steven.Pavlov@dof.ca.gov

Jai Prasad, *County of San Bernardino*
Office of Auditor-Controller, 222 West Hospitality Lane, 4th Floor, San Bernardino, CA 92415-0018
Phone: (909) 386-8854
jai.prasad@atc.sbcounty.gov

Mark Rewolinski, *MAXIMUS*
808 Moorefield Park Drive, Suite 205, Richmond, VA 23236
Phone: (949) 440-0845
markrewolinski@maximus.com

Nick Romo, Policy Analyst, *League of California Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8254
nromo@cacities.org

Camille Shelton, Chief Legal Counsel, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
camille.shelton@csm.ca.gov

Carla Shelton, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 327-6490
carla.shelton@csm.ca.gov

Jim Spano, Chief, Mandated Cost Audits Bureau, *State Controller's Office*
Division of Audits, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 323-5849
jspano@sco.ca.gov

Dennis Speciale, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 324-0254
DSpeciale@sco.ca.gov

Jolene Tollenaar, *MGT of America*
2251 Harvard Street, Suite 134, Sacramento, CA 95815
Phone: (916) 243-8913
jolenetollenaar@gmail.com

Evelyn Tseng, *City of Newport Beach*
100 Civic Center Drive, Newport Beach, CA 92660
Phone: (949) 644-3127
etseng@newportbeachca.gov

Renee Wellhouse, *David Wellhouse & Associates, Inc.*
3609 Bradshaw Road, H-382, Sacramento, CA 95927
Phone: (916) 797-4883
dwa-renee@surewest.net

Jennifer Whiting, Assistant Legislative Director, *League of California Cities*
1400 K Street, Suite 400, Sacramento , CA 95814
Phone: (916) 658-8249
jwhiting@cacities.org

Patrick Whitnell, General Counsel, *League of California Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8281
pwhitnell@cacities.org

Bruce Wolfe, Executive Officer, *San Francisco Bay Regional Water Quality Control B*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2314
bwolfe@waterboards.ca.gov

Hasmik Yaghobyan, *County of Los Angeles*
Auditor-Controller's Office, 500 W. Temple Street, Room 603, Los Angeles, CA 90012
Phone: (213) 974-9653
hyaghobyan@auditor.lacounty.gov

DEPARTMENT OF FINANCE
EDMUND G. BROWN JR. ▪ GOVERNOR
915 L STREET ■ SACRAMENTO CA ■ 95814-3706 ■ WWW.DOF.CA.GOV

October 10, 2017

Exhibit B

RECEIVED
October 10, 2017
Commission on State Mandates

Ms. Heather Halsey
Executive Director
Commission on State Mandates
980 Ninth Street, Suite 300
Sacramento, CA 95814

California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, 16-TC-03

Dear Ms. Halsey:

The Department of Finance (Finance) has reviewed the test claim on the California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049. The claimants allege the test claim permit is a reimbursable state mandate because the test claim permit requirements exceed federal law, were not included in the prior permit and, therefore, impose a new program or higher level of service on local agency dischargers.

Finance defers to the State Water Resources Control Board and the California Regional Water Quality Control Board, San Francisco Bay Region, on the impact of the Supreme Court decision *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749 on the federal law component of the state mandate determination. Finance also defers to the Boards on the assertion that the test claim activities impose a new program or higher level of service. Finance comments primarily on the adequacy of fee authority issue raised by the claimants.

Claimants argue they have no fee authority or revenue source other than their general fund to fully cover the alleged mandated costs incurred for the claimed activities. Finance believes claimants do have stormwater fee authority undiminished by Propositions 218 or 26. Notably, Proposition 26 specifically excludes assessments and property-related fees imposed in accordance with Proposition 218 from the definition of taxes (Art. XIIIC, § 1, subd. (e)(7)). Further, claimants have authority to impose property-related fees under their police power for alleged mandated permit activities whether or not it is politically feasible to impose such fees via voter approval as may be required by Proposition 218. Local governments can choose not to submit a fee to the voters and voters can indeed reject a proposed fee, but not with the effect of turning permit costs into state reimbursable mandates.

In *Clovis Unified School Dist. v. Chiang* (2010) 188 Cal. App.4th 794, college districts challenged the State Controller's mandate claiming instructions that automatically reduced reimbursement claims by the amount the districts are statutorily authorized to charge students for health fees, regardless of whether the districts chose to charge the fees or not. The court held that "[to] the extent a local agency or school district 'has the authority' to charge for the mandated program or increased level of service, that charge cannot be recovered as a state-mandated cost. (*Clovis* at p. 812). The court reasoned that "this basic principle flows from common sense as well. As the Controller succinctly puts it, 'Claimants can choose not to require these fees, but not at the state's expense.'" (*Ibid.*)

The same reasoning applies to claimants here. They can choose not to put a fee to the voters, or the voters can reject a fee, but not at the state's expense. The application of Proposition 218 does not result in alleged mandate costs recoverable solely from tax proceeds. Sufficient fee authority exists, regardless of political feasibility. Under Government Code section 17556, subdivision (d), claimants have authority to impose fees sufficient to pay for permit activities and they are not eligible for mandate reimbursement.

If the Commission were to conclude the permit imposes reimbursable mandated costs, claimants identified potentially offsetting revenue, including Proposition 84 grant funds, other grant funds, and the Clean Water Fund that should reduce those costs and be identified by the Commission.

Sincerely,

JUSTYN HOWARD
Program Budget Manager

DECLARATION OF SERVICE BY EMAIL

I, the undersigned, declare as follows:

I am a resident of the County of Sacramento and I am over the age of 18 years, and not a party to the within action. My place of employment is 980 Ninth Street, Suite 300, Sacramento, California 95814.

On October 11, 2017, I served the:

- **Department of Finance's (Finance's) Comments on the Test Claim filed October 10, 2017**

  California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, 16-TC-03
  City of Union City, Claimant

by making it available on the Commission's website and providing notice of how to locate it to the email addresses provided on the attached mailing list.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this declaration was executed on October 11, 2017 at Sacramento, California.

Jill L. Magee
Commission on State Mandates
980 Ninth Street, Suite 300
Sacramento, CA 95814
(916) 323-3562

COMMISSION ON STATE MANDATES

Mailing List

Last Updated: 9/21/17

Claim Number: 16-TC-03

Matter: California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049

Claimant: City of Union City

TO ALL PARTIES, INTERESTED PARTIES, AND INTERESTED PERSONS:

Each commission mailing list is continuously updated as requests are received to include or remove any party or person on the mailing list. A current mailing list is provided with commission correspondence, and a copy of the current mailing list is available upon request at any time. Except as provided otherwise by commission rule, when a party or interested party files any written material with the commission concerning a claim, it shall simultaneously serve a copy of the written material on the parties and interested parties to the claim identified on the mailing list provided by the commission. (Cal. Code Regs., tit. 2, § 1181.3.)

Antonio Acosta, City Manager, *City of Union City*
34009 Alvarado-Niles Road, Union City, CA 94587
Phone: (510) 675-5351
tonya@unioncity.org

Socorro Aquino, *State Controller's Office*
Division of Audits, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-7522
SAquino@sco.ca.gov

Harmeet Barkschat, *Mandate Resource Services,LLC*
5325 Elkhorn Blvd. #307, Sacramento, CA 95842
Phone: (916) 727-1350
harmeet@calsdrc.com

Lacey Baysinger, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 324-0254
lbaysinger@sco.ca.gov

Cindy Black, City Clerk, *City of St. Helena*
1480 Main Street, St. Helena, CA 94574
Phone: (707) 968-2742
cityclerk@cityofsthelena.org

Allan Burdick,
7525 Myrtle Vista Avenue, Sacramento, CA 95831
Phone: (916) 203-3608
allanburdick@gmail.com

J. Bradley Burgess, *MGT of America*
895 La Sierra Drive, Sacramento, CA 95864
Phone: (916)595-2646
Bburgess@mgtamer.com

Gwendolyn Carlos, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 323-0706
gcarlos@sco.ca.gov

Daniel Carrigg, Deputy Executive Director/Legislative Director, *League of California Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8222
Dcarrigg@cacities.org

Annette Chinn, *Cost Recovery Systems,Inc.*
705-2 East Bidwell Street, #294, Folsom, CA 95630
Phone: (916) 939-7901
achinncrs@aol.com

Carolyn Chu, Senior Fiscal and Policy Analyst, *Legal Analyst's Office*
925 L Street, Sacramento, CA 95814
Phone: (916) 319-8326
Carolyn.Chu@lao.ca.gov

Michael Coleman, *Coleman Advisory Services*
2217 Isle Royale Lane, Davis, CA 95616
Phone: (530) 758-3952
coleman@muni1.com

Anita Dagan, Manager, Local Reimbursement Section, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 324-4112
Adagan@sco.ca.gov

Marieta Delfin, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-4320
mdelfin@sco.ca.gov

Donna Ferebee, *Department of Finance*
915 L Street, Suite 1280, Sacramento, CA 95814
Phone: (916) 445-3274
donna.ferebee@dof.ca.gov

Susan Geanacou, *Department of Finance*
915 L Street, Suite 1280, Sacramento, CA 95814
Phone: (916) 445-3274
susan.geanacou@dof.ca.gov

Dillon Gibbons, Legislative Representative, *California Special Districts Association*
1112 I Street Bridge, Suite 200, Sacramento, CA 95814
Phone: (916) 442-7887
dillong@csda.net

Catherine George Hagan, Senior Staff Counsel, *State Water Resources Control Board*
c/o San Diego Regional Water Quality Control Board, 2375 Northside Drive, Suite 100, San Diego,

CA 92108
Phone: (619) 521-3012
catherine.hagan@waterboards.ca.gov

Heather Halsey, Executive Director, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
heather.halsey@csm.ca.gov

Sunny Han, Project Manager, *City of Huntington Beach*
2000 Main Street, Huntington Beach, CA 92648
Phone: (714) 536-5907
Sunny.han@surfcity-hb.org

Chris Hill, Principal Program Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, Sacramento, CA 95814
Phone: (916) 445-3274
Chris.Hill@dof.ca.gov

Justyn Howard, Program Budget Manager, *Department of Finance*
915 L Street, Sacramento, CA 95814
Phone: (916) 445-1546
justyn.howard@dof.ca.gov

Mark Ibele, *Senate Budget & Fiscal Review Committee*
California State Senate, State Capitol Room 5019, Sacramento, CA 95814
Phone: (916) 651-4103
Mark.Ibele@sen.ca.gov

Edward Jewik, *County of Los Angeles*
Auditor-Controller's Office, 500 W. Temple Street, Room 603, Los Angeles, CA 90012
Phone: (213) 974-8564
ejewik@auditor.lacounty.gov

Jill Kanemasu, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-9891
jkanemasu@sco.ca.gov

Anita Kerezsi, *AK & Company*
3531 Kersey Lane, Sacramento, CA 95864
Phone: (916) 972-1666
akcompany@um.att.com

Michael Lauffer, Acting Executive Director and Chief Counsel, *State Water Resources Control Board*
1001 I Street, 22nd Floor, Sacramento, CA 95814-2828
Phone: (916) 341-5183
mlauffer@waterboards.ca.gov

Hortensia Mato, *City of Newport Beach*
100 Civic Center Drive, Newport Beach, CA 92660
Phone: (949) 644-3000
hmato@newportbeachca.gov

Michelle Mendoza, *MAXIMUS*
17310 Red Hill Avenue, Suite 340, Irvine, CA 95403

Phone: (949) 440-0845
michellemendoza@maximus.com

Meredith Miller, Director of SB90 Services, *MAXIMUS*
3130 Kilgore Road, Suite 400, Rancho Cordova, CA 95670
Phone: (972) 490-9990
meredithcmiller@maximus.com

Gregory Newmark, *Meyers,Nave,Riback,Silver & Wilson*
Claimant Representative
555 12th Street, Suite 1500, Oakland, CA 94607
Phone: (510) 808-2000
gnewmark@meyersnave.com

Andy Nichols, *Nichols Consulting*
1857 44th Street, Sacramento, CA 95819
Phone: (916) 455-3939
andy@nichols-consulting.com

Arthur Palkowitz, *Artiano Shinoff*
2488 Historic Decatur Road, Suite 200, San Diego, CA 92106
Phone: (619) 232-3122
apalkowitz@as7law.com

Steven Pavlov, Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, Sacramento, CA 95814
Phone: (916) 445-3274
Steven.Pavlov@dof.ca.gov

Jai Prasad, *County of San Bernardino*
Office of Auditor-Controller, 222 West Hospitality Lane, 4th Floor, San Bernardino, CA 92415-0018
Phone: (909) 386-8854
jai.prasad@atc.sbcounty.gov

Mark Rewolinski, *MAXIMUS*
808 Moorefield Park Drive, Suite 205, Richmond, VA 23236
Phone: (949) 440-0845
markrewolinski@maximus.com

Nick Romo, Policy Analyst, *League of California Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8254
nromo@cacities.org

Carla Shelton, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 327-6490
carla.shelton@csm.ca.gov

Camille Shelton, Chief Legal Counsel, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
camille.shelton@csm.ca.gov

Jim Spano, Chief, Mandated Cost Audits Bureau, *State Controller's Office*
Division of Audits, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 323-5849
jspano@sco.ca.gov

Dennis Speciale, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 324-0254
DSpeciale@sco.ca.gov

Derk Symons, Staff Finance Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, Sacramento, CA 95814
Phone: (916) 445-3274
Derk.Symons@dof.ca.gov

Jolene Tollenaar, *MGT of America*
2251 Harvard Street, Suite 134, Sacramento, CA 95815
Phone: (916) 243-8913
jolenetollenaar@gmail.com

Evelyn Tseng, *City of Newport Beach*
100 Civic Center Drive, Newport Beach, CA 92660
Phone: (949) 644-3127
etseng@newportbeachca.gov

Renee Wellhouse, *David Wellhouse & Associates, Inc.*
3609 Bradshaw Road, H-382, Sacramento, CA 95927
Phone: (916) 797-4883
dwa-renee@surewest.net

Jennifer Whiting, Assistant Legislative Director, *League of California Cities*
1400 K Street, Suite 400, Sacramento , CA 95814
Phone: (916) 658-8249
jwhiting@cacities.org

Patrick Whitnell, General Counsel, *League of California Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8281
pwhitnell@cacities.org

Bruce Wolfe, Executive Officer, *San Francisco Bay Regional Water Quality Control B*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2314
bwolfe@waterboards.ca.gov

Hasmik Yaghobyan, *County of Los Angeles*
Auditor-Controller's Office, 500 W. Temple Street, Room 603, Los Angeles, CA 90012
Phone: (213) 974-9653
hyaghobyan@auditor.lacounty.gov

January 31, 2018

Exhibit C

RECEIVED
February 1, 2018
Commission on State Mandates

LATE FILING

VIA DROP BOX

Heather Halsey, Executive Director
Commission on State Mandates
980 Ninth Street, Suite 300
Sacramento, CA 95814

Re: San Francisco Bay Regional Water Quality Control Board Response to Union City Test Claim 16-TC-03 (Order No. R2-2015-0049)

Dear Ms. Halsey,

The San Francisco Bay Regional Water Quality Control Board (Regional Water Board) resubmits this response to Test Claim 16-TC-03 (Claim) and supporting attachments. These attachments include the Regional Board's record for Order No. R2-2015-0049 (Permit or MRP 2.0) as well as petitions for review of the Permit filed with the State Water Resources Control Board (State Board) and the Regional Board's response to the petitions. The complete State Board record has not been included because the State Board has not taken any action related to the petitions or the Permit. If the Permit is modified by action of the State Board, the Regional Board, or a court, we will advise the Commission accordingly.

As anticipated in our January 16 and January 24, 2018 notices, we have reformatted the attachments to make them searchable, to remove password protections, and to add Bates Numbers; corrected minor errors in the index; and made changes to the brief to include an omitted argument (pp. 7-8), to refine some of the information in the permit table (pp. 22-31), to correct errors in citations, and to add citations to Bates Numbers.

The Test Claim arises from a National Pollutant Discharge Elimination System (NPDES) Permit (Permit or MRP 2.0) (Order No. R2-2015-0049). The Permit authorizes the discharge of stormwater runoff from the municipal separate storm sewer systems (MS4s) of 76 municipalities and local agencies in the San Francisco Bay Area (Bay Area) (collectively Permittees). The Regional Water Board issued the Permit pursuant to the requirements of the Clean Water Act[1],

[1] Federal Water Pollution Control Act (FWPCA; 33 USCA §§ 1251 *et seq.*). The federal Act is referred to herein as the Clean Water Act (CWA) and the code sections used are for the CWA, which differ from the United States Annotated Code.

its implementing regulations, and guidance from the United States Environmental Protection Agency (U.S. EPA).

The first section of the Clean Water Act states Congress's intent "that the discharge of pollutants into the navigable waters be *eliminated* by 1985." Fundamentally, the Clean Water Act prohibits *any* discharge into navigable waters.[2] Claimant even concedes that Section 402(p) of the Clean Water Act mandates that an MS4 permit "*shall* include a requirement to effectively *prohibit* non-storm water discharges into the storm sewers[3]." On its face, therefore, the Clean Water Act *prohibits all* non-storm water discharges into the storm sewers. No trash. No PCBs.[4] No mercury.

The Ninth Circuit noted that "Stormwater runoff is one of the most significant sources of water pollution in the nation, at times "comparable to, if not greater than, contamination from industrial and sewage sources … Storm sewer waters carry suspended metals, sediments, algae-promoting nutrients (nitrogen and phosphorous), *floatable trash*, used motor oil, raw sewage, pesticides, and other *toxic contaminants* into streams, rivers, lakes and estuaries across the United States."[5] The requirements to control trash, mercury and PCBs thus are at the heart of a stormwater program.

Over the past two hundred years, thousands of mercury- and PCBs-containing buildings have been built and millions of trash-creating residents have settled in the Bay Area. The Regional Water Board and Permittees recognize that achieving zero discharge into the storm sewers is not a threshold that the Permittees can reach instantaneously. A permit that is completely consistent with the Clean Water Act – prohibiting *any* discharge – would result in Clean Water Act citizen suits against every discharger – none of whom could comply with such a permit requirement for years. It is only by virtue of permit provisions – including those at issue here - that any discharger may discharge *at all.*[6] The Permit therefore, not unlike a compliance schedule, gives the dischargers time and assists in developing methodologies to reach the end goal established by the Clean Water Act. Through each iteration of the San Francisco Bay MS4 permit, dischargers have improved the water quality of the MS4 discharges, gaining ground toward the Clean Water Act's fundamental prohibition. Ironically, the Regional Water Board finds itself defending a permit that is more *lenient* than what the Clean Water Act actually requires. It is incomprehensible that complying with a *less stringent permit* than the strict prohibition in the Clean Water Act could impose *additional* costs to the dischargers not required by federal law. But that is what Claimant argues here.

The Test Claim seeks reimbursement by the State of California for expenses Claimant contends it has incurred or will incur in implementing a select few provisions of the Permit. Specifically,

---

[2] CWA § 301, subd. (a).

[3] Test Claim, p. 5.3.

[4] Polychlorinated biphenyls are commonly referenced as "PCBs."

[5] *Environmental Defense Center, Inc. v. U.S. E.P.A.* (9th Cir. 2003) 344 F.3d 832, 840-841 (emphases added).

[6] CWA § 402, subd. (a)(1) and (2).

Claimant contests the trash load reduction provision (C.10) and mercury and PCB controls (included in Provisions C.3.j, C.11 and C.12).[7] There is also a prophylactic argument that monitoring provisions of C.8 are unfunded mandates. Claimant concedes that the MRP 2.0 adds nothing to the same requirements included in the 2009 version of the Permit (2009 MRP).[8]

To obtain reimbursement, Claimant must prove all of the following:

1. Claimant is required to use tax monies for Permit implementation. Here, 2017 legislation "reaffirms and reiterates" that municipalities are able to raise fees for all costs associated with implementing the Permit. Many other authorities and Permittees' own experience demonstrates this is true.
2. The costs are mandated by the State, rather than federal law, and must provide that any additional costs beyond the federal mandate are substantial and not *de minimis*. In fact, federal law requires each of the contested Permit provisions.
3. Either that (1) the program must carry out a governmental function of providing services to the public; or (2) the requirements, to implement a state policy, impose unique requirements on local governments and do not apply generally to all residents and entities in the State. In this case, NPDES permits governing private entities contain similar provisions requiring that those entities manage stormwater to avoid discharges of trash, PCBs and mercury, and monitor and report on those efforts. The contested provisions of the Permit are not unique to municipalities.
4. That the requirements constitute a new or higher level of service. Claimant's own papers admit that numerous provisions were already required and evidence demonstrates that Claimant voluntarily chose to perform various activities.

In order to prevail, Claimant would have to prove that it meets *all* of the above criteria. Here, the evidence is to the contrary and the Commission therefore should reject the Test Claim.

I. Background

U.S. EPA is the federal agency responsible for administering the Clean Water Act. Pursuant to federal law, U.S. EPA authorized the Regional Water Board to issue NPDES permits, including the Permit here. Federal authority forms the entire legal basis for the Permit provisions.[9] The Permit regulates the discharge of stormwater runoff from the MS4s of 76 cities, counties and special districts. The Clean Water Act requires that local agencies must apply for and receive permits regulating discharges of pollutants from the MS4s to waters of the United States.[10]

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[7] Test Claim, p. 5.10.

[8] *Ibid.*

[9] See Item 467, MRP 2.0 Fact Sheet, Bates No. 83728 ("[T]his Permit implements federally-mandated requirements under CWA section 402, subdivision (p)(3)(B)") and 83724 ("The Basin Plan's comprehensive program requirements are designed to be consistent with federal regulations (40 CFR Parts 122-124) and are implemented through issuance of NPDES permits to owners and operators of MS4s").

[10] CWA § 402; *NRDC v. U.S. EPA* (9th Cir.) 966 F.2d 1292, 1295-96.

In response to the Clean Water Act amendments, the Regional Water Board issued municipal storm water Phase I permits to the entire county-wide urban areas of Santa Clara (1990), Alameda County (1991), Contra Costa County (1993), San Mateo County (1993), and the cities of Fairfield (1995), Suisun City (1995) and Vallejo (1998).[11] Starting in 2009, the Water Board began regulating Permittees under region-wide MS4 permits. That permit, the 2009 Municipal Regional Stormwater Permit (2009 MRP), regulated 76 municipalities and local agencies (Permittees) in the San Francisco Bay region.[12] Between 1987 and 2015, those permits were updated and refined to take into account EPA guidance and improved understanding of stormwater controls and monitoring.

To develop MRP 2.0, Regional Water Board staff worked with all municipalities to identify the common actions and controls in the plans and translated them into specific permit requirements in provisions for each of the base program elements. Regional Water Board Staff had approximately "100 meetings over two years with the Permittees, U.S. EPA, and other interests. These were both broad meetings about the entirety of the permit, as well as subject-specific work group meetings such as on PCBs, trash, or Green Infrastructure."[13] The resulting requirements specified applicability, scope, and minimum levels of effort required of actions and controls based on practicability, effectiveness, and costs of the actions and controls. As hoped, the resulting requirements also provided a tangible means of tracking and evaluating compliance with requirements and significantly reduced the burden of producing and reviewing annual reports.

On November 19, 2015, the Regional Water Board unanimously adopted Order No. R2-2015-0049, reissuing NPDES Permit No. CAS612008, and governing discharges from the MS4s of 76 jurisdictions and entities. As required by federal statute and regulations, the Permit contains requirements for the Permittees to take actions to reduce the flow of pollutants into waters in the San Francisco Bay region. The Permit is the fifth generation of municipal stormwater permits in the San Francisco Bay region, largely a continuation of the 2009 MRP, and therefore is colloquially referenced as "MRP 2.0."

While most requirements of MRP 2.0 are identical to the previous iteration, the Permit also contains new requirements pursuant to federal law, and adds implementation alternatives. These provisions incorporate key findings of the State Water Resources Control Board's (State Water Board's) issuance of State Water Board Order WQ 2015-0075 (Order WQ 2015-0075), pertaining to the Los Angeles MS4 (LA MS4). The Permit made only minimal adaptions and modifications from the 2009 MRP to require more targeted measures with documented success. In its comments on the draft Permit, U.S. EPA "underscore[d] [its] support for Water Board's position of including clear milestones and deadlines to evaluate pollutant-specific progress

[11] For more on the history of the earlier permit iterations, please see the Water Board's December 20, 2016 submission to the Commission.

[12] Item 721, 2009 MRP, Bates No. 109543-109833.

[13] Item 469, Nov. 18 Transcript, Bates No. 84006.

towards necessary water quality improvements and restoring beneficial uses."[14] The Permit provides minimum implementation levels (measurable outcomes), but allows Permittees flexibility to take into account the size of their respective jurisdictions and resources available to each. A number of permittees petitioned MRP 2.0 to the State Board, but as stated in nearly every petition Permittees filed, "the vast majority of MRP 2.0 was not the subject of significant dispute and is a tribute to an otherwise high level of cooperation between [Permittees] and the Regional Board staff." A number of Permittees petitioned the State Board, contesting MRP 2.0's adoption of numeric effluent limits (as opposed to narrative), the adequacy of the Permit's trash and various procedural issues.

Among other issues raised, and in contrast to Claimant's assertion that MRP 2.0 is an unfunded State mandate, San Francisco Baykeeper has also challenged the adequacy of monitoring provisions and the legality of the "safe harbor," claiming that the Regional Water Board failed to comply with federal authorities which require more *stringent* provisions. Specifically, Baykeeper claims the Regional Water Board:

> A. Improperly adopted safe harbor provisions in Section C.1 of the Permit that excuse compliance with the Permit's Receiving Water Limitations and Discharge Prohibitions for specific pollutants and receiving waters, in violation of the anti-backsliding requirements of the Federal WaterPollution Control Act, 33 U.S.C. § 1251 et seq. ("Clean Water Act" or "Act") (see 33 U.S.C. § 1342(o); 40 C.F.R. 122.44(l));
>
> C. Failed to include monitoring provisions in Sections C.8 and C.10 of the Permit that "assure compliance with permit limitations" or "yield data which are representative of the monitored activity," in violation of the Clean Water Act (see 40 C.F.R. §§ 122.44(i)(1), 122.48(b));[15]

The State Water Board has not issued an order or held a hearing on the petition as of this writing.[16]

Most permittees have funded their stormwater programs via fees on inspection and redevelopment. Permittees' Annual Reports demonstrate that nearly all are in compliance.[17]

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[14] Item 729, U.S. EPA Letter to SF Water Board, Bates No. 110608.

[15] Item 666, Baykeeper Petition, Bates No. 104302.

[16] Permittees' Petitions to State Water Board are included as Items 657-668, starting at Bates No. 103750, and the Regional Water Board's Response to those Petitions is Item 656, Bates No. 103656.

[17] E.g., Item 884, Union City 2016-2017 Annual Report, Bates No. 131982-131984, 132016 (documenting compliance with green infrastructure requirements, including implementation of GI projects, and 74.35% trash load reduction); Item 727, Berkeley 2016-2017 Annual Report, Bates No. 110487 ("The City is currently in compliance with all requirements of the Order."); Item 857, Oakland 2016-2017 Annual Report, Bates No. 128106-128110, 128183 (demonstrating 74.7% trash reduction, completion of green infrastructure tasks); Clayton 2016-2017 Annual Report, Item 891, Bates No. 133632 ("I want to assure the board staff that the City of Clayton has done all the tasks required for FY 16-17 in the Annual Report…."); Item 910, Walnut Creek 2016-2017 Annual Report, at Bates No. 135417, 135456 (confirming approval of Green Infrastructure Framework/Work Plan and other GI-related tasks and 96.3% trash load reduction); Item 838, 2017 Foster City Annual Report, at Bates No. 125976 ("The Annual Report provides documentation of compliance activities during FY16/17 and related accomplishments."); Item 868, San Jose 2016-

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The seven permittees[18] not in compliance have plans to come into compliance. A better showing needs to demonstrate actual costs incurred from general funds before granting any of the test claims.[19]

II. The Fee Authority Exception Applies to the Test Claim

Claimant contends that, "[t]o the extent the Regional Water Board contends that the fee authority exception in section 17556, subdivision (d), is applicable to Union City's test claim …, the Regional Water Board bears the burden of proving the exception applies."[20] The Claimant states that it is "not aware of any state, federal or non-local agency funds that are or will be available to fund the MRP2 new activities at issue in this Test Claim" and further claims that it "has no authority to increase … revenue sources without seeking voter approval under Proposition 218."[21] In fact, the Claimant has fee authority, as the Legislature recently affirmed in Senate Bill 231, approved by the Governor October 6, 2017. Costs are not mandated by the State when the local agency has "authority to levy service charges, fees, or assessments sufficient to pay for the mandated program or increased level of service.[22]

A. Senate Bill 231 Affirms Claimant's Ability to Increase Sewer Fees Without Voter Approval

Proposition 218 amended the California Constitution to require an election by impacted property owners for property-related fee increases.[23] Article XIII D, Section 6, subdivision (c) (referenced herein as Section 6), however, provides an exception to the election requirements "for fees or charges for sewer, water, and refuse collection services." Senate Bill 231 "reaffirms and reiterates" that the definition of "sewer" for purposes of Article XIII D includes "systems, all real estate, fixtures, and personal property owned, controlled, operated, or managed in connection with or to facilitate sewage collection, treatment, or disposition for sanitary *or drainage*

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2017 Annual Report, Bates No. 129469-129470, 129475, 129477-129478 (indicating compliance with trash load reduction, green infrastructure planning, and mercury and PCBs controls).

[18] These permittees are: Livermore, East Palo Alto, Pinole, Hercules, Unincorporated Alameda County, the City of Vallejo and Vallejo Sanitation and Flood Control District. See, e.g. City of Pinole 2017 Trash Addendum, Item 902, at Bates No. 134910 (plan to achieve compliance with trash provisions is already underway).

[19] There are a number of issues with the claimed costs. For example, Claimant identifies the purchase of a new Vactor truck to replace its old one as a cost associated with compliance. (Test Claim, pp. 5.13-5.14.) Claimant states that the cost was about $432,000 for the new truck, implicitly assigning this cost to MRP 2.0 requirements. They then indicate the new truck would be used about 3 months/year for trash capture device cleanout (and presumably 9 months/year for other projects), but do not pro-rate the costs. This is but one example of the types of questions that are not briefed here and should be resolved at the parameters and guidelines stage of the Commission's process. (Cal. Code Regs., tit. 2, § 1183.8) Should the Commission prefer that the Regional Water Board provide briefing on that issue before the P&G stage, the Regional Water Board respectfully requests an opportunity to do so.

[20] Test Claim, p. 5.7.

[21] Test Claim, pp. 5.23-5.24.

[22] See Gov. Code, § 17556, subd. (d).

[23] Cal. Const. §§ XIII C and D.

purposes, including lateral and connecting sewers, interceptors, trunk and outfall lines, sanitary sewage treatment or disposal plants or works, drains, conduits, outlets for *surface or storm waters*, and any and all other works, property, or structures necessary or convenient for the collection or disposal of sewage, industrial waste, *or surface or storm waters*."[24]

To the extent Claimant relies on *Howard Jarvis Taxpayers Ass'n v. City of Salinas* (2002) 98 Cal.App.4th 1351 as precluding the ability of a municipality to raise fees related to stormwater, the Legislature statutorily overturned that court's interpretation, finding that the court "failed to follow long-standing principles of statutory construction by disregarding the plain meaning of the term 'sewer,' and improperly substituted its own judgment for the judgment of voters.[25]

Accordingly, Claimant has the ability to increase sewer fees or charges without voter approval to cover any increased costs of implementing the permit.

B. The Permittees May Also Levy Regulatory Fees

The permittees are capable of crafting fees to cover the trash, mercury, PCB and green infrastructure provisions. The Supreme Court has validated the adoption of regulatory fees, providing they are not levied for unrelated revenue purposes.[26] It is reasonable to collect fees from developers for the costs associated with implementing the mercury, PCBs and green infrastructure provisions. Similarly, the costs of full trash capture can be allocated to businesses responsible for generating high trash areas. Asking these entities to bear the costs directly related to their activities "is comparable in character to similar police power measures imposing fees to defray the actual or anticipated adverse effects of various business operations."[27] Permittees' police power is "broad enough to include mandatory remedial measures to mitigate the *past, present or future* adverse impact of the fee payer's operations" in situations, like those present here, where there is a causal connection or nexus between the adverse effects and the fee payer's activities.[28]

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[24] Gov. Code, § 53750, subd. (f) and § 53751, subd. (i), added by Stats. 2017, Ch. 536, § 2 (emphasis added). The Legislature noted the numerous authorities predating Proposition 218 that use this same definition, including (1) Section 230.5 of the Public Utilities Code, added by Chapter 1109 of the Statutes of 1970; (2) Section 23010.3, added by Chapter 1193 of the Statutes of 1963; (3) The Street Improvement Act of 1913; (4) *L.A. County Flood Control Dist. v. Southern Cal. Edison Co*. (1958) 51 Cal.2d 331("no distinction has been made between sanitary sewers and storm drains or sewers"); (5) Many other cases where the term "sewer" has been used interchangeably to refer to both sanitary and storm sewers including, but not limited to, *County of Riverside v. Whitlock* (1972) 22 Cal.App.3d 863, *Ramseier v. Oakley Sanitary Dist*. (1961) 197 Cal.App.2d 722, and *Torson v. Fleming* (1928) 91 Cal.App. 168; and (6) Dictionary definitions of sewer, which courts have found to be an objective source for determining common or ordinary meaning, including Webster's (1976), American Heritage (1969), and Oxford English Dictionary (1971).

[25] *Id.,* subd. (f).

[26] *Sinclair Paint Co. v. State Bd. Of Equalization* (1997) 15 Cal.4th 866, 876-77. See also *Cal. Farm Bur. Federation v. State Water Resources Control Bd.* (2011) 51 Cal. 4th 421, 437-438; *California Association of Professional Scientists v. Department of Fish and Game* (2000) 79 Cal.App.4th 935, 945 (distinguishing regulatory fees from taxes); *Schmeer v. County. of Los Angeles* (2013) 213 Cal. App. 4th 1310, 1326 (finding plastic bag charge retained by businesses not to be a tax).

[27] *Sinclair Paint Co., supra,* 15 Cal.4th at 877.

[28] *Id* at p. 877-878. Examples of non-tax fees within the police power of municipalities to impose include: single-use carryout bag ordinances charging fee for use of plastic or paper bags (e.g., Item 868, San Jose 2017 Annual Report, Bates No. 129616; Item 864, 2016-2017 Santa Clara Annual Report, Bates No. 129336); fines for violations of

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Public Resources Code section 40059, subdivision (a)(1), and Health and Safety Code section 5471 provide additional authority to charge fees for the costs associated with the contested provisions. Public Resources Code section 40059, subdivision (a)(1), confers fee authority on the permittees; "[a]spects of solid waste handling . . . are a local concern."[29] As discussed above, Permittees each have authority to regulate handling of waste that is generated and collected within their jurisdictions.

Similarly, Health and Safety Code section 5471, subdivision (a), gives the permittees fee authority for "services . . . furnished . . . in connection with . . . storm drainage." This authority is consistent with the above discussion concerning the Legislature's ratification of existing fee authority over matters pertaining to managing the storm system and protecting beneficial uses of the receiving waters.

C. Subvention Is Not Required Here, Where Claimant Has the Ability to Fund Additional Costs, if Any, of Implementing MRP 2.0.

Subvention is only required if expenditure of tax monies is required, and not if the costs can be reallocated or funded through service charges, fees, or assessments.[30] Subvention of funds is only required if expenditure of tax monies is required, and not if the costs are simply reallocated or funded through other means.[31]

In the case of the LA MS4 permit, the Supreme Court noted the Commission's conclusion that although the inspection requirements were new programs or higher levels of service, it found that the claimants in that case were not entitled to state reimbursement for the costs of

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prohibitions on use of foam/polystyrene food containers (e.g., Item 868, San Jose 2016-2017 Annual Report, Bates No. 129617-129619); hazardous waste disposal fees for businesses that generate less than 100 kg of waste per month (Item 874, SCVURPPP 2016-2017 Annual Report, Bates No. 130322; Item 877, SMCWPPP 2016-2017 PCBs Control Measure Plan, Bates No. 131415); vehicle registration fees used to fund combined road safety/green infrastructure projects (Item 877, SMCWPPP 2016-2017 Annual Report, Bates No. 131083). See also generally, Item 874, SCVURPPP 2016-2017 Annual Report, Bates No. 130251 (describing effort to "develop a guidance memorandum on possible options for funding mechanisms to design, construct, and maintain prioritized GI projects, including in-lieu fees and alternative compliance, in order to assist co-permittees with the local funding options section of their GI Plans."); Item 841, 2016-2017 Fairfield-Suisun Urban Runoff Management Annual Report, Bates No. 126356 (evaluating funding options "such as a potential GI impact fee that would be assessed.")

[29] Pub. Resources Code, § 40059, subd. (a)(1).

[30] See Gov. Code, § 17556, subd. (d) (costs not mandated by the state when the local agency has "authority to levy service charges, fees, or assessments sufficient to pay for the mandated program or increased level of service"); *County of Los Angeles v. Comm'n on State Mandates*, *supra*, 110 Cal.App.4th at p. 1189 ("in order for a state mandate to be found, the local governmental entity must be required to expend the proceeds of its tax revenues"); *Redevelopment Agency v. Comm'n on State Mandates* (1997) 55 Cal.App.4th 976, 987 ("No state duty of subvention is triggered where the local agency is not required to expend its proceeds of taxes").

[31] See Gov. Code, § 17556, subd. (d).

compliance with the inspection requirements because "they could levy fees to cover the costs of the required inspections."[32]

> The Commission also finds that the remainder of the permit (parts 4C2a, 4C2b & 4E) does not impose costs mandated by the state … because the claimants have fee authority (under Cal. Const. article XI, § &) within the meaning of Government Code section 17556, subdivision (d), sufficient to pay for the activities in those parts of the permit.[33]

In the originating action, the Commission issued a Final Statement of Decision in a stormwater permit Test Claim filed by the County of Los Angeles and several additional co-permittee test claimants.[34] In the Commission's Statement of Decision, the Commission found that all but one of the challenged provisions issued by the Los Angeles Water Board in its MS4 permit did not qualify as unfunded state mandates as they did "not impose costs mandated by the state within the meaning of article XIII B, Section 6 of the California Constitution because the claimants have fee authority (under Cal. Const. article XI, § 7) within the meaning of Government Code section 17556, subdivision (d), sufficient to pay for the activities in those parts of the permit."[35]

Similarly, in this case, Claimant is not *required* to use taxes to pay for the costs of the programs, and can levy fees, such as inspection, trash, or permitting fees, in addition to sewer fees.[36] At the April 2017 Stormwater Finance Forum in Oakland, John Bliss of SCI Consulting, gave a presentation about how to implement stormwater control projects by imposing trash- and sewer-related fees or surcharges that would be exempt from the balloting required under Proposition 218. His presentation advocated funding a variety of stormwater-related programs in this way, including street sweeping, installing and maintaining full trash capture devices, and maintain catch basins.[37]

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[32] *Dept. of Finance v. Comm'n on State Mandates* (2016) 1 Cal.5th 749, 761. The Supreme Court's decision concerning the construction of the "maximum extent practicable" (MEP) requirement of Clean Water Act section 402(p)(3)(B)(iii), as it related to certain contested provisions of the LA MS4 permit. This decision is referenced herein as *Department of Finance*.

[33] Statement of Decision re. Case Nos. 03-TC-04, 03-TC-19, 03-TC-20 and 03-TC-21 (July 31, 2009), p. 1. See also Commission on State Mandates' Parameters and Guidelines and Decision Re. Test Claims 03-TC-04, 03-TC-20 and 03-TC-21 (providing guidance concerning reimbursement of costs for trash receptacles but omitting any recovery of costs for inspections); and Final Statement of Decision, San Diego Region Permit, 07-TC-09, March 30, 2010, pp. 102-105 (provisions in the permit were nonreimbursable where the co-permittees had the ability to impose fees on the development community).

[34] Municipal Storm Water and Urban Runoff Discharges, 03-TC-04, 03-TC-19, 03-TC-20, and 03-TC-21 (Los Angeles Regional Water Quality Control Board Order No. 01-182 (July 31, 2009) (County of Los Angeles Test Claim).

[35] County of Los Angeles Test Claim, Statement of Decision, p. 2.

[36] For a general overview of funding mechanisms that have been employed by municipalities, see Item 705, Black and Veatch 2005 Stormwater Utility Survey, Bates No. 107813 (72% cited stormwater user fees as major [at least 90% of total income] revenue sources and the majority of utilities resported funding was adequate to meet all or most needs). (See also Item 677, Agenda for Stormwater Financing Forum, Bates No. 106470-106472 [identifying ways to pay for stormwater controls].)

[37] Item 679, Bliss Presentation, Bates No. 106486-106509.

As described in the PCBs TMDL Staff Report, "urban runoff management agencies are expected to conduct or cause to be conducted a program to manage PCBs in building materials through their inspection programs."[38] In addition, Claimant may impose the cost of of storm drain connections on new development.[39] Mercury treatment requirements in MRP 2.0 were based on levels achievable via new and redevelopment controls, which are excluded from a mandate claim.[40] For other Provisions, cities can and do adopt fees from their residents and businesses that fund their stormwater programs. For example, the City of Alameda has adopted fees for implementation of their programs[41] and Palo Alto raised its stormwater fee.[42]

Union City's own test claim is weakened by the documentation it submitted, indicating that it has paid for many of its stormwater improvements with grant funding and has thus avoided having to levy such a fee.[43] Claimant cites several green streets projects, which were supported, in part, by State grants.[44] Claimant received a Proposition 84 grant for $3 million for the H Street green street improvements,[45] and $3 million for the South Decoto Green Streets.[46] Moreover, these project costs are not necessarily representative of what an ordinarygreen infrastructure retrofit might cost, because they are pilot/demonstration-scale projects that incorporated significant elements that would not have been incorporated in projects where cost was a leading concern.[47]

Other municipalities have found ways to fund compliance with their permit obligations. For example, the City of Oakland has, since 2006, had an "Excess Litter Fee" for defined types of typically high-trash generating busisnesses, such as fast food restaurants.[48] Eligible

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[38] Item 685, PCBs TMDL Staff Report, Bates No.106610.

[39] See, e.g., Item 702, San Jose website (describing fee schedule for storm drain connections), Bates No. 107804. In its Final Statement of Decision in 07-TC-09, issued March 30, 2010, the Commission found that the Copermittees have authority to fund these programs. In that case, the claimants cross-petitioned, seeking a writ of mandate overturning the Commission's determination. The trial court has not resolved these issues.

[40] Item 467, MRP 2.0, Provision C.11, Bates No. 83813-83820.

[41] See, e.g., Item 703, Alameda website (describing stormwater fee structure), Bates No. 107805-107806.

[42] See Item 704, Mercury News article, Bates No. 107807-107808.

[43] Test Claim, p. 5.23

[44] Test Claim, p. pp. 5.18-19.

[45] Test Claim, p. 5.23. See also Item 724, Round 1 Proposition Grant Award List, Bates No. 110226; Item 726, Round 2 Proposition Grant Award List, Bates No. 110485.

[46] Test Claim, p. 5.23. See also Item 724, Round 2 Proposition 2 Grant Award List, Bates No. 110226.

[47] Claimant attempts to discount the significance of the grants in the accounting presented to the Commission, stating without support that it is "unlikely the City will be able to avail itself of future grant opportunities" and that "there are no other nonlocal agency funds that are or will be available to the City to pay for these increased costs." Test Claim, pp. 5.23-5.24. However the test of whether or not a program is reimbursable or a state mandate does not require the non-availability of "nonlocal agency funds." Finally, Claimant chose to do more expensive designs than the minimum required by the Permit. (See Item 723, Bates No. 109928, 109951, 109953 and Item 725, Bates No. 110243, 110246.) Regardless, the appropriate time for briefing these matters in detail is in the parameters and guidelines phase. (Cal. Code Regs., tit. 2, § 1183.8.)

[48] Item 673, 2016-2017 Oakland Annual Report, p. 106241.

businesses may reduce their fees by participating in a Business Improvement District (BID) and may be exempt from the fees if the BID has an adequate litter control program.[49]

Oakland's BIDs and Community Benefit Districts (CBDs), which cover 650 acres, are additional means of funding street cleaning, trash management, and green infrastructure.[50] Participating businesses vote to pay an additional assessment to fund maintenance and beautification projects within the district. There are currently more than 10 BIDs and CBDs in Oakland, with several more planned.[51] As one example, the Jack London Square BID has an annual budget of approximately $780,000 to fund "intensive cleaning of sidewalks, gutters, and fixtures in the public right-of way," graffiti removal, pressure washing of the 880 underpass, and planting of the street medians.[52] The Lake Merritt/Uptown CBD installed trash cans, planted medians, and organizes patrols for litter and graffiti removal.[53] The Temescal BID removed litter and debris, landscaped and installed and maintained planters.[54] At a forum on stormwater finance held by U.S. EPA in Oakland on April 5, 2017, Leslie Estes of the City of Oakland gave a presentation describing how to use litter fees and BIDs to fund stormwater improvements.[55]

Other jurisdictions have been equally successful. For instance, the City of Richmond partnered with Caltrans to install two high-density separators, a type of full-trash capture device, in areas that drained parts of Interstate 580. Caltrans funded the cost of installing the devices, a total of $2.3 million.[56] The City's September 30, 2017 Annual Report indicated that both of these full trash capture devices had been installed, and that Richmond had achieved 88% trash reduction as a result.[57] Atherton is receiving funding from Caltrans for green infrastructure.[58] San Jose was awarded $4 million to fund three green infrastructure projects.[59] The City and County governments in San Mateo County used $2 million in vehicle registration fees to fund grants for projects incorporating green infrastructure into road safety improvements.[60] The City of Half Moon Bay identified numerous funding sources for its green infrastructure projects, including

[49] Item 673, 2016-2017 Oakland Annual Report, Bates No. 106242.

[50] *Id.*, Bates No. 105943, 105951-105952.

[51] *Id.*, Bates No. 106245-106246

[52] Item 681, Screenshot, Jack London BID FAQs, Bates No. 106517-106518.

[53] *Id.*, Screenshot Lake Merritt BID, Bates No. 106519-106520;

[54] *Id.*, Screenshot Temescal BID, Bates No. 106523.

[55] Item 677, Stormwater Finance Forum Agenda, Bates No. 106472; Item 678, Estes Powerpoint, "Alternative Funding for Oakland Clean Water," Bates No. 106473-106485.

[56] Item 676, "Revised Plan and Schedule for Implementation of Additional Trash Load Reduction Control Actions to 70% by July 1, 2017" (March 2017). Bates No. 106463.

[57] Item 674, 2016-2017 Richmond Annual Report, Bates No. 106343; Item 676, Bates No. 106463.

[58] Item 822, 2016-2017 Annual Report, Bates No. 124543.

[59] Item 866, San Jose Annual Report, p. i-3.

[60] Item 877, 2016-2017 SMCWPPP Annual Report, Bates No. 131056, 131069, 131083.

federal, state and local grants, Measure A and J funds, the gas tax, vehicle registration taxes, and development impact fees.[61]

Claimants have not demonstrated that they are precluded from establishing or raising fees to cover any increased costs to comply with the Permit. Whether circumstances make it difficult to assess fees is not relevant to the inquiry.[62] Claimant must establish that it is required to use tax monies to pay for implementation of permit provisions.[63] Here, the Legislature unequivocally proclaimed that Claimant has always had the ability to raise fees. Evidence of other similarly-situated municipalities demonstrates overwhelmingly that Claimant is able to raise any necessary funds to comply with MRP 2.0. There is no unfunded State mandate in these circumstances.

III. The Contested Permit Provisions Are Compelled by Federal Law.

Claimant concedes that if a permit requirement "is compelled by federal law, the state must implement a federal mandate and no reimbursement is required."[64] Claimant is correct; MRP 2.0 cannot be an unfunded State mandate if it imposes a requirement that is mandated by a federal law or regulation and results in costs mandated by the federal government.[65] Here, the Clean Water Act and its regulations require the Permit itself and federal law compels each of the contested provisions. The contested provisions of MRP 2.0 cannot be unfunded State mandates because they: 1) include provisions required by TMDLs; 2) are required Basin Plan Prohibitions approved by U.S. EPA; 3) are required by the Clean Water Act and 4) are mandated by other federal statutes. These are separate, independent federal requirements.

A. MRP 2.0 Provisions C.3.j, C.11.c, C.12.a, C.12.c, C.12.d, and C.12.e Implement A Federal Mandate

Provisions C.3.j, C.11.c, C.12.a, C.12.c, C.12.d, and C.12.e implement the Total Maximum Daily Load requirements under Clean Water Act section 1313, subdivision (d) (Section 303(d)). Section 303(d) requires states to determine which water bodies are not meeting applicable water quality standards, meaning that the water bodies are "impaired" for a particular pollutant, and to develop a "total maximum daily load" (TMDL) for that pollutant.

A TMDL establishes load allocations for the sources of the pollutant; achievement of these load allocations will ensure that water quality standards within the waterbody are met. In other

[61] Item 842, 2016-2017 Half Moon Bay Annual Report, Bates No. 126,610-126611.

[62] *Connell v. Sup. Ct.* (1997) 59 Cal.App.4th 382, 398 (where statute on its face authorized water districts to levy fees sufficient to pay the costs associated with a regulatory change, there was no right to reimbursement); *Clovis Unified School Dist. v. Chiang* (2010) 188 Cal.App.4th 794, 812 ("to the extent a local agency… 'has the authority' to charge for the mandated program or increased level of service, that charge cannot be recovered as a state mandated cost").

[63] Gov. Code §§ 17553, subd. (b)(1)(F) [test claim must identify funding sources, including general purpose funds available for this purpose, special funds and fee authority]; and Gov. Code § 17556, subd. (d).

[64] Test Claim, p. 5.9.

[65] Gov. Code, § 17556, subd. (c).

words, load allocations are required to be "established at a level necessary to implement the applicable water quality standards with seasonal variations and a margin of safety which takes into account any lack of knowledge concerning the relationship between effluent limitations and water quality."[66] TMDLs proposed by the Regional Water Board must be approved by U.S. EPA before they become effective.[67] Once U.S. EPA approves a TMDL for a waterbody, any NPDES permit, including an MS4 permit, must include effluent limits "consistent with the assumptions and requirements of any available wasteload allocations."[68]

TMDLs also include an Implementation Plan, a road map for how the Regional Water Board anticipates that the load allocations will be met. The Implementation Plan is, like the TMDL itself, submitted to EPA for approval, and included in the San Francisco Water Quality Control Plan (Basin Plan).[69]

The water quality of San Francisco Bay is impaired by both mercury and polychlorinated biphenyls (PCBs). Therefore, in 2008 the Regional Water Board developed, and EPA approved, TMDLs for mercury and PCBs designed to reduce the input, or loads, of mercury and PCBs, respectively, to San Francisco Bay. The TMDLs and their Implementation Plans are part of the Basin Plan.[70] Both TMDLs require municipal stormwater agencies to take aggressive action to reduce mercury and PCBs in stormwater discharges and envision that these load reductions will be implemented in successive municipal stormwater permits. Both TMDLS recognized that identification of control measures that will effectively implement the load allocations will be a process of trial and error, and will not be possible within one permit term.[71] U.S. EPA echoed this in its comments on the draft permit, stating, "EPA supports the Water Board's inclusion of specific numeric mercury and PCB milestones and deadlines within this permit cycle."[72] EPA noted that these numeric milestones were consistent with federal guidance and recognized that the "pollutant-specific values are interim milestones to achieve step-wise progress in this permit as well as to measure progress towards attaining the final TMDL wasteload allocations (mercury in 2028 and PCBs in 2030)…."[73] Accordingly, the TMDL provisions in the permit, described below, are (1) required pursuant to 303(d); (2) even if not a federal mandate, are not part of a new program and do not impose a higher level of service, and are not unique to local governments.[74]

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[66] 33 U.S.C. § 1313, subd. (d)(1)(C)

[67] 33 U.S.C. § 1313(d)(2

[68] 40 C.F.R. § 122.44, subd. (d)(1)(vii)(B).)

[69] See Item 686, Basin Plan Sections 7.2.2 and 7.2.3.

[70] See Item 686, Basin Plan sections 7.2.2 (Mercury TMDL), Bates No. 106686-106705; and 7.2.3 (PCBs), Bates No. 106705-106717.

[71] Item 685, PCBs TMDL Staff Report, Bates No. 106609-106611.

[72] Item 729, U.S. EPA Letter to SF Water Board, Bates No. 110608.

[73] *Ibid.*

[74] In the LA MS4 case, the Commission determined that the permit requirement pertaining to trash receptacles was a reimbursable state mandate, but specifically noted that those local agencies subject to the requirements were not subject to a trash TMDL. (Statement of Decision re. Case Nos. 03-TC-04, 03-TC-19, 03-TC-20 and 03-TC-21 (July 31, 2009), p. 1.) Notably, the Supreme Court's *Department of Finance* decision has no impact on this analysis.

1. TMDL Provisions in the Permit

In accordance with federal law, the Regional Water Board implemented the TMDLs for mercury and PCBs through MRP 2.0 provisions in C.3, C.11, and C.12, as described below:

> [T]he Water Board has found that there is a reasonable potential that municipal stormwater discharges cause or may cause or contribute to an excursion above water quality standards for the following pollutants: mercury [and] PCBs…in San Francisco Bay segments…. In accordance with CWA section 303(d), the Water Board is required to establish Total Maximum Daily Loads (TMDLs) for these pollutants to these waters to gradually eliminate impairment and attain water quality standards. Therefore, pollutant control actions and further pollutant impact assessments by the Permittees are warranted and required pursuant to this Order.[75]

> The [Green Infrastructure] Plan is intended to serve as an implementation guide and reporting tool during this and subsequent Permit terms to provide reasonable assurance that urban runoff TMDL wasteload allocations (e.g., for the San Francisco Bay mercury and PCBs TMDLs) will be met, and to set goals for reducing, over the long term, the adverse water quality impacts of urbanization and urban runoff on receiving waters.[76]

> The [green infrastructure planning and tracking] methods shall also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met.[77]

> The [mercury control] provisions implement the urban runoff requirements of the San Francisco Bay and Guadalupe River Watershed mercury TMDLs and reduce mercury loads to make substantial progress toward achieving the urban runoff mercury load allocations established for the TMDLs. The aggregate, regionwide, urban runoff wasteload allocation from the San Francisco Bay mercury TMDL is 82 kg/yr. The TMDL implementation plan calls for attainment of the allocation by February 2028 and, as a way to measure progress, attainment of an interim loading milestone by February 2018 of 120 kg/yr, halfway between the 2003 estimated load, 160 kg/yr, and the aggregate allocation.[78]

> The Permittees shall implement sufficient green infrastructure projects so that mercury loads are collectively reduced by 48 g/yr by June 30, 2020, which shall be extended to December 31, 2020, if the Permittees provide documentation that

[75] Item 467, MRP 2.0, Finding 11, Bates No. 83561.
[76] *Id.*, Provision C.3.j, Bates No. 83601-83606.
[77] *Id.*, Provision C.3.j.iv, Bates No. 83606.
[78] *Id.*, Provision C.11, Bates No. 83665-83670.

> control measures that will attain the load reduction will be implemented by December 31, 2020.[79]
>
> The provisions implement the urban runoff requirements of the PCBs TMDL. Permittees shall reduce PCBs loads by a specified amount during the term of the Permit, thereby making substantial progress toward achieving the urban runoff PCBs wasteload allocation in the Basin Plan. The allocation, on an aggregate and regionwide basis, is 2 kg/yr (1.6 kg/yr allocated to Permittees) to be achieved by March 2030. This wasteload allocation represents a load reduction from all urban runoff sources to the Bay of approximately 18 kg/yr (14.4 kg/yr from Permittees) compared to loads estimated using data collected in 2003.[80]
>
> Permittees shall prepare a PCBs control measures implementation plan and corresponding reasonable assurance analysis that demonstrates quantitatively that the plan will result in PCBs load reductions sufficient to attain the PCBs TMDL wasteload allocations by 2030. The plan must:
>
> (i) Identify all technically and economically feasible PCBs control measures to be Implemented (including green infrastructure projects).[81]

Claimant acknowledges that the 2009 MRP required "Permittees to implement Green Infrastructure projects to comply with mercury and PCB load reduction requirements[82]." In the next breath, Claimant claims that the "green infrastructure requirements are new; the term was not used even once in the MRP1."[83] Claimant omits any discussion of the prior permit's requirements for low impact development, which is part of green infrastructure, as identified in the green infrastructure definition they cite.[84] The requirements for green infrastructure Planning were included at the permittees' request as a means of meeting the load reductions required by the TMDLs.[85] As described further in the table below, green infrastructure and low impact development provisions are common in federally-issued stormwater permits, and EPA "is a strong proponent for green infrastructure (GI) plans in MS4 permits."[86] The permit fact sheet

79 Item 467, MRP 2.0,Provision C.11.c.ii, Bates No. 83667.

80 Id., Provision C.12, Bates No. 83671-83680.

81 Id., Provision C.12.d, Bates No. 83677.

82 Test Claim, p. 5.15.

83 Ibid.

84 Decl. Of Thomas Ruark at 6.1.4, citing Order No. R2-2015-0049 (Item 467, Bates No. 83601).

85 See Item 378, Bates No. 37460-37462; 380, Bates No. 37497; Item 382, pp.37519-37520; Item 383, 37529-37530; Item 384, Bates No. 37534; Item 386, 37543-37545; Item 387, Bates No. 37546-37549; Item 388, Bates No. 37553-37544; and Item 390, Bates No. 37558.

86 Item 729, U.S. EPA Letter to SF Water Board, Bates No. 110608.

was modified to accept EPA's recommendation that the permit include EPA's menu of potential components of green infrastructure plans.[87]

2. The Regional Water Board Had No True Choice in Implementing the TMDL Requirements.

The Regional Water Board has little discretion in complying with title 40 of the Code of Federal Regulations, part 122.44(d)(1)(vii)(B), which governs implementation of TMDLs through permitting requirements. That section specifically directs the Board to include effluent limits which are consistent with the assumptions of any applicable wasteload allocations (WLAs). The Board had no "true choice" but to include the TMDL-related provisions in MRP 2.0 that will result in attainment of the WLA within the timeframe established in the TMDL (in the case of both the PCBs and Mercury TMDLs, 20 years.[88] The results of the pilot testing during the 2009 permit term demonstrate the lack of "true choice" for the Regional Water Board in imposing permit terms compliant with the TMDL. The Regional Water Board's Watershed Division Chief, Keith Lichten, described the PCBs TMDL load reduction requirements at the MRP 2.0 adoption hearing. He explained that the PCBs provisions were designed to achieve the stringent wasteload allocations set in the TMDL:

> The PCBs TMDL estimates that PCBs load from urban stormwater runoff is 20 kilograms per year, it assigns stormwater a waste load allocation of two kilograms per year, thus requiring a reduction of 18 kilograms per year after 20 years, and about 14 kilograms of that is assigned to the Permittees.
>
> MRP II would require a reduction of half a kilogram per year of PCBs by midway through the second year of the permit, and that would increase to three kilograms per year by the end of the permit term. That's about one-fifth of the PCBs TMDLs 14 kilograms per year load reduction requirements for the MRP Permittees, and it would be achieved half-way through that 20-year TMDL schedule[89]."
>
> ***
>
> We need the Permittees to make substantial progress in load reductions consistent with the TMDL during this permit term. As a result, MRP II requires the load reductions and reporting on where, what and when actions will be taken to achieve them[90]."

The Implementation Plans of both the Mercury and PCBs TMDLs provide for adaptive implementation of the load allocations for municipal stormwater. "Adaptive implementation

87 Id., at p. 3. See also Item 460, Response to Comments, Response to Comments on C.3, Bates No. 82543 (adding U.S. EPA's Attachment A into the C.3 Fact Sheet as guidance [see Bates No. 83758-83759.)

88 See *Department of Finance,* supra, 1 Cal.5th at p. 765

89 Item 469, Nov. 18 Transcript, at Bates No. 84022.

90 *Id*. at Bates No. 84027

simultaneously makes progress toward achieving water quality standards through implementing actions while relying on monitoring and experimentation to reduce uncertainty and refine future implementation actions."[91] The Implementation Plans anticipated that the first permit (in 2009) would require only pilot testing of mercury and PCBs controls, but that results of this testing would determine the requirements of the second permit (the provisions challenged here).

> The second five-year term permit requirements will be based on the knowledge gained during the first permit term and will call for strategic implementation of the BMPs and control measures identified as effective and that will not cause significant adverse environmental impacts based on the pilot studies conducted during the first permit term. The second term permit will also require development of a plan to fully implement control measures that will result in attainment of allocations, including an analysis of costs, efficiency of control measures and an identification of any significant environmental impacts[92].

Indeed, the provisions of MRP 2.0 reflect lessons learned during pilot testing: e.g., requiring PCBs reductions by "addressing building materials during demolition, from green infrastructure, particularly in older industrial areas, from referral of PCBs-contaminated sites for cleanup, from addressing PCBs in storm drain infrastructure, and street sweeping and other enhanced maintenance measures in contaminated areas[93]." U.S. EPA supported and recommended the retention of "the Water Board's approach to allow for flexibility in determining the various control measures to achieve PCBs milestones" in the final permit.[94] U.S. EPA also supported the accounting framework "based on permittees' success with several PCBs pilot projects during the current permit term, and likelihood of continued permittee efforts," and "endorse[d] the Water Board's evolving 'program' to minimize PCBs from entering urban runoff via age-specific building materials and concrete sealants."[95]

Accordingly, the Regional Water Board's discretion is curtailed by both the information on effectiveness submitted by permittees, which showed that green infrastructure would be effective and feasible for controlling PCBs and mercury discharges in stormwater when deployed on a large scale throughout the region, and the looming obligation to comply with aggressive load reductions to achieve water quality standards. Thus, the Regional Water Board had no "true choice" in imposing the challenged green infrastructure provisions of the new permit.

B. Clean Water Act Prohibitions

[91] Item 685, PCBs Staff Report, Bates No. 106607.

[92] Item 685, PCBs Staff Report, Bates No. 106611.

[93] Item 469, Nov. 18 Transcript, Bates No. 84024.

[94] Item 729, U.S. EPA Letter to SF Water Board, Bates No. 110609.

[95] *Ibid.*

As discussed above in the introductory remarks, the Clean Water Act requires that MS4 permittees effectively prohibit non-stormwater discharges to their MS4s.[96] Clean Water Act section 301 prohibits the discharge of any pollutant by any person without a permit. The Act "prohibits the discharge of any pollutant except in compliance with one of several statutory exceptions."[97] The first principle of the statute is that "it is unlawful to pollute at all. The Clean Water Act does not permit pollution whenever that activity might be deemed reasonable or necessary; rather, the statute provides that pollution is permitted only when discharged under the conditions or limitations of a [federal discharge] permit.[98]

Pursuant to Clean Water Act section 402, subdivision (p)(3)(B)(ii), permitting agencies "shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers." U.S. EPA has defined "storm water" to mean "stormwater runoff, snow melt runoff and surface runoff and drainage."[99] In general, the requirement to "effectively prohibit" non-stormwater discharges requires either prohibiting the flows to or from the MS4's system or ensuring that operators of such non-stormwater systems obtain permits for those discharges.[100] MS4 operators meet this requirement by implementing "a program, including a schedule, to detect and remove … illicit discharges and improper disposal into the storm sewer."[101] Although U.S. EPA has exempted specified categories of non-stormwater discharges from this prohibition, the same regulation provides that the exemption no longer applies to a category that a municipality has identified as a pollutant source.[102]

Federal MS4 permit application requirements specify that an applicant must demonstrate adequate legal authority to "[p]rohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer;" and "[c]ontrol through ordinance, order or similar means the discharge to a municipal separate storm sewer of spills, dumping or disposal of materials other than storm water."[103] The regulations define the term "illicit discharges" as "any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to an NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer)…."[104] In other words, since illicit discharges are not authorized by the Clean Water Act, they must be prohibited.

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[96] See State Water Board Order No. 2015-0175 (2012 LA MS4 Permit), pp. 62-63 (confirming that non-stormwater discharges to the MS4s under the Clean Water Act are not subject to the MEP standard applicable to stormwater discharges).

[97] See *WaterKeepers Northern California v. State Water Resources Control Bd.* (2002) 102 Cal.App.4th 1448, 1452.

[98] *Natural Resources Defense Council, Inc. v. U.S. E.P.A*. (D.C. Cir. 1987) 822 F.2d 104, 123; see 33 U.S.C. § 1311, subd. (a).

[99] 40 C.F.R. § 122.26.

[100] 55 Fed. Reg. 47990 at 47995.

[101] 40 C.F.R. § 122.26, subd. (d)(2)(iv)(B).

[102] *Ibid.*

[103] 40 C.F.R. § 122.26, subd. (d)(2)(i)(B) and (C).

[104] *Id.* at § 122.26, subd. (b)(2).

While "non-storm water" is not defined in the CWA or federal regulations, the federal regulations define "illicit discharge" as "any discharge to a municipal separate storm sewer that is not composed entirely of storm water and that is not covered by an NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer and discharges resulting from fire fighting activities)."[105] This definition is the most closely applicable definition of "non-storm water" contained in federal law. As stated in the Phase I Final Rule, U.S. EPA added the illicit discharge program requirement to begin implementation of the 'effective prohibition' requirement to detect and control certain non-storm water discharges to their municipal system. U.S. EPA stated: "Ultimately, such non-storm water discharges through a municipal separate storm sewer must either be removed from the system or become subject to an NPDES permit (other than the permit for the discharge from the [MS4])."[106] Thus, federal law mandates that permits issued to MS4s must require management practices that will result in reducing storm water pollutants to the maximum extent practicable (MEP) yet at the same time requires that non-storm water discharges be effectively prohibited from entering the MS4. The argument that non-storm water discharges, prohibited from entry into the MS4 in the first instance, should be held to comply with only the less stringent MEP standard developed for storm water discharges is contrary to and potentially renders the "effectively prohibit" requirement in section 402(p)(3)(B)(ii) meaningless.

C. Basin Plan Prohibitions

The water quality control plan applicable in the San Francisco Bay region is the “San Francisco Bay Basin Water Quality Control Plan (Basin Plan).[107] The beneficial uses, water quality objectives, and antidegradation policy constitute water quality standards for purposes of compliance with the Clean Water Act.[108] Pursuant to Clean Water Act section 303(c), the U.S. EPA must review and approve all water quality standards. Since 1975, the Basin Plan has prohibited the discharge of rubbish and litter, and toxic and deleterious substances.[109]

> It shall be prohibited to discharge:
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> ***
>
> All conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Regional Board, to waters of the Basin.
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> ***

[105] 40 CFR § 122.26(b)(2).

[106] 55 Fed. Reg, 47990, 47995 (Nov. 16, 1990).

[107] The complete, current Basin Plan may be accessed at https://www.waterboards.ca.gov/sanfranciscobay/basin_planning.html#basinplan.

[108] Wat. Code, §§ 13142, 13240, 13241, 13242; 33 U.S.C § 1313(c); 40 C.F.R. § 131.3(i); 40 C.F.R. § 131.6 (2010).

[109] Item 684, Bates No. 106525 et seq.

> Rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas.[110]

Provisions C.10 (trash), C.11 and C.12 (mercury and PCBs) are designed to protect U.S. EPA's approved water quality standards established in the Basin Plan.

The Fact Sheet indicates that the Regional Water Board adopted the Prohibition in 1975.[111] Government Code section 17551, subdivision (c), requires Claimant to file test claims within 12 months of the effective date of a statute or executive order. The time for challenge to these prohibitions passed more than thirty years ago.

D. Federal Requirements for Monitoring

Claimant has incorporated the prior briefing concerning monitoring provisions in C.8, conceding that the contested provisions were already required by the 2009 MRP.[112] The contested monitoring provisions in C.8 constitute data and reports on permit implementation that provide the required information concerning the status of implementation controls.

The inclusion of monitoring requirements in the 2009 MRP is consistent with comments on a draft version of the permit, in which U.S. EPA staff noted that they supported the inclusion of detailed requirements in the permit.[113] U.S. EPA had complained prior to issuance of the 2009 MRP that "[o]ur municipal audits of recent years have identified lack of detailed requirements as a frequent shortcoming in previously issued-permits in our Region."[114] And Mr. Bromley's comments are consistent with the finding in *San Francisco Baykeeper v. Regional Water Quality Control Board, San Francisco Bay Region* (2003).[115] Although not precedential, this case ordered the Regional Water Board to include type, interval and frequency sufficient to yield data representative of the monitored activity, citing the Code of Federal Regulations.[116] For the Regional Water Board to decline to do so would have risked being in contempt of court.

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[110] Item 688, Basin Plan, Table 4-1, Prohibitions 6 and 7, Bates No. 106969-106970.

[111] Item 467, MRP 2.0, Fact Sheet, p. A-87, Bates No. 83797 See also Item 684, 1975 Basin Plan, Bates No. 106530, Prohibitions 2 and 3, which are identical to the current prohibitions, with the exception that "floatable" appears before the word rubbish.

[112] Test Claim, p. 5.10.

[113] Item 729, U.S. EPA Letter to Regional Board, Bates No. 110608. The trash monitoring provisions of C.10 were made more specific in response to EPA comments on the draft Permit. See Item 460, Response to Comments, Section C.10, Appendix C, Bates No. 82693.

[114] Item 689, Email from Eugene Bromley, EPA, "Comments on December 27 Draft MRP", Bates No. 106973.

[115] Item 690, *San Francisco Baykeeper v. Regional Water Quality Control Board, San Francisco Bay Region* (2003) San Francisco Superior Court No. 500527, Order Granting Petition for Writ of Mandate and Statement of Decision, Bates No. 106974-106979.

[116] *Id*. at Bates No. 106977 (citing 40 C.F.R. § 122.48, subd. (b)).

Subsequent permits therefore included these required elements, including Provision C.8 in MRP 2.0.

Claimant acknowledges that any claim concerning C.8 should have been raised and resolved with respect to the 2009 permit and not here.[117] Should the Commission re-evaluate those claims here, the Regional Water Board incorporates prior briefing on Provision C.8 as submitted in the May 17, 2011 submission[118] and augmented in the December 20, 2016 submission concerning the impact of the Supreme Court's decision in *Department of Finance*. The 2011 Response briefs the numerous federal requirements that validate the 2009 MRP's monitoring provisions.[119] The supplemental briefing describes how the Supreme Court's decision in *Department of Finance* did not impact any federal authorities requiring monitoring.

It bears noting that San Francisco Baykeeper has petitioned the State Water Board, claiming that the monitoring required by Provisions C.8 is not stringent enough to comply with the Clean Water Act.[120] While the Regional Water Board disagrees that the monitoring provisions are inadequate, Baykeeper's argument supports the conclusion that the provisions are no more stringent than what federal law requires.

E. U.S. EPA Has Required Similar Provisions In Permits It Has Issued.

In concluding that the trash receptacle requirement in the LA MS4 Permit was not a federal mandate, the Supreme Court found that "the fact the EPA itself had issued permits in other cities, but did not include the trash receptacle condition, undermines the argument that the requirement was federally mandated."[121] In contrast to the LA MS4 permit, U.S. EPA has issued permits requiring substantially similar provisions to the contested provisions of MRP 2.0. The following table lists provisions in permits the U.S. EPA has issued that are analogous to the challenged provisions in MRP 2.0, demonstrating that these provisions are federally mandated and that the Regional Water Board effectively administered federal requirements concerning permit requirements for monitoring, green infrastructure, and trash.

To the extent the provisions are more detailed or provide more specificity than past iterations of MRP 2.0, that is consistent with U.S. EPA's guidance that successive permits for the same MS4 must become more refined and detailed:

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[117] Cal. Code Regs.,tit. 2, § 1183.1, subd. (c).

[118] Due to similar claims, this brief covers many of the same issues as the May 17, 2011 Response to Test Claims 10-TC-01, 10-TC-02, 10-TC-03 and 10-TC-05. To avoid undue length, this brief will refer as appropriate to that brief (2011 Response).

[119] 2011 Response, pp. 27-29 (MS4 permits must require monitoring conditions), 42-43 (monitoring provisions required by Clean Water Act and implementing regulations); 43-44 (collaborative and watershed monitoring required by federal law); 44-45 (characterization of MS4 discharges required by federal law); 46 (citizen monitoring required by federal law); 47 (electronic reporting required by federal law).

[120] Item 666, Baykeeper Petition, Bates No. 104302.

[121] *Department of Finance v. Comm'n on State Mandates, supra*, 1 Cal.5th at p. 772.

> The EPA also expects stormwater permits to follow an iterative process whereby each successive permit becomes more refined, detailed, and expanded as needed, based on experience under the previous permit. See, 55 Fed. Reg. 47990, 48052 ("EPA anticipates that storm water management programs will evolve and mature over time."); 64 Fed. Reg. 67722, 68754 (Dec. 8, 1999) ("EPA envisions application of the MEP standard as an iterative process.") Interim Permitting Approach for Water Quality-Based Effluent Limitations in Stormwater Permits (Sept. 1, 1996) ("The interim permitting approach uses BMPs in first-round storm water permits, and expanded or better-tailored BMPs in subsequent permits, where necessary, to provide for the attainment of water quality standards.")[122]

(Emphasis in original.) The need for, e.g., "expanded or better-tailored BMPs" is illustrated in the specificity of U.S. EPA's own permit provisions, as shown here:

MRP 2.0	U.S. EPA-Issued Permits
Provision C.3.j (Permittees shall complete and implement a Green Infrastructure Plan to include low impact development drainage design into storm drain infrastructure on public and private lands)	Item 654, Consent Decree, Bates No. 103435. The consent decree for the Boston Water and Sewer Commission (BWSC) requires submission of BMP proposal to EPA that "include[s] and emphasize[s] the use of all appropriate currently available Green-Infrastructure ("GI") and Low-Impact Development ("LID") techniques." Upon approval of this proposal by EPA, the Commission must submit a "Phase I BMP Implementation Plan that contains recommendations and schedules for the implementation of specific GI/LID BMPs [in specified areas around Boston]." Item 655, 2016 Annual Report, Bates No. 103537. BWSC 2016 Annual Report indicates that, in compliance with the Consent Decree, they have submitted a watershed-scale stormwater management plan that evaluates systematic implementation of BMPs, including structural BMPs/GI in Boston aimed at reducing pollutant loadings in stormwater discharges sufficient to meet applicable total maximum daily loads. One component of the BMP plan is to collaborate with the Boston Transportation Department to expand Boston's Complete Streets Initiative, which requires green infrastructure in street design, and to further define green design guidelines and emphasize implementation of priority BMPs with high pollutant removal efficiency. Another is to identify large

[122] Item 695, Letter from Alexis Strauss to Tam Doduc and Dorothy Rice, April 10, 2008, Bates No. 107261-107262 concerning Los Angeles County Co-permittees Test Claim Nos. 03-TC-04, 03-TC-19, 03-TC-20, and 03-TC-21. See also Item 729, U.S. EPA Letter to SF Regional Board, Bates No. 110608.

	impervious areas for retrofit such as parking lots with areas greater than 10,000 square feet that present BMP opportunities. *Id.* at Bates No. 103538-103539. BWSC's 2016 Annual Report shows that the City is implementing multiple green infrastructure projects around Boston, including projects at five public schools, a city-owned playing field, and near three tributaries to the Charles River. "The knowledge and experience gained pursuant to these projects will help guide Commission as it develops more detailed designs and schedules for installation of BMPs/GI citywide." Item 693, 2011 Washington, DC Permit, Bates No. 107100-107102. Requires Permittee to create green landscaping incentive program, develop performance standards for retrofits, inventory retrofit opportunities on federal land, and achieve targets for stormwater treatment, retention, tree planting, and green roofs. Item 671, MA MS4 General Permit. Requires report assessing zoning and design criteria and regulations affecting impervious cover in streets and parking lots (Bates No. 105739), including requirement to implement recommended changes to minimize impervious cover (Bates No. 105774); requires implementation of recommended, feasible changes to regulations to allow various green infrastructure techniques (Bates No. 105774-105775); requires inventory and identification of public properties to be retrofitted with stormwater controls (Bates No. 105775); requires development of new and redevelopment program, including LID planning and design, and stormwater controls in accordance with specified BMPs that specified amounts of certain pollutants (Bates No. 105772, 105773). Item. 670, Worcester, Draft 2008 EPA Permit, Bates No. 105700. EPA's draft permit for Worcester, Massachusetts, requires mapping of priority public and private facilities discharging pollutants throughout the MS4 (Bates No. 105703); coordination among public agencies for permitting of new development, and a program for construction and post-construction stormwater controls, including low-impact development technicques, (Bates No. 105703-105704) identification of regulatory barriers to implementing low-impact development and revisions to overcome them (Bates No. 105704); mapping of impervious area (Bates No. 105705) Requires infiltration or injection of storm water from new development or redevelopment sites, where feasible and appropriate, to approximate the annual recharge of

	groundwater occurring during pre-development conditions consistent with specified standards. (Bates No. 105700) Item 672, General Small MS4 for MA, NH, and tribal lands in CT. The permit requires permittees with stressed groundwater basins to "minimize the loss of annual recharge to ground water from new and redevelopment, including but not limited to drainage improvements done in conjunction with road improvements, street drain improvement projects and flood mitigation projects, Item 672, Bates No. 105800 Item 669, Draft NH Small MS4,Bates No. 105652. It also would require implementation of programs leading to disconnection of directly connected impervious area on municipal and/or private property, including green roofs, residential rain garden programs, removal of unnecessary impervious area, and downspout disconnection. *Id.*, Bates No. 105673. The Draft NH Small MS4 Permit requires site plan review for opportunities to use low impact design and green infrastructure. When the opportunity exists, the permittee shall encourage project proponents to incorporate these practices into the site design. The permittee shall track the number of site reviews, inspections, and enforcement actions. *Id.* Bates No. 105674. It would also require permittee to assess whether street design and parking lot guidelines can be modified to support low impact design options, coordinate with local planning and transportation boards, and recommend schedules for incorporating changes into relevant documents and procedures to minimize impervious cover in parking areas and street designs. *Id.* Bates No. 105674-105675. Permittee would assess the feasibility of making, at a minimum, specified green infrastructure practices allowable: green roofs, infiltration practices such as rain gardens, planter gardens, porous and pervious pavements, and other landscaping/soil based stormwater management techniques, water harvesting devices such as rain barrels and cisterns, and the use of stormwater for non-potable uses. Assessment would also identify any impediments to such practices, and include progress in annual reports. Requirement for an "inventory and priority ranking of permittee-owned property and existing infrastructure that could be retrofitted with BMPs designed to reduce the frequency, volume and pollutant loads of stormwater discharges to its MS4 through the mitigation of impervious area.

	Item 697, Albuquerque MS4 Watershed permit, Bates No. 107421-107426. Permittees required to implement a program that, inter alia: Describes master planning and project planning procedures to control the discharge of pollutants to and from the MS4. Minimizes the amount of impervious surfaces within each watershed, by controlling the unnecessary creation, extension and widening of impervious parking lots, roads and associated development. The permittee may evaluate the need to add impervious surface on a case-by-case basis and seek to identify alternatives that will meet the need without creating the impervious surface. Implements stormwater management practices that minimize water quality impacts to streams, including disconnecting direct discharges to surface waters from impervious surfaces such as parking lots. Implements stormwater management practices that protect and enhance groundwater recharge as allowed under the applicable water rights laws. Item 701, Boise/Garden City MS4 Permit, Bates No. 107753-107555. Requires Green Infrastructure/LID incentive strategy and pilot projects, development of one "green" outfall disconnection, and incorporation runoff reduction into street repairs.
Provision C.8.a (Permittees shall participate in monitoring program) **Provision C.8.b** (Permittees' monitoring data must meet minimum data quality requirements) **Provision C.8.c** (Permittees shall contribute to regional monitoring program) **Provision C.8.d** (Permittees shall monitor creeks for impacts of	Item 696, Washington, D.C. (2011) (Permit No. DC0000221), Revised Monitoring Program for D.C.'s NPDES Permit, Bates No. 107274: monitoring program "builds on" monitoring activities in prior permits. Item 693, Washington, DC NPDES Permit, Bates No. 107122-107127 Requires wet weather discharge monitoring; storm event data; sample type, collection, and analysis; dry weather monitoring; area and/or source identification program; flow measurements; minimum monitoring and analysis procedures. Item 700, Joint Base Lewis-McChord (2013) (Permit No. WAS-026638), Section IV.A.9, Bates No. 107705: Provides for participation in Puget Sound Regional Monitoring Program in lieu of certain monitoring requirements. Item 696, D.C. Revised Monitoring Program, Bates No. 107294-107296. Requires wet monitoring in three creeks and

stormwater) **Provision C.8.f** (Permittees shall implement pollutant of concern load monitoring and long-term monitoring using protocols identified in the Code of Federal Regulations) **Provision C.8.g** (Permittees shall monitor for pesticides and toxicity)	multiple special study sites. *Id.*, Bates No. 107292. Requires monitoring for pollutants of concern identified in historical data. Item 693, D.C. NPDES Permit, Bates No. 107123. Listing locations of monitoring stations. See generally Item 701, Boise/Garden City Area MS4 Permit, Section IV , Bates No. 107777-107785 (Monitoring and Reporting Requirements). See generally Item 697, Albuquerque MS4 Watershed Permit, Part III, Bates No. 107448-107455 Monitoring, Assessment, and Reporting Requirement (similar provisions).
Provision C.8.e (When Status Monitoring results trigger a follow-up action, Permittees shall conduct a site-specific evaluation)	Item 696, Washington, D.C. Revised Monitoring Program (2016), Bates No. 107283-107284: Monitoring is adaptive – the monitoring program incorporates the flexibility to be modified if needed. For instance, it can be modified if monitoring results identify the need to incorporate a follow-on study or if additional parameters or sites need to be monitored to gather the information required to understand sources or stressors and their impacts. See also *id.* Bates No. 107323, Follow Up Site Visits and Investigation, which requires: "This element addresses Section 5.4 of the MS4 permit, which requires DOEE to '… identify, investigate, and address areas and/or sources within its jurisdiction that may be contributing excessive levels of pollutants to the MS4 and receiving waters…'"
Provision C.8.h (Report data and monitoring; report data electronically)	Item 693, Washington, D.C. (2011) (Permit No. DC0000221), Bates No. 107126 (electronic reporting of monitoring results); Item 696, Washington, D.C., Revised Monitoring Program (2016), Bates No. 107348: "DOEE's monitoring data (quantitative and qualitative) will be input into separate Microsoft Access databases for each component of the Revised Monitoring Program…." *Id*. at Bates No. 107328: "Data are initially recorded on paper data sheets and then transferred into an electronic database." Item 697, Albuquerque MS4 Permit, Bates No. 107455:

	requiring electronic submission of discharge monitoring reports, annual reports, and all other reports required under the permit.
Provision C.10.a.i, ii, and iii (Permittees shall implement trash load reduction control actions to meet the goal of 100 % or no adverse impact to receiving waters from trash by July 1, 2022; Permittees shall demonstrate attainment; mandatory minimum trash capture) **Provision C.10.b** (Permittees shall demonstrate trash reduction)	Item 693, Washington, D.C. (2011) (Permit No. DC0000221), Bates No. 107114: The permittee shall continue to ensure the implementation of a program to further reduce the discharge of floatables (e.g. litter and other human-generated solid refuse). The floatables program shall include source controls and, where necessary, structural controls. *Id.*, Bates No. 107117-107118: At the end of the first year the permittee must submit the trash reduction calculation methodology with Annual Report to EPA for review and approval. The methodology should accurately account for trash prevention/removal methods beyond those already established when the TMDL was approved, which may mean crediting a percentage of certain approaches. The calculation methodology must be consistent with assumptions for weights and other characteristics of trash, as described in the 2010 Anacostia River Watershed Trash TMDL. Annual reports must include the trash prevention/removal approaches utilized, as well as the overall total weight (in pounds) of trash captured for each type of approach. *Id.* at Section 4.4.1, Bates No. 107110: Inventory of Critical Sources and Source Controls: *Ibid.,* 4.4.1.1: The permittee shall continue to maintain a watershed-based inventory or database of all facilities within its jurisdiction that are critical sources of stormwater pollution. *Id.*, 4.4.1.3, Bates No. 107111: The permittee shall update its inventory of critical sources at least annually. *Ibid.* 4.4.2: Inspection of Critical Sources. The permittee shall continue to inspect all commercial facilities identified in Part 4.4.1. herein and any others found to be critical sources twice during the five-year term of the permit. A minimum interval of

	six months between the first and the second mandatory compliance inspection is required, unless a follow-up inspection to ensure compliance must occur sooner. *Id.*, Section 4.7.1, Bates No. 107113: The permittee shall continue to implement an ongoing program to detect illicit discharges, pursuant to the SWMP, and Part 4 of this permit, and to prevent improper disposal into the storm sewer system, pursuant to 40 C.F.R. § 122.26(d)(2)(iv)(B)(1). Such program shall include, at a minimum the following: … d. Visual inspections of targeted areas. *Id.*, Section 4.10.1, Bates No. 107117-107118, Anacostia River Watershed Trash TMDL Implementation: The permittee shall attain removal of 103,188 pounds of trash annually, as determined in the Anacostia River Watershed Trash TMDL, as a specific single-year measure by the fifth year of this permit term. *Id.*, Section 4.10.3, Bates No. 107118: Consolidated TMDL Implementation Plan requiring, where applicable, "numeric benchmarks [which] will specify annual pollutant load reductions and the extent of control actions to achieve these numeric benchmarks" and interim milestones. The plan must also demonstrate, using modeling, how goals will be attained and include a narrative explanation for the schedules and controls proposed. Item 696, Revised Monitoring Program, Bates No. 107279. Trash monitoring. Trash monitoring occurs at stormwater outfalls where trash traps have been installed during wet weather events. It will be implemented at three sites in the Anacostia Watershed, two in the Potomac Watershed, and one in the Rock Creek Watershed. A number of categories of trash are quantified and the total weight of trash from each site will be recorded. Sample collection and analysis, quality control, reporting and adaptive management are described. The information collected through trash monitoring will inform the MS4 Program

	about trends in trash accumulation and the success of trash control efforts. See also *id.*, Bates No. 107324-107328, Trash Monitoring: Reductions must be made through a combination of the following approaches: 1. Direct removal from waterbodies, e.g., **stream clean-ups,** skimmers 2. Direct removal from the MS4, e.g., catch basin clean-out, trash racks Item 670, Worcester Draft Permit, Bates No. 105700, requires the control the discharge of spills and prohibits the dumping or disposal of materials, including but not limited to industrial and commercial wastes, trash, used motor vehicle fluids, food preparation waste, leaf litter, grass clippings, and animal wastes into its MS4. *Id.,* Bates No. 105707. requires direct removal prior to entry to the MS4, e.g., street sweeping: The Permittee shall continue a street sweeping program that removes sand, sediment and debris and includes year-round (weekly or more often) main line and arterial sweeping, spring city-wide residential sweeping, fall city-wide street sweeping and leaf pick-up program. As a goal, the Permittee shall compress its spring residential sweeping schedule to maximize the quantity of material collected at the end of the winter season. The Permittee shall document results of its sweeping program including, at a minimum: curb miles swept, dates of cleaning, cubic yards of material collected, and method(s) of reuse or disposal. *Id.*, Bates No. 105701-2: Prevention through additional disposal alternatives, e.g., public trash/recycling collection *Id.* Bates No. 105709: The Permittee shall continue to inspect, maintain, and monitor the Vortechnics Model 16000 storm water treatment device installed as a demonstration project during the first permit term on the Belmont Street Drain. *Ibid.*: The Permittee shall continue to inspect, maintain, and monitor the resource restoration project at Salisbury Pond, which included the installation of hydrodynamic separators at two outfalls into the pond, to reduce nutrients and sediment from entering the pond. The project shall include public

	education elements and the tracking of pollutant removal effectiveness of the separators. The Permittee shall continue to inspect, maintain, and monitor the resource restoration project at Indian Lake, which included the installation of three hydrodynamic separators to remove sediment and nutrients from entering the Lake. The project shall also include public education elements and ongoing operation and maintenance of the separators. Item 669, NH Draft Small MS4 Permit, Bates No. 105676. Permittee required to establish procedures for management of trash containers at parks (scheduled cleanings; sufficient number), and for placing signage in areas concerning the proper disposal of pet wastes. *Id.*, Bates No. 105672Provisions for construction program to include: Requirements to control wastes, including but not limited to, discarded building materials, concrete truck wash out, chemicals, litter, and sanitary wastes. These wastes may not be discharged to the MS4. Item 701, Boise/Garden City Area MS4 Permit, Bates No. 107762: Throughout the Permit term, the Permittee must implement effective methods to reduce litter within their jurisdiction. The Permittee must work cooperatively with others, as appropriate, to control litter on a regular basis, and after major public events, in order to reduce the discharge of pollutants to receiving waters. Item 697, Albuquerque MS4 Watershed Permit, Bates No. 107438-107439 Permittee required to: "[D]evelop, update and implement a program to address and control floatables in discharges into the MS4… include[ing] source controls and, where necessary, structural controls." Develop a schedule for implementation of the program to control floatables in discharges into the MS4. Certain permittees required to "update the schedule according to the findings of [scientific studies]" Estimate the annual volume of floatables and trash removed from each control facility and characterize the floatable type. Permittee required to detail methods of compliance and "assess the overall success of the program, and document the

	program effectiveness in the annual report." *Id.,* at Bates No. 107451. Floatables material monitoring required.

F. The Supreme Court Held that the Regional Water Board's Findings Regarding Implementation of Federal Law Are Entitled to Deference.

An essential underpinning of *Department of Finance* is the Supreme Court's determination that the LA Permit had as its roots both federal and State law. The Los Angeles Water Board made no finding that the permit requirements were necessary or the only means of implementing the MEP standard.[123] Instead, the Los Angeles Water Board found only that the permit was consistent with or within the federal standard. In *Department of Finance*, the Supreme Court held that, "Had the Regional Board found when imposing the disputed permit conditions, that those conditions were the only means by which the maximum extent practicable standard could be implemented, deference to the board's expertise in reaching that finding would be appropriate."[124]

In contrast to the LA MS4 permit, when issuing MRP 2.0, the San Francisco Regional Water Board implemented *only federal law*: "The authority exercised under this Permit is not reserved state authority under the CWA's savings clause … but instead, is part of a federal mandate to develop pollutant reduction requirements for MS4. To this extent, it is entirely federal authority that forms the legal basis to establish the permit provisions."[125] Findings No. 9, 10 and 11 of the Permit and Fact Sheet Section V.C set forth the Board's regulatory basis for issuing the permit. Collectively, these findings make it clear that the Board intended to and did rely solely on federal law in issuing the Permit.[126]

The Regional Water Board understands the Supreme Court to mean that, to be entitled to deference, regional water boards must make an express finding that the particular set of permit conditions finally embodied in a given permit is required to meet that federal standard, and must support that finding with evidence. Unlike the LA MS4 permit, MRP 2.0 made specific findings demonstrating that the permit provisions were necessary to implement the maximum extent practical standard:

> The requirements of the Permit are necessary to reduce the discharge of pollutants to the MEP. The Water Board finds that the requirements of the Permit are practicable, do not exceed federal law, and thus do not constitute an unfunded mandate. These findings are the expert conclusions of the principal state agency charged with implementing the NPDES program in California (CWC sections 13001, 13370). The provisions in this to effectively prohibit non-

[123] *Dept. of Finance v. Comm'n on State Mandates, supra,* 1 Cal.5th at p. 768.

[124] *Ibid.*

[125] See Item 467, MRP 2.0 Fact Sheet, Bates No. 83728 (["[T]his Permit implements federally-mandated requirements under CWA section402, subdivision (p)(3)(B)") and Bates No. 83724 ("The Basin Plan's comprehensive program requirements are designed to be consistent with federal regulations (40 CFR Parts 122-124) and are implemented through issuance of NPDES permits to owners and operators of MS4s").

[126] *Id.* at Bates No. 83560-83561.

> stormwater discharges are also mandated by the CWA (33 USC section 1342(p)(3)(B)(ii)).[127]
>
> [Th]e Water Board finds that the requirements in this Order are reasonably necessary to protect beneficial uses identified in the Basin Plan.[128]

As the Supreme Court held, "deference to the board's expertise in reaching that finding would be appropriate."[129]

G. The Supreme Court and Recent San Diego Mandates Decisions Have No Impact on This Permit.

Last month, the California Court of Appeal, Third Appellate District, issued its opinion in *Department of Finance v. Commission on State Mandates*, Case No. C070357 (filed December 19, 2017, 3rd Dist. Ct. App.) (2017 WL 6461994) (the "San Diego Opinion"). The San Diego Opinion conflicts with key provisions set forth in the Supreme Court's decision in *Department of Finance*. These provisions include the Court's recognition that deference is due to the Water Boards' factual findings that Permit provisions are necessary (i.e., the "only way") to meet the MEP standard, and the Court's reliance on evidence other than "federal law, regulation, or administrative case authority" to determine whether the permit provisions at issue were federal mandates.

Notably, neither the San Diego Mandates Decision nor the Supreme Court addressed critical questions here, including but not limited to (a) whether the requirement has general applicability; (b) whether the permit programs at issue are new; (c) whether the permit programs represent a higher level of service than required in previous permits; (d) whether TMDL-based provisions required by section 303(d) of the Clean Water Act are federally mandated; (e) whether requirements implementing the Clean Water Act's effective prohibition of non-stormwater discharges into the MS4 are federally mandated; and (f) whether permittees have the ability to impose fees or charges to fund the programs at issue. The Water Boards believe the San Diego Opinion was wrongly decided and are considering all options for seeking review.

IV. <u>There is No Unfunded Mandate Where the Requirement Has General Applicability.</u>

Claimant contends that the Permit requirements are unique to public entities because they arise from the operation of an MS4, which involves activities different from private non-governmental dischargers. These include "the development and amendment of government planning documents, the inspection of property, the development and construction of public work projects and other purely government functions."[130] In fact, many entities in the San Francisco Bay Region are on the Bay margin, involving potential stormwater discharges to San Francisco Bay; NPDES permits regulate those facilities.

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[127] Item 467, MRP 2.0, Bates No. 83730.

[128] *Id.*, Bates No. 83722.

[129] *Department of Finance v. Comm'n on State Mandates, supra,* 1 Cal.5th at p. 768.

[130] Test Claim p. 5.10.

In order to obtain reimbursement, the Claimants must demonstrate either that (1) the program must carry out a governmental function of providing services to the public, or (2) the requirements, to implement a state policy, implement unique requirements on local governments and do not apply generally to all residents.[131] "[T]he intent underlying section 6 was to require reimbursement to local agencies for the costs involved in carrying out functions peculiar to government, not for expenses incurred by local agencies as an incidental impact of laws that apply generally to all state residents and entities."[132]

Reimbursement to local agencies is required only for the costs involved in carrying out functions peculiar to government, not for expenses incurred by local agencies as an incidental impact of laws that apply generally to all state residents and entities. Laws of general applicability are not entitled to subvention because they do not "force" programs on localities.[133] The fact that a requirement may single out local governments is not dispositive; where local agencies are required to perform the same functions as private industry, no subvention is required.[134]

EPA requires both municipal and non-municipal stormwater discharges to be controlled.[135] Moreover, numerous provision of the Permit are "laws of general applicability" and therefore fail to constitute an unfunded state mandate.[136] Compliance with NPDES regulations, and specifically with stormwater permits, is required of private industry as well as state and federal government agencies. Local government is not subject to "unique" requirements. Thus, while the MRP 2.0 provisions applied only to the municipalities and counties enrolled in the permit, the substantive actions required by the Permit's provisions were by no means unique to this class of permittee.

A. Provision C.8 (Monitoring)

With respect to the monitoring requirements in Provision C.8, federal law requires *all* NPDES permits to include monitoring "sufficient to yield data which are representative of the monitored activity including, when appropriate, continuous monitoring."[137] In keeping with this requirement, the monitoring obligations in Provision C.8 are common to non-municipal NPDES permittees in the Bay Area. For instance, Provision C.8.b, which provides for contribution to the Regional

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131 Cal. Const. Art. XIIIB, § 6, subd. a; see also *City of Richmond v. Comm'n on State Mandates* (1998) 64 Cal.App.4th 1190, 1199.

132 *San Diego Unified School Dist.* v. *Comm'n on State Mandates*, *supra*, 33 Cal.App.4th at p. 874.

133 *Id.* at p. 875; *County of Los Angeles v. State of California, supra,* 43 Cal.3d at pp. 56-57.

134 *Ibid.; City of Richmond v. Comm'n on State Mandates, supra,* 64 Cal.App.4th at p. 1197 ("[a]lthough a law is addressed only to local governments and imposes new costs on them, it may still not be a reimbursable mandate"); *County of Los Angeles v. State of California, supra*, 43 Cal.3d at pp. 50-51 ("the drafters and the electorate had in mind subvention for the expense or increased cost of programs administered locally and for expenses occasioned by laws that impose unique requirements on local governments and do not apply generally to all state residents or entities").

135 40 C.F.R. § 122.26, subd. (a)(vi)(6).

136 See *City of Richmond v. Comm'n on State Mandates, supra,* 64 Cal.App.4th at pp. 1197-1198.

137 40 C.F.R. § 122.48, subd. (b).

Monitoring Program or equivalent regional monitoring networks, is not limited to municipal dischargers.[138] The current San Francisco Bay Mercury Watershed Permit allows industrial and municipal wastewater dischargers to participate in the Regional Monitoring Program.[139] Pollutants of concern identification and monitoring akin to Provision C.8.e is not unique to municipalities but also required in individual NPDES permits.[140] Similarly, both general and individual NPDES permits also require electronic reporting, as required in Provision C.8.h.[141]

B. Provision C.10 (Trash)

The prohibition against discharging any solid waste and floating materials, including trash, is applied to many types of non-municipal NPDES permittees, as a refinement of the general prohibition on non-stormwater discharges.[142] In most circumstances outside of the municipal stormwater context, strict compliance is required, and dischargers are not permitted to achieve zero discharge over time. The Permit is thus generally applicable, but *less* stringent than individual permits.

C. Provisions C.11.f and C.12.f (TMDL Implementation)

Provisions C.11.f and C.12.f, which require Permittees to conduct pilot feasibility studies to divert mercury and PCBs, respectively, to public treatment works, implement the mercury and PCBs TMDLs in the San Francisco Bay. In addition to being mandated by federal law, these two provisions are also generally applicable to entities aside from local agencies.[143] The Mercury TMDL has wasteload allocations for stormwater runoff, wastewater from refineries and other industrial dischargers, and publicly-owned treatment works, while the PCBs TMDL has

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[138] See Item 711, San Francisco Bay Regional Water Quality Control Board, Reso. No. 92-043 (*Implementation of the Regional Monitoring Program within the San Francisco Bay Region*) (resolving to suspend monitoring requirements for permitted dischargers that allocate resources to the RMP), Bates No. 108366-108368. See also Item 712, Bates No. 108369 et seq., Order No. R2-2006-0029 (*USS-POSCO*) (individual NPDES permit requiring steel processor to participate in RMP); Item 715, Bates No. 108796, Order No. R2-2007-0077 (Mercury Watershed Permit) (recommending participation in RMP); see also Item 687, Mercury TMDL Staff Report, Bates No. 106871 (describing RMP), 106878 (describing utility of RMP), 106879 (RMP data is important in determining whether TMDL load allocations will reduce mercury concentrations in fish tissue); 106900 (RMP data guides adaptive management and implementation of TMDL).

[139] Item 722, Order No. R2-2012-0096, Bates No. 109905.

[140] See, e.g., Item 712, Order No. R2-2006-0029 (*USS-POSCO*), Bates No. 108382-108383 (requiring steel processor to identify types of pollutants of concern, sources and methods of reduction, and effectiveness of such methods); see also Item 713, Order No. R2-2006-0035 (*Chevron*), Bates No. 108545, 108549 (describing requirement for Chevron to conduct ambient background monitoring and specifying representative location).

[141] See, e.g., Item 707, 2009 Construction General Permit (CGP), Bates No. 107908, 107916, 107831-107933, 107960, 107965, 107969; Item 718, Schnitzer Steel, Order No. R2-2016-0045, Bates No. 109126.

[142] See, e.g., Item, 707, 2009 CGP, Bates No. 107961 (prohibition on discharge of debris, defined as “litter, rubble, discarded refuse, and remains of destroyed inorganic anthropogenic waste”); Item 710, Bay Ship & Yacht, Order No. 2005-0039, Bates No. 108320 (prohibitions on discharge of “solid materials and solid wastes” and “floating oil or other floating material”); Item 718, Schnitzer Steel, Order No. R2-2016-0045, Bates No. 109087 (prohibition on discharge of “untreated stormwater… or waste materials” including “rubbish, refuse, or debris”); Bates No. 109094 (requiring Water Pollution Prevention Plan to identify the activities that generate refuse and debris, “locations where these materials may accumulate, source types and characteristics”); Bates No. 109096 (requiring all debris and waste to be cleaned up and disposed of properly).

[143] See generally Items 685 (PCBs TMDL Staff Report_ and 687 (Mercury TMDL Staff Report)..

wasteload allocations for industrial wastewater discharges, municipal discharges, stormwater, and the Central Valley watershed.[144]

> The stormwater runoff allocations implicitly include all current and future permitted discharges, not otherwise addressed by another allocation, and unpermitted discharges within the geographic boundaries of urban runoff management agencies including, but not limited to, *California Department of Transportation (Caltrans) roadway and non-roadway facilities and rights-of-way*, atmospheric deposition, public facilities, *properties proximate to stream banks, industrial facilities, and construction sites*."[145]

Under both TMDLs, municipalities managing stormwater have comparable obligations to those of Caltrans[146] or industrial facilities managing wastewater and/or stormwater to identify and reduce their discharges of mercury and PCBs.[147] Caltrans' responsibility for reducing stormwater discharges demonstrates that the TMDL requirements were not targeted at local municipalities alone. To the contrary, responsibility for TMDL compliance lies with all the entities discharging the relevant pollutant, whether the entities are public or private, state or local.[148] In the case of the PCBs and Mercury TMDLs, local, state, and private entities were all required to reduce their discharges of PCBs and mercury.[149] With respect to reducing mercury in stormwater specifically, shuttered mines, whether privately or publicly owned, share responsibility for implementing control actions with municipal agencies.[150] Similarly, Caltrans, industry, developers, and municipal stormwater agencies bear responsibility for reducing PCBs in stormwater.[151]

Industrial and municipal wastewater dischargers, including one federal facility, meanwhile, are subject to a mercury and PCBs watershed NPDES permit.[152] Under this permit, similar to

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[144] See Item 687, Mercury TMDL Staff Report, Bates No. 106882-106884; Item 685, PCBs TMDL Staff Report, Bates No. 106600-106601.

[145] See Item 685, PCBs TMDL Staff Report, Bates No. 106609 (emphases added).

[146] The Mercury TMDL contemplated that various provisions would be added to NPDES permits as a result of the TMDL, including investigations and reporting regarding mercury contamination; mercury source control program; monitoring; fate and transport studies; allocation-sharing with Caltrans; annual reporting; compliance with loadings via pollution prevention, source control, and treatment. (Item 687, Mercury TMDL staff report, Bates No. 106929.) Caltrans was subject to similar requirements as those imposed in MRP 2.0. (Item 708, Caltrans permit, Bates No. 108187.)

[147] See Item 687, Mercury TMDL Staff Report, Bates No. 106885-106886, 106890; Item 685, PCBs TMDL Staff Report, Bates No. 106608 (wasteload allocations for municipal and industrial dischargers would be implemented through BMPs); Bates No. 106610 (diversion of dry and/or wet weather flows to POTWs "should be investigated, pilot-tested, and implemented where feasible").

[148] Item 686, Basin Plan, Bates No. 106694 – 106703 (mercury sources); 106712 – 106716 (PCB sources); See also the Mercury and PCBs watershed permit, Item 722, Order No. R2-2012-0096, Bates No. 109834, which directs compliance for municipal and industrial wastewater facilities.

[149] Item 686, Basin Plan, Bates No. 106712 – 106713 (Sources of PCBs required to implement wasteload reductions); Bates No. 106694-106703 (listing sources of mercury and methylmercury).

[150] Item 686, Basin Plan, Bates No. 106702.

[151] *Id.* Bates No. 106713-106714; Item 722, Order No. R2-2012-0096, Bates No. 109835-109841 (listing permittees).

[152] Item 722, Order No. R2-2012-0096, Bates No. 109835-109841 (listing permittees).

(footnote continued on next page)

stormwater agencies, wastewater dischargers are required to achieve stringent load reductions. To achieve these, they must not only achieve effluent limitations, but must implement source control programs to reduce the amount of PCBs and mercury entering their treatment systems.[153] NPDES permits in the Bay Area impose requirements of feasibility studies akin to the requirements in C.11.f and C.12.f.[154]

V. The Permit Is Consistent With Federal Law; It Does Not Require a New Program or Higher Level of Service.

Section 6 of article XIII B of the California Constitution states, "[w]henever the Legislature or any state agency mandates a new program or higher level of service on any local government, the State shall provide a subvention of funds to reimburse such local government for the costs of such program or increased level of service…." In this case, the contested provisions of the Permit are not new programs or higher levels of service, and in some cases were proposed by the permittees.[155]

A. MRP 2.0 Is a Continuation of the 2009 MRP, Not a New Program.

Claimant suggests that federal law did not compel the contested provisions, "because the State's NPDES program is undertaken on a voluntary basis" and "the State was not compelled to operate its own permitting system. . . Accordingly, the regional board's exercise of a 'true choice' constitutes a state mandate of costs associated with the contested permit provisions." [156] Contrary to Claimant's statements, federal law compels the adoption of MRP 2.0. "[T]he Clean Water Act requires an NPDES permit to be issued for *any* storm sewer discharge, whether there is any actual impairment in a particular region."[157]

The Clean Water Act requires municipalities to apply for an NPDES permit that must meet various federally mandated requirements. The state's "choice" to administer the program in lieu of the federal government does not alter the federal requirements on municipalities. If California had not decided to administer the NPDES program, Permittees would still receive a permit from U.S. EPA. As shown in the table above, a permit issued by U.S. EPA would contain the very

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(footnote continued from previous page)

[153] Item 722, Order No. R2-2012-0096, Bates No. 109849-109858 (effluent limitations and discharge specifications).

[154] See Item 714, Order No. R2-2007-0032 (*C&H Sugar*), Bates No. 108700-108701 ; Item 715, R2-2007-0077 (*Mercury Watershed Permit*), Bates No. 108823-108824 (requiring both industrial and municipal dischargers to provide description of source control projects, including estimates of avoided mercury loading achieved by recycling water).

[155] The Regional Water Board has previously briefed this matter with respect to the 2009 MS4 permit, which had similar requirements. See 2011 Response, pp. 25-27 (prior permits include management plans, monitoring programs and annual reports that demonstrate permittees had already implemented numerous provisions); pp. 30-42 (Provision C.8 does not require new programs or higher levels of service); 49-53 (Provision C.10 does not require new programs or higher level of service); 55-56 (Provisions C.11 and C.12 do not require new programs or higher level of service); 59-63 (Provision C.2 does not require new programs or higher levels of service). See also December 20, 2016 Brief at pp. 4-6.

[156] Test Claim, p. 5.9.

[157] *City of Rancho Cucamonga v. Regional Water Quality Control Bd. – Santa Ana Region* (2006) 135 Cal.App.4th 1377, 1386.

same substantive requirements as MRP 2.0. In its role in issuing NPDES permits to dischargers, the Regional Water Board must implement the regulatory requirements U.S. EPA has established for state permitting agencies.[158]

A program is defined as "a program which carries out the 'governmental function of providing services to the public, or laws which, to implement a state policy, impose unique requirements on local governments and do not apply generally to all residents and entities in the state.'"[159] A program is "new" if the local government had not previously been required to institute it. (*Ibid*.) Here, even if each of the challenged provisions could be considered a "program," none meets this definition of "new." Permittees had been permitted under the NPDES program for more than two decades at the time the 2015 MRP was adopted.[160] Permittees' prior permits contained requirements for implementing mercury and PCBs TMDLs and implementing trash reduction activities which would result in a zero trash load by 2022.[161] EPA recognized and supported the evolution of permit terms based on permittees' successes in earlier permit terms and lessons learned by the agency.[162]

1. Provisions Implementing Mercury and PCBs TMDLs Predate MRP 2.0.

Description of phased implementation belies that this is a new program. The Mercury and PCBs TMDLs and their implementation plans were approved by EPA in 2008 and 2010, respectively, predating MRP 2.0 by a substantial amount of time. Both TMDLs envisaged that achievement of the required load reductions would take approximately 20 years, or four 5-year NPDES permit cycles. As one example, the PCBs TMDL anticipated that requirements would be refined and strengthened over two decades[163] as more information was gathered:

> These BMPs and control measures are expected to be implemented in phases as NPDES permits are issued and reissued. In the first five-year permit term, stormwater permittees will be required to implement control measures on a pilot scale to determine their effectiveness and technical feasibility…. The second five-year term permit requirements will be based on the knowledge gained during the first permit term and will call for strategic implementation of the BMPs and control measures identified as effective and that will not cause significant adverse environmental impacts based on the pilot studies conducted during the first permit term. The second term permit will also require development of a plan

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158 40 C.F.R. § 123.25.

159 *County of Los Angeles v. Comm'n on State Mandates* (2003) 110 Cal. App.4th 1176, 1189 (citing *County of Los Angeles v. State of California* (1987) 43 Cal. 3d 46, 56).

160 See Item 467, MRP 2.0, Bates No. 83559-83560; Item 721, 2009 MRP, Bates No. 109547-109548(listing prior permits for all municipalities) and Bates No. 109681-109684 (prior permits include management plans, monitoring programs and annual reports that demonstrate permittees had already implemented numerous provisions).

161 See 2011 Response, pp. 30-42 (C.8); 49-53 (C.10); and 55-56 (C.11 and C.12).

162 Item 729, U.S. EPA Letter to SF Water Board, Bates No. 110608.

163 Item 686, Basin Plan, Bates No. 106717 (PCB stormwater allocations to be implemented by urban runoff management agencies and Caltrans over a 20-year implementation period).

> to fully implement control measures that will result in attainment of allocations, including an analysis of costs, efficiency of control measures and an identification of any significant environmental impacts. Subsequent permits will include requirements and a schedule to implement technically feasible, effective and cost efficient control measures to attain allocations. If as a consequence, allocations cannot be attained, the Water Board will take action to review and revise the allocations and these implementation requirements as part of adaptive implementation.[164]

The implementation program for stormwater entities anticipated that the second permit (the challenged MRP 2.0) would include broadly applicable requirements that reflected the results of pilot testing and any other new information gathered during the permit term[165]. Anticipated implementation actions to reduce mercury in stormwater included: source and treatment controls and management methods, while anticipated implementation actions for PCBs included: technologies to filter or treat stormwater, increased use of routine maintenance BMPs, industrial inspections to identify and direct removal PCBs-containing equipment, and a program to control demolition waste[166]. These expected categories of implementation actions mirror the terms of the current permit.

The program under which the green infrastructure and other TMDL requirements were included in the permit was not new in 2015. Permittees had been aware of the required load reductions since adoption of the TMDLs in 2008. They had had the opportunity to participate, and did participate, in TMDL development. The Santa Clara Valley Urban Runoff Prevention Program's input directly informed the cost analysis by the Regional Water Board for the Mercury TMDL.[167] Permittees were also aware that achievement of load allocations would be challenging,[168] and that permit terms would become more stringent as the twenty-year implementation deadline approached. Furthermore, they had participated actively in pilot green infrastructure projects and discussions about how to "scale up" over the course of the entire term of the 2009 permit.[169] If Permittees were concerned that the TMDLs imposed unfunded state mandates then they should have challenged them on such grounds. Because they did not do so, their collateral attack on the TMDL allocations by way of the MRP 2.0 provisions, is not timely.[170]

Accordingly, the Permit provisions cannot be viewed in isolation, but instead in the context of the TMDL adoption and implementation as a whole. Viewed in this way, the green infrastructure

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[164] Item 685, PCBs TMDL Staff Report, Bates No. 106610-106611.

[165] Item 686, Basin Plan, Bates No. 106703.

[166] Item 685, PCBs TMDL Staff Report, Bates No. 106609-106611.

[167] Item 687, Mercury TMDL Staff Report, Bates No. 106898.

[168] Item 686, Basin Plan, Bates No. 106717.

[169] See generally Steering Committee Minutes (Items 195-208), Green Infrastructure Workgroup Minutes (Items 378-385, starting at Bates No. 37460), POC Workgroup Minutes (Items 386-390, starting at Bates No. 37543). See also, footnote 71, *supra.*

[170] Cal. Code Regs., tit. 2, § 1183.1, subd. (c).

provisions are not a new program at all, but the continuation of a program that had been ongoing for the better part of a decade by the time the Board adopted MRP 2.0.

2. The MRP 2.0 Trash Provisions Are a Continuation of the Prior Permit.

Similarly, the schedule for trash reduction activities is not new. As discussed above, Clean Water Act and Basin Plan have prohibited the discharge of trash into receiving waters for decades. Both the 2009 MRP and MRP 2.0 required reduction of trash to zero load by the year 2022.

> The Permittees shall demonstrate compliance with Discharge Prohibition A.2 and trash-related Receiving Water Limitations through the timely implementation of control measures and other actions to reduce trash loads from municipal separate storm sewer systems (MS4s) by 40% by 2014, 70% by 2017, and 100% by 2022 as further specified below.[171]
>
> Permittees shall implement trash load reduction control actions in accordance with the following schedule and trash generation area management requirements, including mandatory minimum full trash capture systems, to meet the goal of 100 percent trash load reduction or no adverse impact to receiving waters from trash by July 1, 2022.[172]

Claimant concedes that the 2009 MRP "stated that Permittees must achieve phased annual reductions in trash loading culminating in 100 percent by 2022."[173] MRP 2.0 does not change that expectation.

Claimant also suggests that the 2009 MRP had goals whereas MRP 2.0 has enforceable deadlines, claiming that this distinction "constituted a new program."[174] In fact, this is a distinction without a difference. As a general practice, NPDES permits will not contain requirements that go beyond the five-year term of the permit. The indented language above belies any claim that Claimant

B. MRP 2.0 Does Not Mandate a Higher Level of Service.

The changes to the requirements of prior permits (e.g. increased detail or specificity) are also not a higher level of service, both because equivalent changes are applicable to non-municipal permittees, as discussed above, and because they are merely refinements of existing requirements.[175] A higher level of service is not simply any increase in costs. "If the Legislature had intended to continue to equate 'increased level of service' with 'additional costs,' then the

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[171] Item 721, 2009 MRP, Provision C.10, Bates No. 109635-109638.

[172] Item 467, MRP 2.0, Provision C.10.a, Bates No. 83655-83657.

[173] Test Claim, p. 5.12.

[174] *Ibid.*

[175] See *County. of Los Angeles v. Comm'n on State* Mandates (2003) 110 Cal.App.4th 1176, 1189-1190.

provision would be circular: 'costs mandated by the state' are defined as 'increased costs' due to an increased level of service, which, in turn would be defined as 'additional costs.'"[176] Additional costs do not equal "every increase in a locality's budget resulting from compliance with a new state directive."[177] Nor does every increase in specificity about where to direct costs amount to a higher level of service.[178]

Rather, the costs incurred must involve programs previously funded exclusively by the state.[179] The "state must be attempting to divest itself of its responsibility to provide fiscal support for a program, or forcing a new program on a locality for which it is ill equipped to allocate funding."[180]

In this case, any costs arising from the Permit's requirements do not result from a "new" program. Nor do they result from a "higher level of service," because the State has not shifted its own responsibilities to local agencies and the permittees are not "ill-equipped" to allocate funding to stormwater control. As described in the 2011 Response, the permittees' own documentation indicates that they have always been responsible for maintaining their trash collection services, storm drain system, etc.[181] Moreover, in rebutting the Regional Water Board's arguments that the challenged provisions impose a higher level of service, claimants do not contend that the state has shifted any costs to local government or that they have been saddled with entirely new obligations to control pollution in stormwater.[182] Without any burden shifting from the state to municipalities, mere direction from the Regional Water Board that the municipalities reallocate some of their resources in a particular way does not amount to a higher level of service.[183] "Loss of flexibility does not, in and of itself, require the [local agencies] to expend funds that previously had been expended by the State."[184]

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[176] See *County. of Los Angeles v. Comm'n on State* Mandates (2003) 110 Cal.App.4th 1176, 1191.

[177] *Id.* at p. 1194; accord *San Diego Unified School Dist. v. Comm'n on State Mandates* (2004) 94 Cal.4th 859, 876-877.

[178] See *Id.*, at p. 1194 (requiring that local law enforcement agencies devote some of their training budgets to domestic violence training was not higher level of service).

[179] See *City of San Jose v. State of California* (1996) 45 Cal. App.4th 1802, 1812 (citing *Lucia Mar Unified School Dist. v. Honig* (1988) 44 Cal.3d 830, 836); see also *County of Sonoma v. Comm'n on State Mandates* (2000) 84 Cal. App.4th 1264, 1288 (state law requiring reallocation of school funds from one local government entity to another, where local government generally had always had a substantial role in funding schools, did not impose a higher level of service).

[180] See *County of Los Angeles v. Comm'n on State Mandates, supra,* 110 Cal.App.4th at p. 1194; accord *Dept. of Finance v. Comm'n on State Mandates, supra,* 1 Cal.5th at p. 771 (agreeing that state had shifted responsibility for some industrial inspections to local government agency).

[181] See 2011 Response, pp. 25-27 (general); 30-42 (C.8); 49-53 (C.10); 55-56 (C.11 and C.12). The 2011 Response describes, in detail, the provisions of the prior permits that are equivalent to Provisions C.8.b (pp. 30-31), C.8.c (pp. 31-33), C.8.d (pp. 33-35), C.8.e (pp. 35-38), C.8.f (pp. 38-39), C.8.g (pp. 39-40), C.8.h (pp. 40-42), C.10.a (pp. 49-51); C.10.b (pp. 51-52); C.10.c (p. 53); C.10.d (p. 53), C.11.f and C.12.f (pp. 55-56).

[182] See Written Rebuttal Comments to Response to Test Claims 10-TC-01 and 10-TC-02 (Sept. 16, 2011), at pp. 10-11.

[183] See *County of Los Angeles v. Comm'n on State Mandates, supra,* 110 Cal.App.4th at p. 1194.

[184] *Ibid.;* accord *Dept. of Finance v. Comm'n on State Mandates* (2003) 30 Cal.App.4th 727, 748 (requirement that school districts allocate some of their grant funds in a particular way did not transform those costs into a reimbursable state mandate).

As documented in the 2011 Response, many program components, and their associated costs, existed before the MRP 2.0 was issued and many of the Permit's terms were proposed by Permittees. In addition, reported program costs are not all attributable to compliance with the MRP 2.0. For example, the Alameda Stormwater Quality Management Plan (1996-2001 Plan) documents involvement in the regional monitoring program and numerous other monitoring efforts in place as of 1996/97.[185] The 2001-2008 Alameda Stormwater Management Plan reflects the "use of street sweeping to remove potential pollutants prior to their being flushed into local creeks and the bay. All of the municipalities report their street sweeping and storm drainage cleaning activities on a standardized monthly form."[186]

1. TMDL Compliance Requirements Do Not Impose a Higher Level of Service

The evolution of permit conditions to reflect better information and require more effective pollution control does not, *ipso facto*, mean that the new permit terms require a higher level of service. The level of service of the TMDL is the load allocation, which was set at the time of the adoption of the TMDLs in 2008 and 2010. The Mercury TMDL recognized that the 50% load reduction for municipal stormwater permittees from 160kg to 82 kg of mercury/year was not achievable immediately, particularly given scientific uncertainty about the best control methods.[187] Similarly, while identifying the types of actions municipal stormwater permittees would have to take to reduce PCB loadings, the staff report acknowledged that it would take time to evaluate and refine these mechanisms to determine which were successful.[188] The terms of successive permits are all designed to achieve the original load allocations – that is, the original level of service, not to achieve additional reductions beyond what the TMDL requires.[189]

2. Trash Provisions Do Not Require a Higher Level of Service.

Claimant protests the addition of an 80% milestone in the Trash Provision,[190] but that milestone does nothing to change the consistent schedule and expectation in both the 2009 MRP[191] and MRP 2.0[192] that Permittees reduce trash loading to zero or a no adverse impact by 2022. Achievement of this interim milestone is the type of specificity or additional detail –

[185] Item 719, Alameda Stormwater Management Plan (1996-2001), Bates No. 109251-109256, 109298-109300.

[186] Item 720, Alameda Stormwater Management Plan (2001-2008), Bates No. 109449.

[187] Item 687, Mercury TMDL Staff Report, Bates No. 106880; Item 686, Basin Plan, Bates No. 106703-106704.

[188] Item 686, Basin Plan, Bates No. 106716-106717.

[189] E.g., Item 686, Basin Plan, Bates No. 106716-106717; see also Item 729, U.S. EPA Letter to SF Water Board, Bates No. 110608.

[190] Test Claim, p. 5.14

[191] Item 721, 2009 MRP, Bates No. 109635.

[192] Item 467, MRP 2.0, Bates No. 83655.

inconsequential in the scheme of the overall timetable – that courts have declined to find constitutes a higher level of service.[193]

Claimant further argues that because specific provisions were not in the prior permit, they are new or higher levels of service, even though Claimant had already undertaken those services – e.g. had a plan in place for trash.[194] But the fact that Claimant was *already performing* those services, in accordance with City plans or policies, means there is nothing *new*; there is no new cost to Claimant beyond what it had previously incurred for the same services.[195] Under these circumstances, there is no new program or higher level of service for which the State shifted responsibility.

Claimant argues that Provision C.10.b "specifies detailed full trash capture system installation and maintenance instructions, which are more prescriptive, burdensome and costly than MRP1 to fulfill."[196] Such a claim is disingenuous given Claimant's simultaneous acknowledgement that MRP1 "required Permittees to install and maintain full trash capture devices."[197] Similarly, Petitioners' claim that they are required to implement full-trash capture devices is misleading.More accurately, they have concluded it is the most cost-effective of multiple options: "compliance by means of Other Trash Management Actions (meaning non-full trash capture systems) has become so burdensome and costly that Union City has determined installation of full trash capture systems is the least costly compliance option."

Finally, Claimant makes various arguments concerning the need to purchase a vactor truck, which it concedes it already had.[198] Maintaining full trash capture devices was a requirement of the 2009 MRP, however, and is not a new requirement in MRP 2.0.[199] Specifying timeframes for cleaning the trash capture devices is another example of the type of specificity, additional inconsequential detail, that the *County of Los Angeles* case found was not a higher level of service.[200] A less frequent cleaning schedule would not meet the requirement, dating from the 2009 MRP, to maintain trash capture devices.[201]

Finally, Claimant provides a laundry list of activities it has undertaken to comply with the trash reduction requirements.[202] MRP 2.0 does not specify any of these actions.[203] These are

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[193] See *County. of Los Angeles v. Comm'n on State Mandates* (2003) 110 Cal.App.4th at p. 1194.

[194] Test Claim, pp. 5-7.

[195] *County of Los Angeles v. Comm'n on State Mandates, supra,* 110 Cal. App.4th at pp. 1189 (no new program) and 1193 (limited to programs previously funded exclusively by the state).

[196] Test Claim, p. 5.12.

[197] *Ibid.* See also Item 721, 2009 MRP, Provision C.10.a.iii, Bates No. 109636 (requiring full trash capture installation and maintenance).

[198] Test Claim, pp. 5.13-5.14.

[199] See Item 721, 2009 MRP, Provision C.10.a.iii, Bates No. 109635-109636.

[200] *County. of Los Angeles v. Comm'n on State* Mandates (2003) 110 Cal.App.4th at p. 1194.

[201] Item 721, 2009 MRP, Provision C.10.a.iii, Bates No. 109636.

[202] Test Claim, p. 5.14.

activities Claimant independently decided it would undertake to reduce trash loading; not requirements in the permit. Other options were available to Claimant, such as enforcing existing littering laws, to get to the next trash reduction goal. MRP 2.0 provided a flexible framework for Permittees to design their own programs to meet the trash reduction levels fundamentally required by the Clean Water Act.

VI. CONCLUSION

The evidence does not support any of the four factors that must *all* be proven for Claimant to prevail. Not only has the Legislature reaffirmed and reiterated that municipalities are able to raise fees for all costs associated with implementing the Permit, but the evidence is that Claimant and other Permittees have done just that. The NPDES permit program is an environmental protection program that applies to all dischargers – municipal and non-municipal alike – in the Bay Area. Non-municipal permittees throughout the Bay Area are subject to the same requirements as the contested provisions here. Finally, Claimant's own papers admit that numerous provisions were already required in past permits; the contested provisions are not a new program or higher level of service. Under these facts, the Commission should reject the Test Claim.

Respectfully submitted,

Tamarin E. Austin
Attorney IV
Office of Chief Counsel
State Water Resources Control Board

(footnote continued from previous page)
[203] See Item 467, MRP 2.0, Provision C.10.

cc:

Michael Lauffer, Chief Counsel; Michael.Lauffer@waterboards.ca.gov
Lori Okun, Assistant Chief Counsel; Lori.Okun@waterboards.ca.gov
Tamarin Austin, Attorney IV; Tamarin.Austin@waterboards.ca.gov
Thomas Mumley, Assistant Executive Officer, San Francisco Bay Regional Water Quality Control Board; Thomas.Mumley@waterboards.ca.gov
Keith Lichten, Chief, Watershed Management Division; Keith.Lichten@waterboards.ca.gov
Dale Bowyer, Section Leader; Dale.Bowyer@waterboards.ca.gov
Selina Louie, Water Resource Control Engineer; Selina.Louie@waterboards.ca.gov
Yuliya Scales, Staff Services Analyst, Yuliya.Scales@waterboards.ca.gov

DECLARATION OF SERVICE BY EMAIL

I, the undersigned, declare as follows:

I am a resident of the County of Sacramento and I am over the age of 18 years, and not a party to the within action. My place of employment is 980 Ninth Street, Suite 300, Sacramento, California 95814.

On February 9, 2018, I served the:

- **SFRWQCB Late Comments on the Test Claim filed February 1, 2018**
- **Administrative Record on Order No. R2-2015-0049, California Regional Water Quality Control Board, San Francisco Bay Region, (Volumes I-VIII) filed February 1, 2018**

  California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, 16-TC-03
  City of Union City, Claimant

by making it available on the Commission's website and providing notice of how to locate it to the email addresses provided on the attached mailing list.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this declaration was executed on February 9, 2018 at Sacramento, California.

Jill L. Magee
Commission on State Mandates
980 Ninth Street, Suite 300
Sacramento, CA 95814
(916) 323-3562

COMMISSION ON STATE MANDATES

Mailing List

Last Updated: 12/21/17

Claim Number: 16-TC-03

Matter: California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049

Claimant: City of Union City

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Antonio Acosta, City Manager, *City of Union City*
34009 Alvarado-Niles Road, Union City, CA 94587
Phone: (510) 675-5351
tonya@unioncity.org

Marni Ajello, Attorney, Office of Chief Counsel, *State Water Resources Control Board*
San Francisco Bay Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 327-4439
marnie.ajello@waterboards.ca.gov

Socorro Aquino, *State Controller's Office*
Division of Audits, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-7522
SAquino@sco.ca.gov

Tamarin Austin, Attorney, Office of Chief Counsel, *State Water Resources Control Board*
San Francisco Bay Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 341-5171
Tamarin.Austin@waterboards.ca.gov

Harmeet Barkschat, *Mandate Resource Services,LLC*
5325 Elkhorn Blvd. #307, Sacramento, CA 95842
Phone: (916) 727-1350
harmeet@calsdrc.com

Lacey Baysinger, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816

Phone: (916) 324-0254
lbaysinger@sco.ca.gov

Cindy Black, City Clerk, *City of St. Helena*
1480 Main Street, St. Helena, CA 94574
Phone: (707) 968-2742
cityclerk@cityofsthelena.org

Dale Bowyer, Section Leader, *San Francisco Bay Regional Water Quality Control B*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2323
Dale.Bowyer@waterboards.ca.gov

Allan Burdick,
7525 Myrtle Vista Avenue, Sacramento, CA 95831
Phone: (916) 203-3608
allanburdick@gmail.com

J. Bradley Burgess, *MGT of America*
895 La Sierra Drive, Sacramento, CA 95864
Phone: (916)595-2646
Bburgess@mgtamer.com

Gwendolyn Carlos, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 323-0706
gcarlos@sco.ca.gov

Daniel Carrigg, Deputy Executive Director/Legislative Director, *League of California Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8222
Dcarrigg@cacities.org

Annette Chinn, *Cost Recovery Systems,Inc.*
705-2 East Bidwell Street, #294, Folsom, CA 95630
Phone: (916) 939-7901
achinncrs@aol.com

Carolyn Chu, Senior Fiscal and Policy Analyst, *Legal Analyst's Office*
925 L Street, Sacramento, CA 95814
Phone: (916) 319-8326
Carolyn.Chu@lao.ca.gov

Michael Coleman, *Coleman Advisory Services*
2217 Isle Royale Lane, Davis, CA 95616
Phone: (530) 758-3952
coleman@muni1.com

Anita Dagan, Manager, Local Reimbursement Section, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 324-4112
Adagan@sco.ca.gov

Marieta Delfin, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-4320
mdelfin@sco.ca.gov

Donna Ferebee, *Department of Finance*
915 L Street, Suite 1280, Sacramento, CA 95814
Phone: (916) 445-3274
donna.ferebee@dof.ca.gov

Susan Geanacou, *Department of Finance*
915 L Street, Suite 1280, Sacramento, CA 95814
Phone: (916) 445-3274
susan.geanacou@dof.ca.gov

Dillon Gibbons, Legislative Representative, *California Special Districts Association*
1112 I Street Bridge, Suite 200, Sacramento, CA 95814
Phone: (916) 442-7887
dillong@csda.net

Catherine George Hagan, Senior Staff Counsel, *State Water Resources Control Board*
c/o San Diego Regional Water Quality Control Board, 2375 Northside Drive, Suite 100, San Diego, CA 92108
Phone: (619) 521-3012
catherine.hagan@waterboards.ca.gov

Heather Halsey, Executive Director, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
heather.halsey@csm.ca.gov

Sunny Han, Project Manager, *City of Huntington Beach*
2000 Main Street, Huntington Beach, CA 92648
Phone: (714) 536-5907
Sunny.han@surfcity-hb.org

Chris Hill, Principal Program Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, Sacramento, CA 95814
Phone: (916) 445-3274
Chris.Hill@dof.ca.gov

Justyn Howard, Program Budget Manager, *Department of Finance*
915 L Street, Sacramento, CA 95814
Phone: (916) 445-1546
justyn.howard@dof.ca.gov

Edward Jewik, *County of Los Angeles*
Auditor-Controller's Office, 500 W. Temple Street, Room 603, Los Angeles, CA 90012
Phone: (213) 974-8564
ejewik@auditor.lacounty.gov

Jill Kanemasu, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-9891
jkanemasu@sco.ca.gov

Anita Kerezsi, *AK & Company*
3531 Kersey Lane, Sacramento, CA 95864
Phone: (916) 972-1666
akcompanysb90@gmail.com

Michael Lauffer, Chief Counsel, *State Water Resources Control Board*
1001 I Street, 22nd Floor, Sacramento, CA 95814-2828

Phone: (916) 341-5183
michael.lauffer@waterboards.ca.gov

Keith Lichten, Division Chief, *San Francisco Bay Regional Water Quality Control B*
Watershed Management, 1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2380
klichten@waterboards.ca.gov

Selina Louie, Water Resource Control Engineer, *San Francisco Bay Regional Water Quality Control B*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2383
SLouie@waterboards.ca.gov

Hortensia Mato, *City of Newport Beach*
100 Civic Center Drive, Newport Beach, CA 92660
Phone: (949) 644-3000
hmato@newportbeachca.gov

Michelle Mendoza, *MAXIMUS*
17310 Red Hill Avenue, Suite 340, Irvine, CA 95403
Phone: (949) 440-0845
michellemendoza@maximus.com

Meredith Miller, Director of SB90 Services, *MAXIMUS*
3130 Kilgore Road, Suite 400, Rancho Cordova, CA 95670
Phone: (972) 490-9990
meredithcmiller@maximus.com

Thomas Mumley, Assistant Executive Officer, *San Francisco Bay Regional Water Quality Control B*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2395
thomas.mumley@waterboards.ca.gov

Gregory Newmark, *Meyers,Nave,Riback,Silver & Wilson*
Claimant Representative
555 12th Street, Suite 1500, Oakland, CA 94607
Phone: (510) 808-2000
gnewmark@meyersnave.com

Andy Nichols, *Nichols Consulting*
1857 44th Street, Sacramento, CA 95819
Phone: (916) 455-3939
andy@nichols-consulting.com

Lori Okun, Assistant Chief Counsel, *State Water Resources Control Board*
Regional Water Board Legal Services, 1001 I Street, Sacramento, CA 95814
Phone: (916) 341-5165
Lori.Okun@waterboards.ca.gov

Arthur Palkowitz, *Artiano Shinoff*
2488 Historic Decatur Road, Suite 200, San Diego, CA 92106
Phone: (619) 232-3122
apalkowitz@as7law.com

Steven Pavlov, Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, Sacramento, CA 95814

Phone: (916) 445-3274
Steven.Pavlov@dof.ca.gov

Jai Prasad, *County of San Bernardino*
Office of Auditor-Controller, 222 West Hospitality Lane, 4th Floor, San Bernardino, CA 92415-0018
Phone: (909) 386-8854
jai.prasad@atc.sbcounty.gov

Mark Rewolinski, *MAXIMUS*
808 Moorefield Park Drive, Suite 205, Richmond, VA 23236
Phone: (949) 440-0845
markrewolinski@maximus.com

Camille Shelton, Chief Legal Counsel, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
camille.shelton@csm.ca.gov

Carla Shelton, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
carla.shelton@csm.ca.gov

Eileen Sobeck, Executive Director, *State Water Resources Control Board*
1001 I Street, 22nd Floor, Sacramento, CA 95814-2828
Phone: (916) 341-5183
Eileen.Sobeck@waterboards.ca.gov

Jim Spano, Chief, Mandated Cost Audits Bureau, *State Controller's Office*
Division of Audits, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 323-5849
jspano@sco.ca.gov

Dennis Speciale, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 324-0254
DSpeciale@sco.ca.gov

Joe Stephenshaw, Director, *Senate Budget & Fiscal Review Committee*
California State Senate, State Capitol Room 5019, Sacramento, CA 95814
Phone: (916) 651-4103
Joe.Stephenshaw@sen.ca.gov

Derk Symons, Staff Finance Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, Sacramento, CA 95814
Phone: (916) 445-3274
Derk.Symons@dof.ca.gov

Jolene Tollenaar, *MGT of America*
2251 Harvard Street, Suite 134, Sacramento, CA 95815
Phone: (916) 243-8913
jolenetollenaar@gmail.com

Evelyn Tseng, *City of Newport Beach*
100 Civic Center Drive, Newport Beach, CA 92660
Phone: (949) 644-3127
etseng@newportbeachca.gov

Brian Uhler, Principal Fiscal & Policy Analyst, *Legislative Analyst's Office*

925 L Street, Suite 1000, Sacramento, CA 95814
Phone: (916) 319-8328
Brian.Uhler@LAO.CA.GOV

Renee Wellhouse, *David Wellhouse & Associates, Inc.*
3609 Bradshaw Road, H-382, Sacramento, CA 95927
Phone: (916) 797-4883
dwa-renee@surewest.net

Jennifer Whiting, Assistant Legislative Director, *League of California Cities*
1400 K Street, Suite 400, Sacramento , CA 95814
Phone: (916) 658-8249
jwhiting@cacities.org

Patrick Whitnell, General Counsel, *League of California Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8281
pwhitnell@cacities.org

Bruce Wolfe, Executive Officer, *San Francisco Bay Regional Water Quality Control B*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2314
bwolfe@waterboards.ca.gov

Hasmik Yaghobyan, *County of Los Angeles*
Auditor-Controller's Office, 500 W. Temple Street, Room 603, Los Angeles, CA 90012
Phone: (213) 974-9653
hyaghobyan@auditor.lacounty.gov

555 12th Street, Suite 1500
Oakland, California 94607
tel (510) 808-2000
fax (510) 444-1108
www.meyersnave.com

Gregory J. Newmark
Attorney at Law
gnewmark@meyersnave.com

meyers | nave

Exhibit D

RECEIVED
May 29, 2018
Commission on
State Mandates

May 29, 2018

VIA ELECTRONIC FILING

Heather Halsey, Esq.
Executive Director
Commission on State Mandates
980 9th Street, Suite 300
Sacramento, CA 95814

Re: City of Union City's Rebuttal to Department of Finance and Regional Water Board Comments on the Test Claim
California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049
10-TC-03

Dear Ms. Halsey:

This letter is submitted on behalf of the City of Union City, the Claimant in the above-captioned test claim, and transmits the City's rebuttal comments regarding the San Francisco Bay Regional Water Quality Control Board's (Regional Water Board) Comment Letter electronically served on February 9, 2018, and the Department of Finance's (Finance) comment letter dated October 10, 2017.

I. Introduction

The Regional Water Board's lengthy comments, as well as Finance's more succinct comments, are equally unpersuasive and confirm that the Commission on State Mandates (Commission) should approve Union City's Test Claim. Regional Water Board Order No. R2-2015-0049 (MRP2) imposes expensive new programs and higher levels of services on Union City to remove trash, PCBs and mercury from municipal storm water, and requires continued implementation of expensive monitoring programs at issue in Consolidated Test Claims 10-TC-01, 10-TC-02, 10-TC-03 and 10-TC-05. The Regional Water Board and Finance (collectively, Test Claim Opponents) do not dispute that they bear the burden of proving any exception to the constitutional general rule requiring subvention for state-mandated costs. They unsuccessfully try to carry this burden regarding the Fee Authority and Federal Mandates exceptions. Similarly, the Regional Water Board's argument that municipal storm water permittee costs are not subject to reimbursement because the NPDES is a "generally applicable" program also fails. Union City's storm water program provides municipal services to the public and implements

unique requirements not applicable to all residents. After consideration of the Test Claim Opponents' comments, it is apparent the Commission should approve Union City's Test Claim.

II. Test Claim Opponents Fail To Carry Their Burden of Demonstrating Union City's Alleged Fee Authority

A. Neither Test Claim Opponent Disputes That They Bear the Burden of Proving the Fee Authority Exception to Reimbursement

We note at the outset that while both the Regional Water Board and Finance contend that the Government Code section 17556, subdivision (d), fee authority exception applies to Union City's Test Claim, neither disputes that they bear the burden of proving applicability of the exception. Indeed, the Regional Water Board even quotes Union City's assertion in its Test Claim that "the Regional Water Board bears the burdens of proving the exception applies," (Regional Water Board Comments, p. 6), and does not take issue with the correctness of the City's statement of law. As the Supreme Court observed: "Typically, the party claiming the applicability of an exception bears the burden of demonstrating that it applies. [Citations.] Here, the State must explain why federal law mandated these requirements, rather than forcing the Operators to prove the opposite." (*Department of Finance v. Commission on State Mandates* ("*Dep't of Finance*") (2016) 1 Cal.5th 749, 769 citations omitted.) It is well established that when a party fails to carry its burden, "the party upon whom the burden rests to establish that fact should suffer, and not his adversary." (*Oldenburg v. Sears, Roebuck & Co.* (1957) 152 Cal.App.2d 733, 741, internal quotation and citation omitted.) Thus, since the Regional Water Board and Finance fail to carry their burden of showing the fee authority exception applies, it cannot be applied to the City's Test Claim.

B. Department of Finance's Contention that Possibility of Voter Approval Constitutes Fee Authority is Meritless

Finance's comments are meritless because they would eviscerate the subvention provisions of the Constitution, and no test claim could ever be approved if Finance's argument were accepted. Finance contends that "Local governments can choose not to submit a fee to the voters and voters can indeed reject a proposed fee, but not with the effect of turning permit costs into state reimbursable mandates," citing *Clovis Unified School District v. Chiang* (2010) 188 Cal.App.4th 794, 812. Finance attempts to extend the holding of *Clovis* to an absurd extent. In *Clovis*, the school district claimants were given specific statutory authority to charge the fees at issue. (*Id.* at 810 ["districts are statutorily authorized to charge students for health fees"]).) Finance argues "[t]he same reasoning applies to claimants here" because Union City could choose "to put a fee to the voters."

(Finance Comments, p. 2.) There is no legal basis, however, to analogize specific statutory fee authority to the power all public entities have to submit taxes to the voters.

Finance posits an impossible dilemma for test claimants: if claimants do not submit a fee to recover state mandated cost to the voters, or even if they do and the voters do not approve the fee, claimants have not utilized their alleged fee authority; if the voters do approve the fee, there would be local fee authority. Either way, according to Finance, it would not have to reimburse the state mandated costs. There is no way this position can be reconciled with the plain language of Proposition 4 and the intent of the electorate. The subvention mechanism enacted by the voters would be rendered completely illusory.

C. SB 231 Has No Effect on this Test Claim Since it Only Became Effective in 2018

The Regional Water Board's lead argument that Senate Bill 231, enacted in 2017, provides Union City with fee authority to pay for the state-mandated costs (Regional Water Board Comment, p. 6) fails for the simple reason that it became effective in 2018,[1] and this Test Claim must be approved based upon Fiscal Years 2015-16 and 2016-17. SB 231 has no effect on the availability of fee authority during the years that form the basis for the Commission's approval of the City's Test Claim. It is unnecessary for the Commission to weigh the effect of SB 231 on fee authority after its effective date to resolve this Test Claim, and it would be improvident to do so.

III. Test Claim Opponents Fail To Carry Their Burden To Show Costs are Imposed by Federal Mandates

As with the Fee Authority exception, Test Claim Opponents Regional Water Board and Finance bear the burden of demonstrating the alleged applicability of the Federal Mandate exception. This point was explicitly addressed in *Dep't of Finance*, and neither the Regional Water Board nor Finance disputes that they bear the burden of proving applicability of the Federal Mandates exception. (*Dep't of Finance, supra*, 1 Cal.5th at 769.) The Test Claim Opponents have failed to carry their burden, and so the "general rule requiring reimbursement of all state-mandated costs" must prevail. (*Ibid.*)

---

[1] "Under the California Constitution, a statute enacted at a regular session of the Legislature generally becomes effective on January 1 of the year following its enactment except where the statute is passed as an urgency measure and becomes effective sooner. (Cal.Const., art. IV, § 8, cl. (c)(1).)" (*People v. Henderson* (1980) 107 Cal.App.3d 475, 488.)

A. Controlling Authority Forecloses Test Claim Opponents Federal Mandates Position

The Commission now has the benefit of storm water-specific guidance from the California Supreme Court and the Third District Court of Appeal. The opinions in (*Dep't of Finance* and *Dep't of Finance v. Commission on State Mandates* (2017) 18 Cal.App.5th 661 ("San Diego Opinion") constitute controlling authority that forecloses most of the Regional Water Board's comments. Notwithstanding that "[t]he Water Boards believe the San Diego Opinion was wrongly decided," it remains binding precedent. (Regional Water Board Comment, p. 33.)

Union City respectfully submits that the Regional Water Board's arguments attempting to circumvent these appellate authorities should be viewed with great skepticism by the Commission. Taken together, the Regional Water Board's various arguments, including its contention that the NPDES program is generally applicable, amount to a suggestion that *Dep't of Finance* and the San Diego Opinion were a waste of time for California's High Court and all the other courts involved, not to mention the parties and amici, because the Regional Water Boards have thought of a new set of arguments. None of their arguments is well taken, and appellate authority cannot be ignored.

B. The Regional Water Board Mischaracterizes the Clean Water Act

In its zeal to prevail in the next round of storm water unfunded mandates cases, the Regional Water Board has unfortunately put forth a strained interpretation of the Clean Water Act that defies the actual language of the statute, EPA's implementing regulations and common sense. The Regional Water Board focuses on the Clean Water Act section 402(p)(3)(B)(ii) statement that municipal separate storm sewer system (MS4) permits "shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers." According to the Regional Water Board, this means: "the Clean Water Act *prohibits all* non-storm water discharges into the storm sewers. No trash. No PCBs. No mercury." (Regional Water Board Comments, p. 2, italics in original.) The plain language of the statute demonstrates that Congress intended that the municipal MS4 permittee would use its governmental powers to effectively prohibit third parties from discharging non-storm water into the MS4. This reading is supported by EPA regulations, which show municipalities comply with this statutory provision by having "adequate legal authority" to, for example, "[p]rohibit *through ordinance, order or similar means*, illicit discharges to the municipal separate storm sewer." (40 C.F.R. § 122.26(d)(2)(i)(B), italics added.) Thus, third parties are prohibited from discharging into the MS4, but there is no corollary prohibition on non-storm water discharges from a permitted MS4. It is unreasonable to suggest, nor does the

law provide, that an MS4 permittee is in automatic violation of the Clean Water Act whenever a member of the public tosses litter into a storm drain.

The Regional Water Board is apparently trying to focus the next round of storm water unfunded mandate cases on the Clean Water Act requirement regarding non-storm water discharges because its arguments about the Maximum Extent Practicable provision have been rejected by the courts. The Commission should reject the Regional Water Board's ill-conceived attempt to re-litigate all the same issues based on an even less convincing interpretation of the Clean Water Act.

C. The Regional Water Board had a True Choice in Crafting the TMDLs and Shifted State Costs onto Municipalities

The Regional Water Board unpersuasively argues it "had no 'true choice' but to include the TMDL-related provisions in the MRP 2[] that will result in attainment of the [applicable wasteload allocations] within the timeframe established in the TMDL . . . [i.e.,] 20 years." (Regional Water Board Comment, p. 16.) This contention is demonstrably false, as most cogently demonstrated by the Regional Water Board's own TMDL documentation. For example, in adopting the PCB TMDL, the Regional Water Board considered longer timeframes to achieve the wasteload allocations, including 70 and 100 year timeframes, and chose the shortest timeframe with the most stringent limitations on discharges from MS4s. (Total Maximum Daily Load for PCBs in San Francisco Bay Final Staff Report for Proposed Basin Plan Amendment ("PCB TMDL Staff Report"), p. 60. This was absolutely a "true choice," and it imposed greater costs on Union City than the other alternatives available.

Moreover, in making its true choice in how to structure and implement the applicable TMDLs, the Regional Water Board exercised its discretion to shift PCB and mercury mitigation obligations away from the State and onto MS4 permittees like Union City. It is important to note that the State of California owns all of the land underneath San Francisco Bay. (State Lands Commission, Map of CSLC Lands and Statement of California State Lands Commission Jurisdiction ["The State of California acquired sovereign ownership of all tidelands and submerged lands and the beds of navigable lakes and waterways upon its admission to the United States in 1850. The California State Lands Commission (Commission) has jurisdiction and management authority over these sovereign lands.]) In developing the PCB TMDL, the Regional Water Board estimated that the PCB mass in the active sediment layer of the Bay, which is owned by the State, "is an order of magnitude greater" than other PCB sources. (PCB TMDL Staff Report, p. 49.) "[B]ottom sediments are the largest environmental reservoir of PCBs in the Bay." (*Id.* at p. 48) Notwithstanding these admissions, the Regional Water Board nevertheless adopted a TMDL implementation strategy that placed the entire

burden of reducing PCB loads on parties other than the State. "[I]nternal sources are not assigned load allocations." (*Id.* at p. 62.)

Thus, not only did the Regional Water Board exercise discretion and made a true choice in developing and implementing the TMDLs at issue, it also structured this program to shift responsibility away from the State and onto local governments. This offends the very the purpose of article XIIIB, section 6, of the Constitution, which "is to preclude the state from shifting financial responsibility for carrying out governmental functions to local agencies, which are 'ill equipped' to assume increased financial responsibilities because of the taxing and spending limitations that articles XIII A and XIII B impose." (*County of San Diego v. State of California* (1997) 15 Cal.4th 68, 81.)

D. Union City's Stormwater Programs Carry Out a Governmental Function of Providing Services to the Public and Implement Unique Requirements

By virtue of its ownership of public rights of way that receive runoff from all the property in the City, and because of the need to manage storm water to prevent the loss of the lives and property of its citizens, Union City operates its MS4 to carry out a governmental function of providing services to the public and implements unique requirements that are not applicable to all residents. The Regional Water Board's argument that the City is just like any other entity subject to the NPDES program is unpersuasive and cannot be sustained.

E. Evidence and Argument Pertaining to Other Jurisdictions is Not Relevant to Union City's Test Claim

The Regional Water Board offers extensive evidence related to storm water programs of jurisdictions other than Union City. This evidence is irrelevant to adjudication of the City's test claim, is unduly burdensome to Union City and the Commission, and should be disregarded.

IV. Conclusion

For the reasons set forth in these rebuttal comments, as well as in the initial Test Claim package, Union City respectfully submits that its Test Claim should be approved. The Test Claim Opponents have not raised any valid reason to deny the

claim, and they have failed to carry their burden of proving application of exceptions to the general rule requiring reimbursement of all state-mandated costs.

Sincerely,



Gregory J. Newmark
Attorney at Law

2968220.1

DECLARATION OF SERVICE BY EMAIL

I, the undersigned, declare as follows:

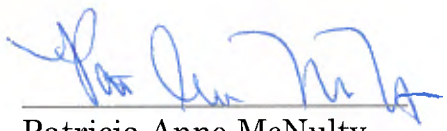
I am a resident of the County of Los Angeles and I am over the age of 18 years, and not a party to the within action. My place of employment is 707 Wilshire Boulevard, 24th Floor, Los Angeles, California 90017.

On May 29, 2018, I served the:

1. City of Union City's rebuttal letter

by electronically filing it on the Commission's website, which provides notice of how to locate it to the email addresses provided on the test claim mailing list.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this declaration was executed on May 29, 2018, at Los Angeles, California.



Patricia Anne McNulty

DECLARATION OF GREGORY J. NEWMARK

I, Gregory J. Newmark, declare as follows:

1. I am an attorney duly admitted to practice in California. I am a principal with the law firm Meyers, Nave, Riback, Silver & Wilson, attorneys of record for the City of Union City. I have personal knowledge of the facts set forth herein, except as to those stated on information and belief and, as to those, I am informed and believe them to be true. If called as a witness, I could and would competently testify to the matters stated herein.

2. On May 28, 2018, I downloaded Total Maximum Daily Load for PCBs in San Francisco Bay: Final Staff Report for proposed Basin Plan Amendment from the San Francisco Regional Water Quality Control Board's internet website at the following address: <https://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/TMDLs/sfbaypcbs/PCBs%20TMDL%20Final%20Staff%20Report%20April2017.pdf>. A true and correct copy of the report is attached hereto as Exhibit M.

3. On May 28, 2018, I downloaded maps of Statewide CSLC Lands, which includes a statement entitled "California State Lands Commission Jurisdiction," from the California State Lands Commission's internet website at the following address: <.http://www.slc.ca.gov/Info/EJ/EJ-JMap.pdf>. A true and correct copy of the maps and statement are attached hereto as Exhibit N.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct.

Executed May 29, 2018, at Los Angeles, California.

Gregory J. Newmark

2970419.1

EXHIBIT M

Total Maximum Daily Load for PCBs in San Francisco Bay

Final Staff Report
for Proposed Basin Plan Amendment



California Regional Water Quality Control Board

San Francisco Bay Region

February 13, 2008

San Francisco Bay Regional Water Quality Control Board
1515 Clay Street, Suite 1400
Oakland, CA 94612
Phone: 510-622-2300
Fax: 510-622-2460
http://www.waterboards.ca.gov/sanfranciscobay/water_issues/programs/tmdls/sfbaypcbstmdl.shtml

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1. Introduction

This Staff Report presents the supporting documentation for a proposed Basin Plan amendment that will be considered by the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board) that establishes a Total Maximum Daily Load (TMDL) and implementation plan for Polychlorinated Biphenyls (PCBs), including PCBs with dioxin-like properties, for all of San Francisco Bay. The TMDL is based on attainment of a fish tissue target PCBs concentration protective of human health, wildlife, and aquatic life. This report contains the results of analyses of PCBs impairment assessments, sources and loadings, linkage analyses, load reductions, and implementation actions.

The Clean Water Act requires California to adopt and enforce water quality standards to protect San Francisco Bay. The Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) delineates these standards, which include beneficial uses of waters in the Region, numeric and narrative water quality objectives to protect those uses, and provisions to enhance and protect existing water quality (antidegradation). The California Toxics Rule (CTR) is the basis for the numeric water quality criteria for PCBs in San Francisco Bay. Section 303(d) of the Clean Water Act requires states to compile a list of “impaired” water bodies that do not meet water quality standards and to establish a TMDL for the pollutant that causes impairment. The proposed TMDL and implementation plan are designed to resolve PCBs impairment in all segments of San Francisco Bay.

For the purpose of the report, all segments of San Francisco Bay include the portion of the Sacramento and San Joaquin Delta in the San Francisco Bay Region, and all portions and contiguous tidal zones of Suisun Bay, Carquinez Strait, San Pablo Bay, Richardson Bay, Central Bay, Lower Bay and South Bay. Throughout this report, the terms San Francisco Bay and Bay are inclusive of all these segments.

This report provides the rationale and the technical basis for the required TMDL elements and associated implementation plan. This report meets the requirements of the California Environmental Quality Act (CEQA), including the preparation of a checklist (Appendix A) for adopting Basin Plan amendments and serves in its entirety as a substitute CEQA environmental document. It builds on earlier reports on sources and loadings (June, 2000), impairment assessment (June, 2001) and a Project Report (January 2004). It also builds on the Draft Staff Report (June 23, 2007 version) that was circulated for a 60-day public review period and testimony hearing that was held on September 12, 2007, and the Revised Draft Staff Report (December 3,, 2007 version) that was circulated for a 45-day public review. This report was developed with consideration of stakeholder input, including incorporation of comments received on the Project Report and comments received on the Draft Staff Report and Revised Draft Staff Report, and has been updated with new information.

The process for establishing a TMDL includes compiling and considering available data and information, conducting appropriate analyses relevant to defining the impairment problem, identifying sources, and allocating responsibility for actions to resolve the impairment. This report is organized into sections that reflect background information, the key elements of the TMDL process, and regulatory analyses required to adopt the amendment.

In addition, the scientific basis of the Basin Plan amendment was subjected to external scientific peer review. This step is required under §57004 of the Health and Safety Code, which specifies that an external review is required for work products that serve as the basis for a rule,

"…establishing a regulatory level, standard, or other requirements for the protection of public health or the environment." The scientific basis of the PCBs TMDL, as presented in the Staff Report, was evaluated by two peer reviewers, Prof. David O. Carpenter, M.D., and Prof. Kevin J. Farley, who concluded that the scientific basis of the proposed Basin Plan amendment is based on sound scientific knowledge, methods, and practices.

Section 2 presents the problem statement that the project is based on and defines the project, why it is necessary and its objectives. Section 3 presents information about the physical setting of San Francisco Bay, including climate, hydrology, geology and biology. Section 4 discusses the chemistry and historical use of PCBs. Section 5 provides a discussion of the water quality standards that are applicable to San Francisco Bay. Section 6 presents the results of the impairment assessment that identified adverse impacts to beneficial uses in the Bay.

Section 7 presents our understanding of the sources of loading of PCBs to the Bay. Sources and loading are identified as internal or external to the Bay. Internal sources reflect the current reservoir of PCBs found in sediments or the water column. External sources reflect loads coming into the Bay, for example, from urban runoff or wastewater treatment plants.

Section 8 presents the derivation of the numeric target. Section 9 presents the linkage analysis which describes the relationship between PCBs sources and the proposed target, and estimates the bay's capacity to assimilate PCBs while still meeting the numeric fish tissue targets. Section 10 presents the proposed TMDL and the allocations of the TMDL to external sources.

Section 11 presents the Implementation Plan which includes actions and requirements deemed necessary to implement the external source allocations and actions to manage internal sources of PCBs. It specifies monitoring activities to demonstrate attainment of allocations and the numeric target. It also presents an adaptive implementation strategy to review implementation progress and to evaluate any new information generated, which may lead to improved implementation actions, and refinement of the TMDL, the numeric target or the allocations in the future.

Section 12 presents the results of CEQA analyses including an environmental impact assessment and an evaluation of alternatives to the proposed Basin Plan amendment. Section 13, References, lists all the information sources cited and relied upon in preparation of this report.

2. Project Definition

This section presents the problem statement upon which the proposed Basin Plan amendment project is based. It also presents the project definition and objectives which form the basis of the assessment required by the CEQA.

2.1 Problem Statement

All San Francisco Bay segments were initially placed on the California 303(d) list in 1998 for total PCBs and dioxin-like PCBs due to an interim health advisory for fish consumption. The 1998 listing applies to the following Bay segments: Sacramento and San Joaquin Delta, Suisun Bay, Carquinez Strait, San Pablo Bay, Richardson Bay, Central Bay, Lower Bay and South Bay. The 303(d) list was revised in 2002 to include specific locations in the Lower Bay segment. These listing were sustained on the 2006 303(d) list version (Table 1; Figure 1). This TMDL applies to all Bay segments.

As further discussed in the Impairment Assessment in Section 6, water quality objectives that are not attained include the narrative water quality objective which states that controllable water quality factors shall not cause a detrimental increase in toxic substances found in bottom sediments or aquatic life and the numeric water quality criterion of 0.00017 ug/L total PCBs in water. The existing beneficial use that is not fully supported due to elevated PCBs levels in fish is commercial and sport fishing. However, this TMDL is designed to ensure protection of all beneficial uses of the Bay including but not limited to preservation of rare and endangered species, estuarine habitat, and wildlife habitat.

Table 1-San Francisco Bay Water Segments on 2006 303(d) List for PCBs

Water Body Names	Hydrologic Unit	Total Water Body Size (acres)
Sacramento/San Joaquin Delta	207.100	41,736
Suisun Bay	207.100	27,498
Carquinez Strait	207.100	5,657
San Pablo Bay	206.100	68,349
Richardson Bay	203.130	2,439
San Francisco Bay, Central	203.120	70,992
San Francisco Bay, Lower (including)	204.100	79,293
Central Basin, San Francisco	204.400	40
Mission Creek	204.400	8.5
Oakland Inner Harbor (Fruitvale site)	204.200	0.93
Oakland Inner Harbor (Pacific Dry-Dock Yard 1 site)	204.200	1.8
San Francisco Bay, South	205.100	21,669

(2006 CWA Section 303(d) list)

2.2 Project Definition

The project is the adoption of a proposed Basin Plan Amendment to establish a TMDL and a phased implementation plan to attain PCBs water quality standards in all segments of San Francisco Bay. The Water Board is obligated under Section 303(d) of the Clean Water Act to develop a TMDL for San Francisco Bay to address PCBs impairment. The following components form the basis of the proposed regulatory provisions and define the project:

1. Numeric target for PCBs concentrations in fish tissue of 10 ug/kg.
2. Total maximum average yearly PCBs load to San Francisco Bay of 10 kg/year.
3. Allocation of the total maximum average yearly PCBs load among the various external PCBs sources to San Francisco Bay.
4. Plan to implement the TMDL that includes actions to reduce PCBs loads to achieve external load allocations and actions to manage internal sources of PCBs in San Francisco Bay.
5. Monitoring program to evaluate progress in meeting the numeric target and load allocations.
6. Plan and schedule for studies to improve technical understanding relevant to the PCBs TMDL and implementation plan, and for reviewing progress toward meeting targets, implementing actions and evaluating continued appropriateness and effectiveness of actions.



Figure 1-San Francisco Bay Embayments

2.3 Project Objectives

The proposed Basin Plan Amendment is intended to reduce existing and future PCBs discharges to San Francisco Bay associated with controllable water quality factors. Controllable water quality factors are those resulting from human activities that can influence water quality and be reasonably controlled through prevention, mitigation, or restoration. Specific objectives of the project are as follows:

1. Attain numeric PCB water quality criteria and the narrative bioaccumulative water quality objective established for the Bay in as short a time frame as feasible.
2. Protect beneficial uses of San Francisco Bay including but not limited to sport fishing and wildlife habitat.
3. Set target(s) to attain relevant water quality standards in all parts of the Bay.
4. Reduce loading of PCBs to the Bay from external sources and reduce uptake from sediments.
5. Continue to make use of the experience and expertise of the Water Board and its stakeholder community regarding local watersheds and PCBs sources.
6. Initiate actions to reduce PCBs discharges, while continuing to accommodate new information on PCBs fate in the environment.
7. Establish a decision-making framework where management actions evolve to adapt to future knowledge or conditions.
8. Favor actions that have a multi-contaminant benefit and promote efficiencies in water quality regulation and resource management.
9. Avoid actions that will have unreasonable costs relative to their environmental benefits.
10. Comply with the antidegradation requirements of State Board Resolution No. 68-16 and federal antidegradation regulations (40 CRF 131.12).
11. Base decisions on readily available information on ambient conditions, PCBs loads, fish consumption patterns, and PCBs fate and effects.
12. Consider site-specific factors relating to PCBs sources, ambient conditions, watershed characteristics, and response to management actions.
13. Avoid arbitrary decisions and speculation when computing loads, setting targets, setting allocations, determining implementation actions, and defining a margin of safety.
14. When selecting from a range of options, select an environmentally protective option as a means of building an implicit margin of safety into the TMDL.
15. Consider natural, seasonal, and inter-annual variability in determining the manner of implementing the load allocations.
16. Avoid imposing regulatory requirements more stringent than necessary to meet the targets designed to attain water quality standards.
17. Provide details of an implementation plan that includes: a description of the nature of actions necessary to meet allocations and targets and thereby achieve water quality standards; a schedule for actions to be taken; and a description of monitoring to be undertaken to determine progress toward meeting allocations, targets and water quality objectives.

18. Provide interim risk management programs to protect recreational sport fishing anglers.
19. Comply with the Clean Water Act requirement to adopt a TMDL for a 303 (d) listed impaired water body.

3. Setting

San Francisco Bay is located on the Central Coast of California and marks a natural topographic separation between the northern and southern coastal mountain ranges. The Bay functions as the only drainage outlet for waters of the Central Valley.

Because of its highly dynamic and complex environmental conditions, the Bay system supports an extraordinarily diverse and productive ecosystem. The basin's deepwater channels, tidelands, and marshlands provide a wide variety of habitats that have become increasingly vital to the survival of several plant and animal species. The basin sustains communities of crabs, clams, fish, birds and other aquatic life and serves as an important wintering site for migrating waterfowl.

3.1 Physical Setting

San Francisco Bay is a large coastal embayment receiving fresh water from Central Valley rivers via the Delta and from local small tributaries (Figure 2). The Bay is relatively shallow with an average depth of around 6 meters and a median depth of about 2 meters at mean lower low water (Conomos, 1979). Narrow channels 10 to 20 meters deep incise broad expanses of the Bay floor. Deeper sections of channels such as the Golden Gate (110 meters) and Carquinez Strait (27 meters) are topographic constrictions where depths are maintained by scouring from tidal currents. Due to the extent of shallow areas, seasonal winds cause significant sediment resuspension and movement in the Bay.

The Bay is subdivided in segments: Sacramento and San Joaquin Delta, Suisun Bay, Carquinez Strait, San Pablo Bay, Richardson Bay, Central Bay, Lower Bay and South Bay. The northern reach of the San Francisco Bay (Suisun Bay, Carquinez Strait, and San Pablo Bay) is partially to well-mixed while the South Bay (Lower and South Bay) is a tidally oscillating lagoon. The Central Bay is most influenced by water exchange with the ocean.

3.2 Climate

The climate of San Francisco Bay plays an important role in determining the environmental conditions found in the Bay. The Bay has a Xeric (Mediterranean) moisture regime characterized by cool, dry summers and mild, wet winters. The amount and timing of precipitation, air temperature, and wind patterns influence the Bay's freshwater inflow, salinity, currents, and suspended sediment concentrations.

The sun affects the Bay by promoting photosynthesis and warming the shallow areas, which in turn influences carbon dynamics in the water column and sediments. Carbon dynamics and the formation of humic substances (natural organic matter) influence the partitioning of PCBs in aquatic environments between sediments, water, and biota.

The Bay is subjected to strong southwest summer winds. These strong winds exert stress on the water surface, which generates waves. Wind-generated waves resuspend sediments creating turbid conditions and dispersing sediments throughout the Bay, thereby affecting movement of PCBs in the Bay. Waves also tend to mix and aerate the water, which also influences carbon fluxes in the Bay.

PCBs mainly partition into the organic carbon phase such as the organic matter in sediments, or into the lipid fraction of biota. A better understanding of sediment movement and organic carbon fluxes is essential to understanding distribution and long-term fate of PCBs in the Bay. Our

ability to predict the fate of PCBs on a fine scale will require improved understanding of sediment movement and carbon flux throughout the Bay.

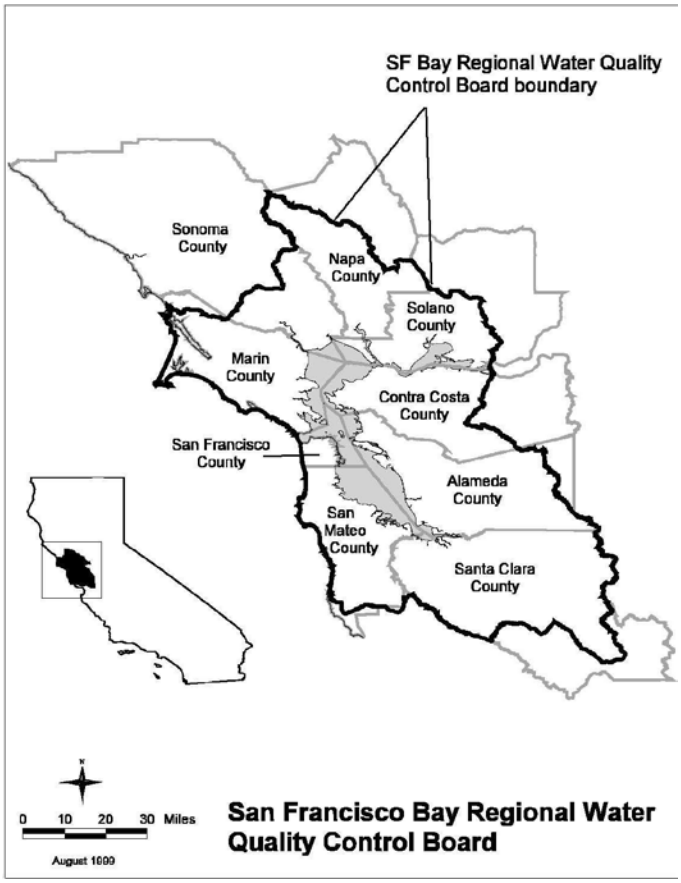


Figure 2-San Francisco Bay Region

3.3 Hydrology

Freshwater inflows, tidal mixing, and their interactions largely determine variations in the hydrology of the Bay. Hydrology has profound effects on biota that live in the Bay because it determines the salinity in different portions of the Bay.

The Bay receives 90 percent of its fresh water inflows from streams and rivers draining the Central Valley watershed and about 10 percent from local tributaries surrounding the Bay (SFEP, 1992a). The Sacramento and San Joaquin Rivers carry about 60 percent of the state runoff draining around 152,500 square kilometers (km^2) or 40 percent of California's surface area (Conomos et al., 1985). Of the fresh water flows entering the Bay from the Central Valley watershed, the Sacramento River typically accounts for 80 percent, the San Joaquin River 15 percent, and smaller rivers and streams the remainder.

The northern reach of the Bay (comprised of Suisun Bay, Carquinez Strait, and San Pablo Bay) is geographically and hydrologically distinct from the Central and South Bays. The northern reach is a partially to well-mixed waterbody (depending on the season) that is dominated by seasonally varying delta inflow. The South Bay is a tidally oscillating, lagoon-type Bay, where

variations are determined by water exchange with the northern reach and the ocean. Water residence times are much longer in the South Bay than in the North Bay.

Response time of the Bay to PCBs source control will depend on the sediment hydrodynamics of the Bay, such as its rate of flushing, sediment dynamics, and the variability in inflow. The effect of these parameters over a long time scale needs to be accounted for in determining the long-term fate of PCBs in the Bay.

3.4 Geology

San Francisco Bay is located within the Coast Ranges of California. The Coast Ranges are characterized by northwest trending longitudinal mountain ranges and valleys formed by faulting and folding (Howard, 1979).

In aquatic environments, PCBs are mainly associated with sediments. Therefore, understanding past, current, and future sedimentation and sediment movement is essential for predicting the fate and transport of PCBs in the Bay.

Delta inflow from the Central Valley watershed is the major source of new sediment input into the Bay. Most new sediment (approximately 80 percent) originates in the Sacramento-San Joaquin River drainage and enters primarily as suspended load during the high winter inflows. Much of the winter sediment load from the Sacramento and San Joaquin rivers initially settles out in San Pablo Bay. During the low flow summer months, wind-generated waves and tidal currents resuspend the previously deposited sediment and redistribute it over a wider area.

The Bay's sediment mass balance was greatly altered by the advent of hydraulic mining in the Sierras in the late 1800's. The resulting large increase in sediment loads to the Bay due to hydraulic gold mining affected both the mudflat and sub-tidal areas (SFEP, 1992a). Deposition of fine sediments originally raised mud elevations several meters in Suisun Bay, and the elevation of mud migrated as a "mud wave" to San Pablo Bay and the Central Bay over the past century. During the time of highest PCBs production and use, the continual deposition of sediment buried PCBs being released into the Bay from land and maritime-based activities. Therefore, a large reservoir of PCBs was created in the Bay sediments.

Recent studies indicate that, in portions of the Bay, sediments are eroding (Jaffe et al., 1998). Sediments deposited during the period of Bay Area industrialization are now being uncovered due to a decrease of sediments entering the Bay from the Sacramento and San Joaquin rivers. This erosion could uncover contaminated sediments, resulting in increased availability of PCBs to the food web. Even if all current PCBs sources to the Bay are eliminated, exposure of historically contaminated sediment may turn out to be a significant PCBs source to organisms.

Sediment dynamics influence the distribution, transport and fate of PCBs in the Bay. Bathymetry is a factor affecting sediment dynamics. Broad shallows incised by narrow channels characterize San Pablo Bay, Suisun Bay, and the South Bay. These shallower areas are more prone to wind-generated currents and sediment resuspension and deposition than deeper areas, such as the Central Bay. Near-shore shallow areas are likely repositories of larger reservoirs of PCBs, due to their proximity to historical land-based industrial activities.

Currents created by tides, freshwater inflows, and winds cause erosion and transport of sediments in the Bay. Tidal currents are usually the dominant observed currents in the Bay.

Generally, tides appear to have a significant influence on sediment resuspension during the more energetic spring tide when water column sediment concentrations naturally increase.

Strong seasonal winds create circulation and mixing patterns and add to tide- and river-induced current forces. It has been estimated that about 160 million cubic yards (mcy) of sediments are resuspended annually from shallow areas of the Bay by wind-generated waves (USACE, 1998), while 8 to 10 mcy enter the Bay from the Central Valley watershed and 4 to 8 mcy leave the Bay through the Golden Gate (Table 2). These estimates of sediment inputs have been updated (Schoellhamer et al., 2005), but these relative estimates are used to illustrate the substantial degree of sediment resuspension compared to gains and losses. These are the only estimates of sediment resuspension volumes. By comparison, between 2001 and 2005, an average of 1.8 mcy of dredged sediments was disposed in the Bay as a result of maintenance dredging activities between 2001 and 2005 (DMMO, 2006). The current estimate of the sediment budgets indicates a net loss of 2.4 mcy of sediments from the Bay (Schoellhamer et al., 2005).

Table 2-Sediment Movement in San Francisco Bay

Pathway	Sediment Volume (10^6 cu yd)
Inflow from Central Valley	6.9-8.1
Inflow from other tributaries	1.1-2.4
Outflow through the Golden Gate	4.2-8.1
Resuspension	160

(USACE, 1998)

Our understanding of sediment dynamics is based on general Bay-wide models. These models are based on Bay-wide averages and do not consider site-specific PCB-Contaminated sites in the near-shore environment.

3.5 Biology

Many species of birds, fish, and mammals regularly reside in the Bay, including a number of endangered, threatened, and rare wildlife species. The Bay supports a diversity of habitat types resulting in a diversity of wildlife species. High food productivity in different habitats types allow some species to achieve substantial numbers. Tidal salt marshes and open waters sustain aquatic plants and phytoplankton that feeds the Bay food web.

Open Waters

Open waters include various habitat types, such as subtidal waters and sloughs. Open waters support benthic and pelagic invertebrates, fish, waterbirds, and seals. Invertebrates serve as prey for large fish populations representing several different trophic levels, including Pacific herring, northern anchovy, Pacific sardine, staghorn sculpin, several species of perch, English sole, and California halibut. Many of these fish species in turn serve as prey to piscivorous birds such as the Forster's tern, California least tern, American white pelican, brown pelican, and double-crested cormorant. Waterfowl such as greater scaup, lesser scaup, canvasbacks, and surf scoters dive for bivalves, crustaceans, and other invertebrates in shallower open waters. Bird diversity in the open Bay waters is fairly low, as the species of birds that can exploit the subtidal areas are limited to those that can forage from the air (*e.g.*, terns) or under water (*e.g.,* scoters) and those that can swim.

Sloughs and channels provide important habitat for large numbers of benthic and pelagic invertebrates and fish. These organic-rich channels serve as important nurseries and feeding areas for estuarine fish. Diving ducks generally avoid the smaller tidal channels but are found in abundance, particularly during their non-breeding season, near the mouths of the larger sloughs, and in open waters. Terns often forage in the larger channels, and several species of herons and egrets forage in the shallower channels for fish. Many shorebirds feed along the exposed flats along tidal channels at low tide, as do rails and other tidal marsh birds.

The Bay's open water provides shallow and deep-water habitat throughout San Francisco Bay. Sediments in these areas range from clays to sand. The dominant plants are phytoplankton, green algae and blue green algae (SFEP, 1992b). Extensive phytoplankton growth in the water column occurs in Suisun, San Pablo and South Bays. Open waters also provide habitat for benthic (bottom dwelling) organisms, fish, and birds. Other important habitats include mudflats, tidal and brackish marsh, and wetlands. Large numbers of benthic organisms, such as clams, worms, mussels, shrimps, and crabs, reside in these habitats. Bay-dwelling fish, such as shiner surfperch, white croaker, and jacksmelt, are known to feed on these benthic organisms (Goals Project, 2000).

The makeup of benthic communities varies highly both spatially and over time (SFEP, 1992b; Thompson et al., 2000). A better understanding of the factors controlling benthic community composition and dynamics would further our understanding of the food web in general, and the uptake and transfer of PCBs in the food web. Benthic organisms are a large part of the diet for the Bay fish species with the highest PCBs concentration (Roberts et al., 2002). Modeling of PCBs in the food web of in the Bay has been performed providing a linkage between PCBs concentrations in sediment, water and biota (Gobas and Wilcockson, 2003; Gobas and Arnot, 2005).

Mudflats

Intertidal mudflats are expanses of minimally vegetated to unvegetated mud in the lower marsh zone. Most of this habitat occurs just beyond the edge of fully vegetated wetlands, and between channels and edges of wetlands within sloughs. Shallow waters generally cover mudflats during high tide, but they are uncovered at low tide. Narrow mudflats occur along the edges of the tidal sloughs and channels, while larger mudflats occur at the mouths of sloughs and along the edge of the Bay.

Mudflats support a large community of diatoms, worms, shellfish, and algae. Organic debris from tidal marshes, phytoplankton, algae, and diatoms are responsible for the large numbers of benthic invertebrates on mudflats. Crustaceans, polychaete worms, gastropod and bivalve mollusks, and other invertebrates live on or just below the surface of the mud. During high tides, mudflats provide foraging habitat for many species of fishes and wading birds. During low tides, large numbers of shorebirds feed in the mudflats. These mudflats are a key reason for the importance of the San Francisco Bay Area to West Coast shorebird populations.

Smaller channels in brackish and salt marshes are the favored feeding areas for the state and federally endangered California clapper rail. Shorebirds, gulls, terns, American white pelicans, and ducks often use exposed mudflats as roosting or loafing areas when available, as do Pacific harbor seals. When the tides rise, most of these birds return to roosting areas in salt ponds or other alternate habitats; the seals move to open waters.

The state and federally endangered salt marsh harvest mouse, the salt marsh wandering shrew, and the California vole reside where pickleweed is present. California clapper rails nest in cordgrass, denser stands of pickleweed, and marsh gumplant, in both salt and brackish tidal marshes.

Tidal marshes are important to the aquatic components of the Bay' overall ecosystem, not just to the species that reside and/or feed there. Organic debris from tidal marshes forms much of the foundation of the Bay food web.

Brackish Marsh
Brackish marshes occur in the low-to-mid intertidal reaches of sloughs and creeks draining into the Bay. Their vegetation is subject to tidal inundation diluted by freshwater flows.

The vegetation in brackish marsh habitat is dominated by plant species adapted to intermediate (brackish) salinities, including short bulrushes such as alkali bulrush and saltmarsh bulrush. Other plants found in brackish marshes include alkali heath, cattails, spearscale, and pickleweed. Large patches of the invasive pepperweed also occur within the terraced areas in these middle reaches.

Brackish marshes support many of the wildlife species that use salt marsh and freshwater marsh habitats. Brackish marshes are particularly important for anadromous fish (migrating from saline to fresh water to spawn) and catadromous fish (migrating from fresh to saline water to spawn) and invertebrates such as shrimp.

Most terrestrial and wetland wildlife species are tolerant of a range of salinities, and are affected more by habitat structure and food availability than by salinity. Brackish marshes support most of the bird species occurring in both salt and freshwater marshes. California clapper rails occur in brackish marshes, and likely breed in these marshes. The often taller, denser vegetation in brackish marshes supports large densities of breeding song sparrows, saltmarsh common yellowthroats, and marsh wrens, and large numbers of Virginia rails and soras during migration and winter.

4. Polychlorinated Biphenyls

PCBs are a class of organic compounds produced as complex mixtures for a variety of uses, including dielectric fluids in capacitors and transformers. PCBs were manufactured commercially by the Swann Chemical Company beginning in 1929. Monsanto acquired the process in 1935 and continued PCBs production until 1977 (Erickson, 1997).

In the United States, discovery of PCBs as ubiquitous environmental contaminants led to their initial regulation under the Toxic Substances Control Act (TSCA) in 1976. In 1978, Congress banned the manufacture, processing, and distribution in commerce of PCBs. Use of PCBs was restricted to totally enclosed applications, and non-totally enclosed applications were only allowed with the United States Environmental Protection Agency (USEPA) exemptions. In 1979, USEPA passed regulations that defined totally enclosed applications as intact, non-leaking electrical equipment. USEPA banned the manufacture and distribution in commerce of materials containing any detectable PCBs in 1984 (Erickson, 1997).

Although PCBs uses have been phased out since the ban, large quantities have remained in use, and some PCBs are still in use today (Table 3). Therefore, the potential for continued PCBs release to the environment remains. It is not known how much unreported PCBs are still being used today nor how much were used in the past in a manner such that they could be currently released to the environment.

Table 3-Self Reporting of PCBs Uses in the Bay Area (1999)

Company	City	Number of Transformers	PCBs Mass (kg)
USS-POSCO Industries	Pittsburg	65	141,494
Quebecor Printing San Jose, Inc.	San Jose	5	32,094
NASA	Moffett Field	17	7,052
Gaylord Container Corp	Antioch	2	6,078
General Chemical	Pittsburg	3	4,800
Rhodia Inc.	Martinez	4	3,356
DOT Maritime Administration Suisun Bay Reserve Fleet	Benicia	3	1,048
Macaulay Foundry, Inc.	Berkeley	1	913
Stanford Linear Accelerator Center	Menlo Park	1	1

http://www.epa.gov/opptintr/pcb/xform.htm

4.1 Chemical Structure

PCBs are a family of chlorinated organic compounds formed by two benzene rings linked by a single carbon-carbon bond (Figure 3). Various degrees of substitution of chlorine atoms for hydrogen are possible on the remaining 10 benzene carbons. There are 209 possible arrangements of chlorine atoms on the biphenyl group. Each individual arrangement or compound is called a congener. Groups of congeners with the same number of chlorine atoms are called homologs. Thirteen of the 209 congeners are known to show toxic responses similar to those caused by 2,3,7,8 tetrachlorodibenzo-p-dioxin (TCDD), the most toxic dioxin compound (Van den Berg et al, 1998).

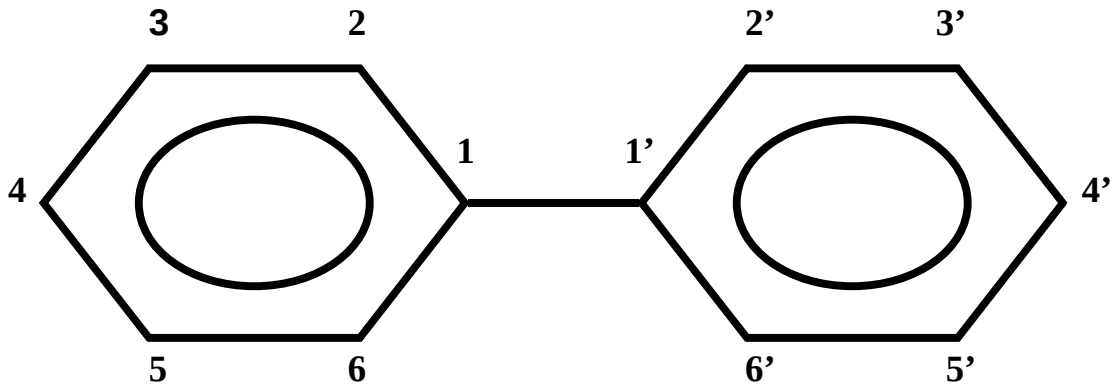


Figure 3-Structure of PCB Molecule

PCBs were mainly marketed as Aroclors in the United States. Aroclors are mixtures of congeners with varying numbers of chlorine atoms (Table 4). Aroclors were the most abundant PCBs mixtures manufactured and used in the United States. The numbering scheme for Aroclors is based on their structure and mixture: the first two digits represent the number of carbon atoms (12) while the second two numbers denote the percent chlorine by weight. Aroclor 1016 is an exception and has a chlorine weight content of 40 to 42 percent (ATSDR, 2000).

Table 4-Percentage of PCB Homolog in Aroclors

Homolog	Aroclor						
	1016	**1221**	**1232**	**1242**	**1248**	**1254**	**1260**
Biphenyl		10					
Mono-CBs	2	50	26	1	--	--	--
Di-CBs	19	35	29	13	1	--	--
Tri-CBs	57	4	24	45	21	1	--
Tetra-CBs	22	1	15	31	49	15	--
Penta-CBs	--	--	--	10	27	53	12
Hexa-CBs	--	--	--	--	2	26	42
Hepta-CBs	--	--	--	--	--	4	38
Octa-CBs	--	--	--	--	--	--	7
Nona-CBs	--	--	--	--	--	--	1
Deca-CBs	--	--	--	--	--	--	--

(ATSDR, 2000)

Although the congener compositions of manufactured Aroclors are known, the fate of the various congeners in the environment is not as well understood. Fate and stability of congeners vary with the degree and location of chlorination, making source identification of environmental PCBs difficult.

4.2 Chemical and Physical Properties

PCB congeners vary markedly in their chemical and physical properties depending on the degree and position of chlorination. Important properties such as non-flammability, low electrical conductivity, high thermal stability, and high boiling point, make PCBs highly stable and persistent in the environment. PCBs are also soluble in non-polar organic solvents and biological lipids, hence their tendency to bioaccumulate in living organisms.

PCBs are generally resistant to degradation, and are strongly resistant to acids and alkalis. PCBs have a low solubility, low volatility (small Henry's Law constant), and increasing affinity for organic matter (increasing log K_{ow}) with increasing chlorination (Table 5). Note that organic compounds with a log K_{ow} greater than 3.5 are considered to have a large potential to bioaccumulate (USEPA, 1985). Biodegradation rates of PCBs also vary greatly depending on the degree and location of chlorination, and redox conditions (ATSDR, 2000).

PCB congeners exhibit of range of properties, which affect their fate and residence time in the environment. Solubility of PCBs in water generally decreases with increased chlorination (Table 5). PCBs adsorption to sediment, denoted by increasing K_{ow}, generally increases with increasing degree of chlorination (Table 6) or increasing sediment organic carbon concentration (ATDSR, 2000). PCBs in aquatic systems are therefore usually found in much greater mass in the sediments than in the water column. Increasing log K_{ow} is accompanied by an increase in the tendency to bioaccumulate in aquatic organisms. Bioconcentration factor (BCF) increases a thousand-fold when going from monochlorobiphenyl to decachlorobiphenyl. Evaporation rates decrease with increasing degree of chlorination (Table 6). In general, the lower chlorinated PCB congeners are removed faster from the aquatic environment than the more chlorinated PCBs as

the lower chlorinated congeners are not sorbed as strongly to sediments and are more readily volatilized.

Table 5-Selected Properties of PCBs as Aroclors

Aroclor	Density (g/cm^3)	Solubility (mg/L)	Log K_{ow}	Henry's Law Constant ($atm\text{-}m^3/mole$)
1016	1.37	0.42	5.6	2.9×10^{-4}
1221	1.18	0.59	4.7	3.5×10^{-3}
1232	1.26	0.45	5.1	No Data
1242	1.38	0.34	5.6	5.2×10^{-4}
1248	1.44	0.06	6.2	2.8×10^{-3}
1254	1.54	0.06	6.5	2.0×10^{-3}
1260	1.62	0.08	6.8	4.6×10^{-3}
1262	1.64	0.05	No Data	No Data
1268	1.81	0.3	No Data	No Data

Kow = Octanol-water partitioning coefficient (increasing number indicates decreasing water solubility)
(ATSDR, 2000)

Table 6-Selected Properties of PCBs as Homologs

Isomer Group	Melting Point (°C)	Vapor Pressure (Pa)	Water Solubility at 25°C (g/m^3)	log K_{ow}	Approximate BCF in Fish	Approximate Evaporation Rate at 25°C (g/m^2hour)
Biphenyl	71	4.9	9.3	4.3	1000	0.92
MonoCB	25-78	1.1	4	4.7	2500	0.25
DiCB	24-149	0.24	1.6	5.1	6300	0.065
TriCB	28-87	0.054	0.65	5.5	1.6×10^4	0.017
TetraCB	47-180	0.012	0.26	5.9	4.0×10^4	4.2×10^{-3}
PentaCB	76-124	2.6×10^{-3}	0.099	6.3	1.0×10^5	1.0×10^{-3}
HexaCB	77-150	5.8×10^{-4}	0.038	6.7	2.5×10^5	2.5×10^{-4}
HeptaCB	122-149	1.3×10^{-4}	0.014	7.1	6.3×10^5	6.2×10^{-5}
OctaCB	159-162	2.8×10^{-5}	5.5×10^{-3}	7.5	1.6×10^6	1.5×10^{-5}
NonaCB	183-206	6.3×10^{-6}	2.0×10^{-3}	7.9	4.0×10^5	3.5×10^{-6}
DecaCB	306	1.4×10^{-6}	7.6×10^{-4}	8.3	1.0×10^7	8.5×10^{-7}

(Erickson, 1997)

The biggest reservoir of PCBs in aquatic systems is sediments rather than the water column. As the tendency of PCBs to adsorb to sediments increases with increasing log K_{ow}, their persistence in surface waters increases. This property enhances the importance of bottom-dwelling organisms in the food-web transfer of PCBs. This is also the case for decreasing water solubility and decreasing volatility (decreasing vapor pressure). Many physical and chemical factors affect this persistence and transfer, ultimately limiting our ability to predict the fate and transport of PCBs in aquatic environments.

4.3 Production and Uses

PCBs were produced in very large quantities both within and outside the United States. Although their uses in capacitors and transformers are well known, PCBs were used in a wide variety of applications including some involving direct contact with the environment.

Production

In the United States, commercial PCBs production started in 1929 and continued until 1977 (ATSDR, 2000). The estimated total commercial production of PCBs in the United States ranged from 610 million to 635 million kilograms (kg). Most of domestic uses of PCBs were Aroclors produced in the U.S. with only 1.4 million kg of PCBs imported. U.S. production peaked in 1970 at 39 million kg.

PCBs mixtures were manufactured in other countries under many different trade names; these include Clophen (Germany), Fenclor (Italy), Kaneclor (Japan), Sovol (former USSR) and Phenoclor (France). Fenchlor DK is a product of interest as it is comprised solely of decachlorinated biphenyl (Congener #209) and was used in investment casting (Erickson, 1997).

The Monsanto Chemical Company produced approximately 99 percent of PCBs used by U.S. industry. Prior to ceasing production, up to 200,000 kgs of PCBs products per year were imported into the U.S. (ATSDR, 2000). Importation of PCBs continued after U.S. production was banned until January 1, 1979. However, USEPA permitted 16 companies that filed exemption petitions to continue to import and use PCBs after the ban on importation.

Between 1957 and 1977, 52 percent of the Aroclors produced consisted of Aroclor 1242 and 13 percent were its replacement, Aroclor 1016 (Table 7). Aroclor 1016 production was started in 1970, as it was believed to be less harmful to the environment than Aroclor 1242 (Erickson, 1997). Although frequently reported in environmental samples, the more chlorinated Aroclors 1248, 1254 and 1260 comprised only 7, 16 and 11 percent of the PCBs mixtures produced. This high frequency of detection of more chlorinated PCBs may be due to the preferential loss of lower chlorinated PCB congeners from the environment.

Table 7-Relative Production of Aroclors in the United States (1957-1977)

PCBs Mixture	Percent of Production
Aroclor 1016	13
Aroclor 1221	1
Aroclor 1232	<1
Aroclor 1242	52
Aroclor 1248	7
Aroclor 1254	16
Aroclor 1260	11
Aroclor 1262	1
Aroclor 1268	<1

(USEPA, 1996)

Use

PCBs mixtures were most commonly used as dielectric fluid in electrical equipment such as transformers and capacitors (EIP, 1997). PCBs uses can be divided into three different categories: completely closed systems (electrical equipment such as capacitors and transformers), nominally closed systems (e.g., vacuum pumps and hydraulic transfer systems), and open-ended applications (e.g., paints, adhesives, pesticide extenders, inks, and plasticizers). In addition, PCBs had a vast number of other uses, through their inclusion as components in products such as building materials (paints, caulks and sealants), greases, oils, carbonless copy paper, and as ballast in fluorescent lights (Table 8). For example, PCB-containing paints and building sealants were used extensively at Department of Defense (DOD) and Department of Energy (DOE) facilities (U.S. Navy, 2006a; Poland et al., 2001). PCBs have also been detected in up to half the paints and sealants of buildings constructed between 1950 and 1980 in Switzerland (Kohler et al., 2005), Sweden (Astebro et al., 2000), and Australia (CFEMU no date). Based on the results of these studies, PCBs removal programs from building materials have been implemented in these countries. PCBs have been used and are still in use in non-liquid forms in building materials (USEPA, 1999a), including as aquatic paints in fish hatcheries (WDEC, 2006; Cornwall, 2005). However, the extent of PCB-containing materials use in Bay area buildings, as well as the potential of these materials to be released and transported to the Bay, has not been determined.

Prior to 1974, PCBs were used in both closed and open-ended applications. After 1974, open-ended uses of PCBs mixtures were discontinued. One exception was the use of PCBs 209 (decachlorobiphenyl) as filler for investment casting waxes. About 200 tons of PCBs were imported from France and Italy for this use in 1974. The production of PCBs-containing capacitors and transformers ended in January 1979. The life expectancy of transformers and capacitors is decades. In-place capacitors and transformers may still remain significant potential sources of PCBs to the environment. USEPA maintains a database of current volumes of PCBs used in the United States. The database only contains uses that have been reported voluntarily. A query of this USEPA database showed significant ongoing use, almost 200,000 kg, in the San Francisco Bay Area (Table 3).

PCBs industrial use and manufacture has created on-land and in-Bay contaminated area in the San Francisco region. Remediation and control of PCBs releases from these sites may be necessary to restore the Bay's beneficial uses. In addition, the role of widespread open-ended PCBs uses needs to be addressed to ensure that the implementation actions are successful.

Table 8-Selected List of PCBs Uses

Category	Use
Electrical Uses	Transformers and Capacitors Voltage Regulator (power lines) Starting Aid (single phase motors) Power Factor Correction (rectifier, AC induction motor, furnaces) Consumer Electrical Items (refrigerators, televisions, washing machines) Water Well Pumps Lamp Ballast (fluorescent, high intensity discharge) Switch Gear Manufacturing Machinery (capacitors, transformers, associated

Category	Use
	switchgear)
	PCB Contaminated Mineral Oils (transformer changeout)
Non-Electrical Uses	Printing Inks and Pastes
	Carbonless Copy Paper
	Pumps
	Hydraulic Fluids
	Heat Transfer Fluids
	Flame Retardant
	Air Compressor Lubricants
	Plasticizer in paints, resins, synthetic rubber, surface coatings, wax, sealants, waterproofing compound, glues and adhesives
	Pesticides (as extenders)
	Cutting Oil (microscope slide oil)
PCB Contaminated Solids	Wiping Rags
	Safety Equipment
	Machinery
	Soil, Gravel, Asphalt, Sediment

(EIP, 1997)

Disposal

USEPA first promulgated rules in 1978 specifying that liquids containing >0.05 percent (500 mg/kg) PCBs could only be disposed of by incineration in specially permitted facilities, and all non-liquid PCBs mixtures >0.05 percent could only be disposed in specially permitted landfills. In 1979, the regulated PCBs content was lowered to 0.005 percent, or 50 mg/kg. Regulations did not apply to disposal of PCBs dielectric fluid in small capacitors (<3 lbs.) commonly found in fluorescent light ballasts due to the impracticality of regulating the one billion ballasts installed in fluorescent light fixtures throughout the U.S. Disposal and management of PCBs is further regulated under the Resource Conservation and Recovery Act (RCRA). The Clean Water Act (CWA) regulates the discharge of PCBs-laden wastewater into U.S. waters.

4.4 Quantitation

Historically, PCBs have been quantified as Aroclor mixtures by comparing environmental samples to pure unweathered Aroclor standards. This method's ability to correctly quantify PCBs has been questioned (USEPA, 1996), due to the changes (weathering) Aroclor mixtures undergo in the environment. Analytical methods are now being used to quantify individual PCB congeners (Erickson, 1997). These new methods for quantifying PCB congeners in soils and tissue matrices are performed on a relatively routine basis. Low-level analysis of PCB congeners in water at detection limits that allow comparison to USEPA criterion are still non-routine, can have poor precision, and are relatively expensive.

USEPA established the PCBs water quality criterion for the protection of aquatic life based on the sum of Aroclors, and for the protection of human health based on total PCBs, e.g., the sum of all congeners, or isomers or homologs or Aroclor analyses (USEPA, 2000b). In order to utilize all readily available data, in this report we define total PCBs as any of the following:

- Sum of Aroclors;
- Sum of the individual congeners routinely quantified by the Regional Monitoring Program (RMP) or a similar congener sum; or

- Sum of the National Oceanic and Atmospheric Administration (NOAA) 18 congeners converted to total Aroclors (NOAA, 1993). A comparison of the sum of 18 NOAA congeners converted to Aroclor with quantified sums of Aroclors shows relatively good correlation (Figure 4) in one study.

This is a broad designation of total PCBs that can introduce data comparability issues. However, for the purpose of estimating PCBs loads, sources and reservoirs, the introduced error will likely be small compared to the range of PCBs concentrations found in the Bay. PCBs concentrations in Bay sediments commonly vary by three to four orders of magnitude: Bay ambient sediments have about 4.6 micrograms per kilogram (µg/kg) PCBs, while areas considered contaminated can have PCBs concentrations ranging from 1,000-10,000 µg/kg and up. In addition, PCBs concentrations in sources, reservoirs and biota vary by several orders of magnitude in the Bay. Therefore, the use of data, obtained by different methodologies, is justifiable for the purpose of this report. Where possible, water PCBs concentrations were quantified using similar analytical methods, permitting better data comparability.

All data collected for the development of this TMDL are congener based. We recommend that ongoing PCBs data collection activities in the Bay analyze for a suite of congeners. Specifically, Regional Board staff promotes the analysis of a congener list comparable to that quantified by the RMP to facilitate data comparability for long-term trend analysis. Typically, PCBs are measured as Aroclors using USEPA method 8082 or USEPA method 608 for wastewater. These are routine, relatively inexpensive, methods employed by most laboratories. However, the reporting limits for sediments (about 20 µg/kg) and water (about 0.5 µg/L) with these methods are significantly greater than current ambient concentrations in the Bay and discharged wastewater. In the last few years, more laboratories have started using USEPA method 1668 for the analysis of PCBs in sediment and water. Using this method, reporting limits achieved for sediment (50 ng/kg) and water (100 pg/L) have environmentally significance. Therefore we use method 1668 for the monitoring of ambient conditions in San Francisco Bay.

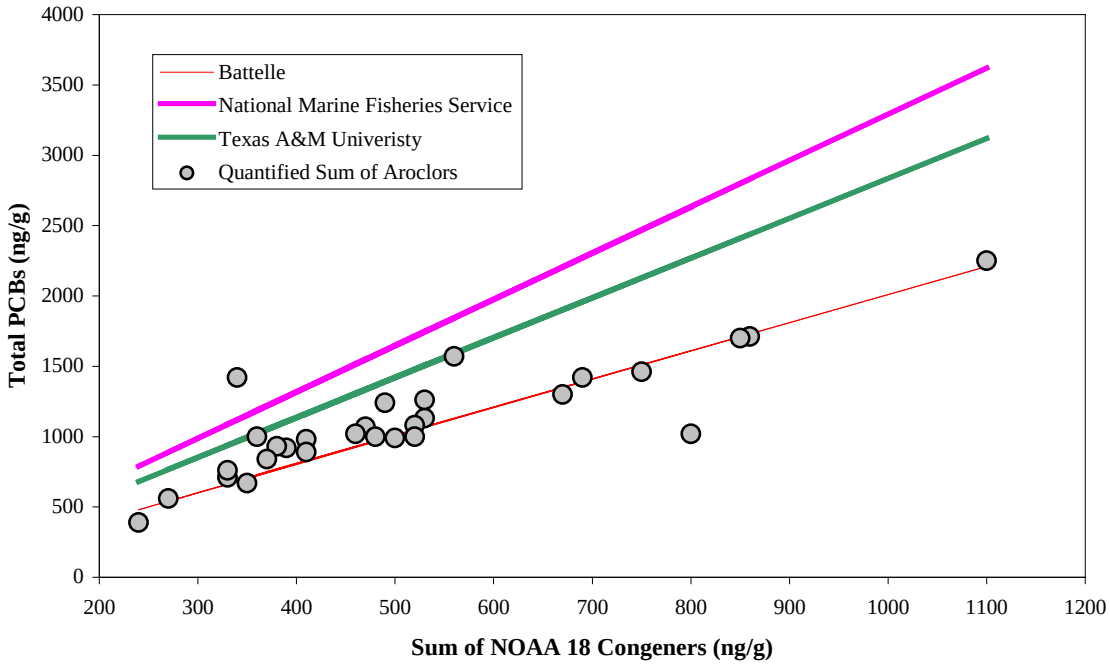


Figure 4-Correlation of PCBs Quantified as Aroclors and Aroclors Calculated from Congener Data (data from SFPUC, 2002).
Regression Line Represents each Organizations Respective Methodology for Quantifying Total Aroclors from Congener Data.

5. Applicable Water Quality Standards

Section 303(d) of the Clean Water Act requires the State of California to identify waters not meeting water quality standards. Water quality standards consist of three parts: beneficial uses, water quality objectives, and antidegradation.

> **Designated or Beneficial Use** - A specific desired use appropriate to the waterbody, termed a *designated use* (beneficial use in California). A beneficial use describes the goal of the water quality standard. It is stated in a written, qualitative form, but the description is as specific as possible.
>
> **Water Quality Criterion or Objective** - A *criterion* that can be measured to establish whether the designated use is being achieved (objective in California). A water quality criterion or objective represents the condition of the waterbody that supports a designated use. The designated or beneficial use is a description of a desired endpoint for the waterbody, and the criterion or objective is a measurable or narrative indicator that is a surrogate for determining attainment of the beneficial use.
>
> **Antidegradation Policy** - An antidegradation policy (under both Federal and California regulations) ensuring that water quality will be maintained at a level protecting beneficial uses.

The beneficial use impaired by PCBs in the Bay is described as follows:

> **Ocean, commercial, and sport fishing (COMM)**
> *Uses of water for commercial or recreational collection of fish, shellfish, or other organisms in oceans, bays, and estuaries, including, but not limited to, uses involving organisms intended for human consumption or bait purposes.*

The applicable water quality objectives include the narrative objective for bioaccumulative substances in San Francisco Bay. This narrative objective states: “Many pollutants can accumulate on particles, in sediment, or bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.” This narrative water quality objective is applicable to both total PCBs and dioxin-like PCBs.

Two applicable numeric water quality standards for total PCBs are promulgated at 40 Code of Federal Regulation Section 131.38, also known as the California Toxics Rule (CTR). These standards include the saltwater criterion continuous concentration (CCC) of 30 nanograms per liter (ng/L) for the protection of aquatic life and its uses from chronic toxicity, and the human health criterion of 170 picograms per liter (pg/L) for the protection from consumption of aquatic organisms. These criteria apply to total PCBs, defined as the sum of all Aroclors, or all congeners or homologs or isomers, and were derived to protect against adverse effects due to PCBs in water. PCBs concentration in the Bay waters are generally below the CCC water quality standard, indicating that current conditions are protective of aquatic life from chronic toxicity. We therefore propose to use the more protective human health criterion as the applicable water quality standard for the PCBs TMDL. This criterion was derived to protect the general population from an increased risk of no more than one in a million. This criterion was

developed using a bioconcentration factor (BCF) approach with an upper bound potency factor reflective of high risk and persistence. However, in the development of this criterion it is explicitly recognized that it is not as protective of sub-populations that consume greater quantities of fish than the general population, and that subsistence fish consumers may only be protected from an increased risk of one in ten thousand. The CTR does not promulgate a separate numeric water quality criterion for dioxin-like PCBs.

Both the narrative and numeric water quality objectives are intended to protect beneficial uses related to human health (COMM). The narrative water quality objective is also intended to protect wildlife beneficial uses of the Bay, including:

Estuarine habitat (EST)
Uses of water that support estuarine ecosystems, including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds), and the propagation, sustenance, and migration of estuarine organisms.

Preservation of rare and endangered species (RARE)
Uses of waters that support habitats necessary for the survival and successful maintenance of plant and animal species established under state and federal law as rare, threatened or endangered.

Wildlife habitat (WILD)
Uses of water that support wildlife habitats, including, but not limited to, the preservation and enhancement of vegetation and prey species used by wildlife, such as waterfowl.

6. Impairment Assessment

All segments of San Francisco Bay were placed on the 303(d) list for PCBs due to an interim health advisory for fish consumption. The advisory was based on elevated PCBs concentrations in fish tissue collected in 1994 that may cause a detrimental human health effect for people consuming fish caught in the Bay. Follow-up studies in 1997 and 2000 confirmed the presence of PCBs in Bay fish tissue at concentrations that may be harmful to fish consumers. As such, the narrative water quality objective for bioaccumulative substances that is protective of these beneficial uses is not attained. This is also deemed impairment of COMM beneficial uses with regards to commercial and sport fishing in the Bay, and of EST, RARE and WILD with regards to bioaccumulation.

Consumption of PCBs-contaminated fish is considered a primary source of human exposure in locations where fish consumption (i.e. sports and subsistence fishing) and PCBs contamination are significant. A related probable exposed population is breast-fed children whose mothers consume PCBs-contaminated fish. The evaluation of the health effects of PCBs mixtures is complicated by their complex congener composition (ATSDR, 2000). There is evidence that PCB-health risks increase with increased chlorination because more highly chlorinated PCBs are retained more efficiently in fatty tissues (USEPA, 1997a). Observed effects in humans have ranged from mild reactions to serious health consequences. However, individual PCB congeners have widely varying potencies for producing a variety of adverse biological effects including hepatotoxicity, developmental toxicity, immunotoxicity, neurotoxicity, and carcinogenicity.

PCBs mixtures have been classified as probable human carcinogens (USEPA, 1997a). This is based on studies that have found liver tumors in rats exposed to Aroclors 1260, 1254, 1242, and 1016. Evaluation of the animal data indicates that PCBs with 54 percent chlorine content induces a higher yield of liver tumors in rats than other PCBs mixtures (ATSDR, 2000).

The CTR numerical criterion was derived for the protection of human health from the consumption of aquatic organisms, and as such exceedances of this criterion result in the impairment of the COMM beneficial uses. However, evidence that wildlife may be affected by PCBs exists as bird egg PCBs concentrations that have been measured at levels near the effects threshold (Schwarzbach et al., 2001)

The following sections present the data used to evaluate PCBs impairment of beneficial uses of the Bay. A review of readily available PCBs concentration data for benthic organisms and fish tissue is included, as well as water column PCBs concentrations.

6.1 Benthic Organisms

Several agencies use bivalves to measure the presence of bioaccumulative substances in the water column (NOAA, 1993; Stephenson et al., 1995). Because bivalves integrate water column concentrations of bioaccumulative substances over time, they are useful in identifying geographical areas needing further investigation.

The California Department of Fish and Game (CDFG) initiated the California Mussel Watch Program to measure bioaccumulation in bivalves placed at specific locations throughout the Bay. The long-term bivalve data shows a significant decrease of PCBs concentration in mussels deployed off Point Pinole and Treasure Island between 1977 and 1992 (Stephenson et al., 1995). The bivalve deployment program was continued and expanded by the RMP. RMP data

indicate a continued decrease in PCBs concentration in bivalves placed near Yerba Buena Island from 1980 to 1996 (Gunther et al., 1999).

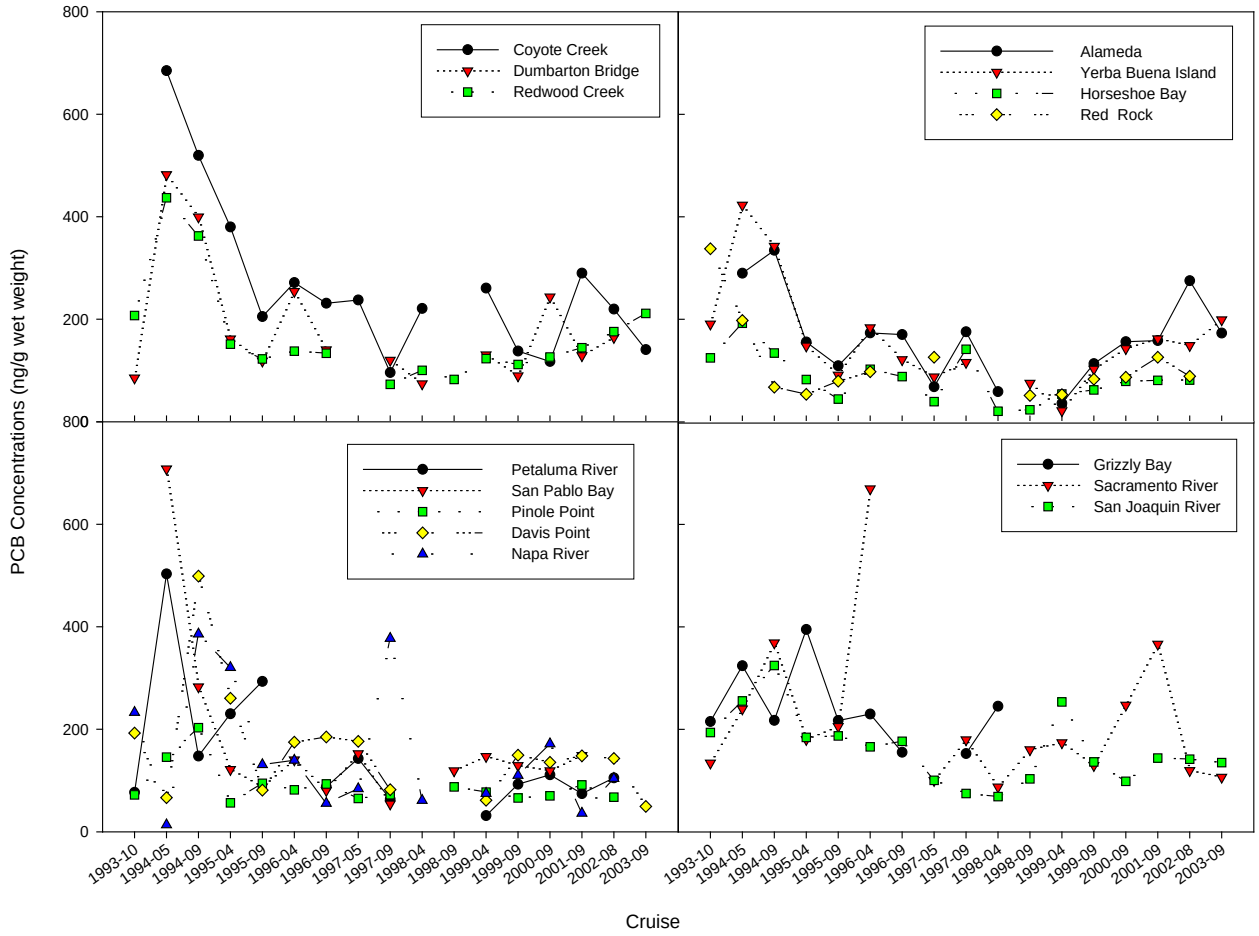


Figure 5-PCBs in Bivalves Deployed in San Francisco Bay (1993-2003)

(http://www.swrcb.ca.gov/programs/smw/index.html and http://www.sfei.org)

Over time, the frequency of deployed bivalves with tissue PCBs concentration less than the screening level of 70 nanograms per gram (ng/g) dry-weight (SFEI, 2000a) has increased (Figure 5), indicating potential improvement of the Bay relative to PCBs. Interpretation of bivalve data is limited, however, due to changing analytical procedures over time.

PCBs tissue concentrations of intertidal benthic organisms have been measured at concentrations up to 700 ng/g wet weight (PRC, 1996) near Hunter's Point Shipyard. Unfortunately, this study combined all species collected within an area and did not measure PCBs concentrations in collocated sediments. Note, however, that the maximum tissue concentration is much greater than the currently used level of concerns for fish tissue and for deployed bivalves. In a subsequent investigation at Hunter's Point Shipyard, PCBs concentrations up to 13,000 ng/g dry weight were measured in polychaete worm tissue collected in the South Basin (U.S. Navy, 2005). The biota were collected at a known PCBs-

contaminated sites in the Bay where sediment PCBs concentrations are several orders of magnitude greater than those in ambient sediments.

PCBs concentrations seem to be declining over time in deployed bivalves, but are still measured at concentrations causing concern. Other benthic organisms, collected at contaminated sites, are often orders of magnitude greater than the screening level, and could be significant sources of PCBs to fish in the Bay.

6.2 Fish Tissue Studies

In 1994, fish were collected throughout the Bay and analyzed for a suite of contaminants including PCBs (SFBRWQCB, 1995). All fish species collected in the 1994 study had tissue PCBs concentrations exceeding the calculated screening level of 3 ng/g wet weight (SFBRWQCB, 1995). Based on these PCBs concentrations, as well as elevated concentrations of other contaminants, measured in this fish study, the Office of Environmental Health Hazard Assessment (OEHHA) issued an interim fish consumption advisory for all of San Francisco Bay (OEHHA, 1994). The OEHHA advisory is listed as interim because more information is needed about PCBs (and other contaminants) concentrations in fish in San Francisco Bay and fish PCBs concentrations that are protective of human health. Note that nationwide, there are 873 advisory listings for PCBs in surface water (USEPA, 2005). OEHHA is currently reviewing this interim health advisory (OEHHA, 1999). This review includes consideration of newly collected Bay fish PCBs concentration data (SFEI, 1999a; Greenfield et al., 2003; Davis et al., 2006). OEHHA will also be considering survey results of San Francisco Bay sport fish consumers and their level of fish consumption (SFEI, 2000a).

In 1997 and 2000, the RMP collected and analyzed Bay fish for contaminant concentrations (Greenfield et al., 2003; SFEI, 1999b; Davis et al., 2006). As part of these studies, the screening level for fish tissue PCBs concentration was recalculated based on an updated cancer slope factor of 2 (USEPA, 1997a); the resulting screening level was 23 ng/g wet-weight (SFBRWQCB, 1995). We recalculated this screening level using local fish consumption habits (SFEI, 2000a). We used a 95th percentile upper bound estimate of the local consumption rate for fish-consuming anglers of 32 grams fish per day rather than a consumption rate for the general population of the Bay area which would be smaller. This conservative estimate constitutes, in effect, a margin of safety for the TMDL, implicitly recognizing the long-term goal of increasing the viability of fish consumption and commercial harvest from the Bay. The screening level is calculated as follows:

$$SVc = \left[\left(RL / CSF\right) * BW\right] / CR \qquad \textit{(Equation 1)}$$

where,

SVc = Screening value for a carcinogen in mg/kg
RL = Maximum acceptable risk level, 10^{-5} or one in 100,000
CSF = Oral cancer slope factor, upper bound estimate is 2 $(mg/kg\text{-}day)^{-1}$
BW = Mean body weight of the population (70 kg)
CR = Fish consumption rate by all consumers based on a four-week recall, 32 g/day

The calculated screening level is 10 ng/g wet-weight. This screening level applies directly to the attainment of the COMM beneficial uses. As will be discussed in Section 9.1, this screening level is equivalent to a sediment PCBs concentration of 1 ng/g. The screening level is therefore

also be protective of the EST, RARE, and WILD beneficial uses as USEPA (1997b) calculated a screening level for the protection of wildlife of 160 ng/g PCBs in sediment. Using the same method and assumptions, a dioxin toxic equivalent (TEQ) screening level of 0.14 pg/g dioxin is calculated for PCBs with dioxin-like properties.

Fish tissue PCBs concentrations in all white croaker and shiner perch exceeded the screening level by an order of magnitude in the four years for which data were collected (Figure 6). Three other fish species had a high frequency of screening level exceedances: sturgeon, jacksmelt and striped bass. Two other species' contaminant concentrations had a low frequency of screening level exceedances: halibut and leopard shark. In shiner surfperch and white croaker, PCBs tissue concentrations are noticeably more elevated than in the other fish species, in large part due to the higher lipid content of these fish (SFEI, 1999b).

Regional differences in fish tissue PCBs concentrations are noticeable, especially in the 1997 data. In the 1997 data, elevated fish tissue PCBs concentrations are noticeable in the Oakland inner harbor for the three fish species shown in
Figure 7: jacksmelt, surfperch and white croaker. This is not unexpected as several contaminated sites are located in the Oakland inner harbor (Batelle, 1988; BPTCP, 1998). In 2000, elevated PCBs concentrations are also noticeable for surfperch in the Oakland inner harbor as well as in San Leandro Bay, another area known to have elevated sediment PCBs concentrations (Daum et al., 2000). Elevated fish tissue concentrations in certain locations may reflect a localized diet of benthic organisms residing in contaminated sediments.

PCBs concentrations in white croaker tissue collected in the Oakland Inner Harbor showed a seasonal trend (Figure 8) with higher concentrations in summer and fall and lower concentrations in winter and spring (Greenfield et al., 2003). The trend was correlated with lipid content of the white croaker, and a relation of PCBs concentrations with reproductive activity has been hypothesized (Greenfield et al., 2003). Based on these results, we consider that relying on white croaker PCBs data collected in summer is adequate for long-term trend monitoring as it reflects the season with the higher PCBs concentrations in fish. This seasonal trend will need to be verified for other fish species of concern.

Long-term trends indicate that PCBs tissue concentrations have decreased in shiner surfperch since 1965 (Risebrough, 1995). Unfortunately, data limitations make it difficult to resolve more recent trends of fish tissue PCBs concentrations. For white sturgeon, there does not appear to be a decrease in PCBs concentrations over the last 20 years (Greenfield et al., 2003).

A possible approach for estimating the risk from environmental exposure to PCBs is to use the toxic equivalency factor (TEF) method (ATSDR, 2000). This approach looks at the potency of PCBs mixtures by comparing the toxicity of a individual dioxin-like PCB congener relative to that of 2,3,7,8-tetrachlorodibenzop-dioxin (2,3,7,8-TCDD), the most toxic and studied of the dioxins. Toxicity is calculated as the ratio of the individual PCB congener to that of 2,3,7,8 TCDD that is given a toxicity of 1 (Ahlborg et al., 1994). The contribution of each congener to dioxin-like toxicity (Table 9) is calculated by multiplying their environmental concentrations by its toxic equivalent factor (TEF) and summing to get a dioxin toxic equivalent (TEQ).

A fish tissue screening value for TEQ of 0.14 pg/g was calculated using the same methodology as that for total PCBs. That is, we used the same equation with the same values for risk level, body weight and fish consumption rates. However, we used a cancer slope factor of 156,000, specific to dioxin-like PCBs (USEPA, 2000d). In some cases, the TEQ was calculated using

only three PCB congeners. PCBs 77, 126 and 169. However the TEQ from these three congeners usually comprises more than 80 percent of the TEQ from all PCB congeners with dioxin like toxicity. The screening value is exceeded in shiner surfperch, striped bass and white croaker (*Figure 9*).

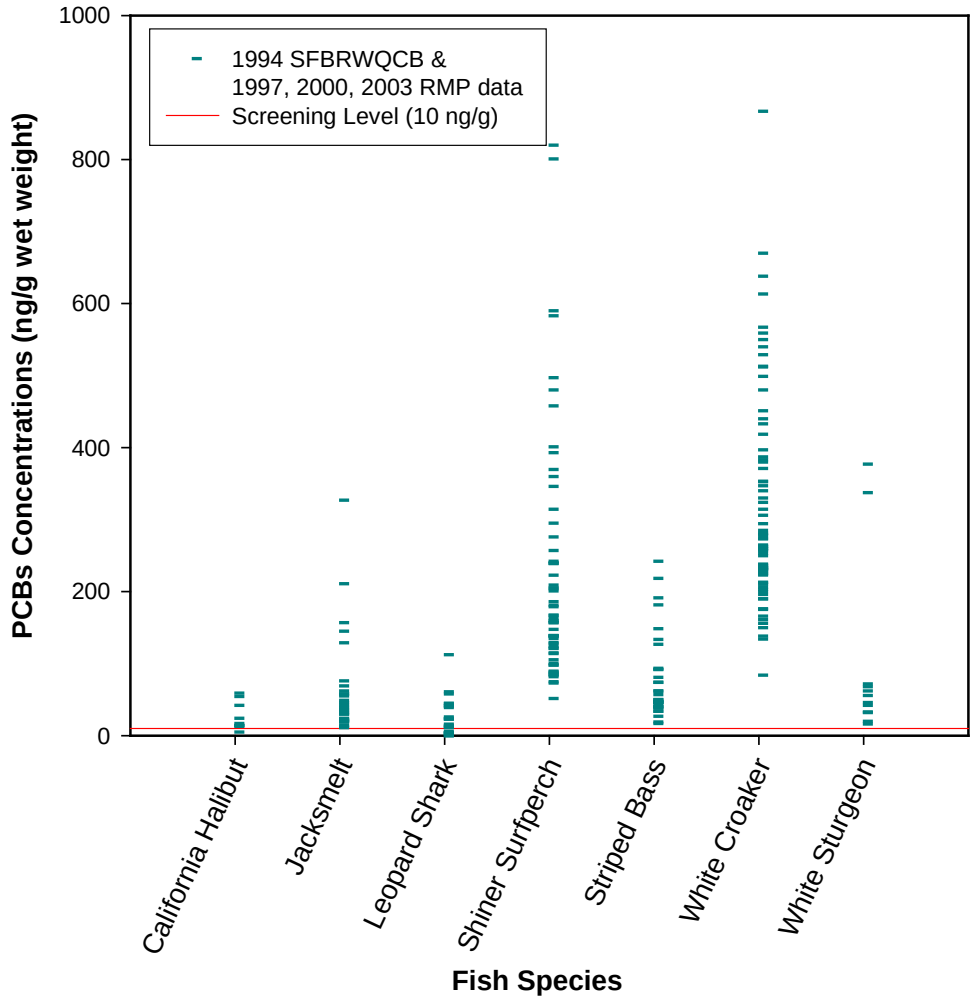


Figure 6-PCBs Concentrations in San Francisco Bay Fish. (Source www.sfei.org)

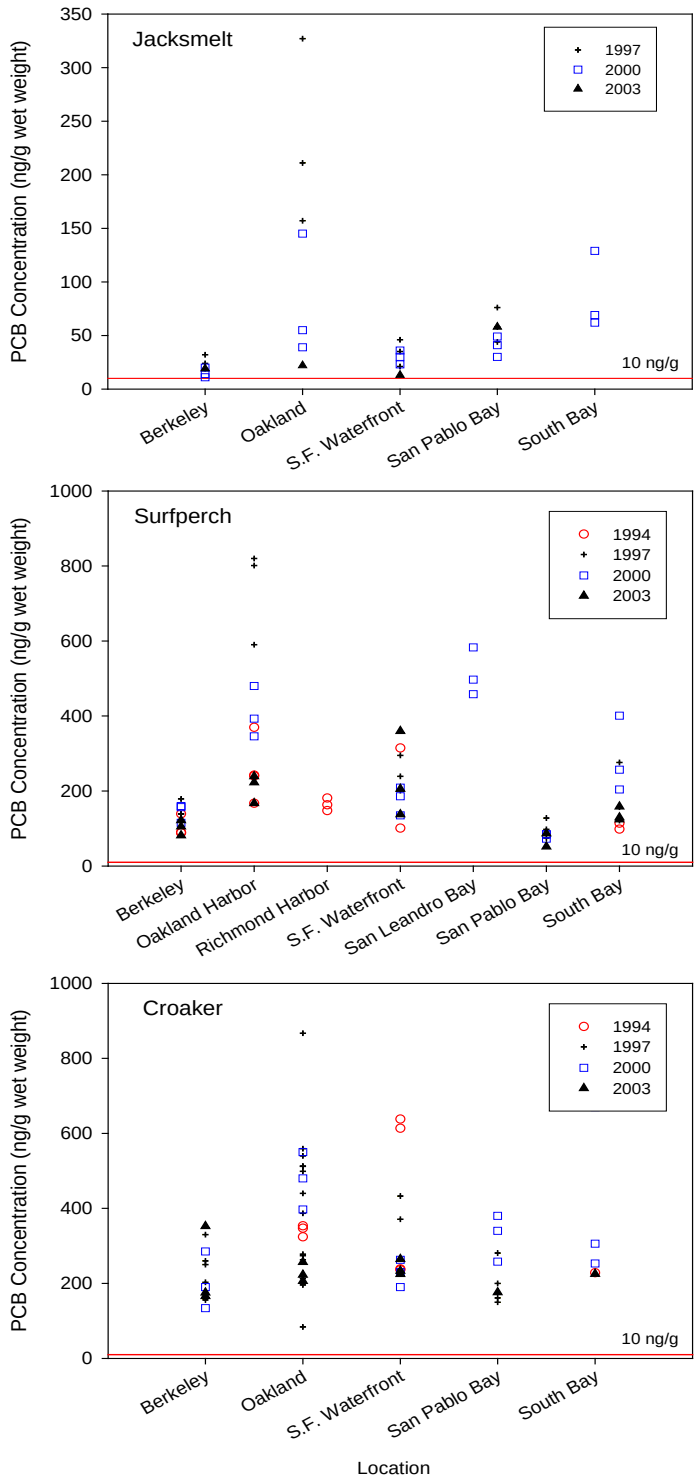


Figure 7-PCBs Concentrations in Selected San Francisco Bay Fish Tissues (1994, 1997, 2000 and 2003). Screening Level is 10 ng/g Wet weight. (Source www.sfei.org)

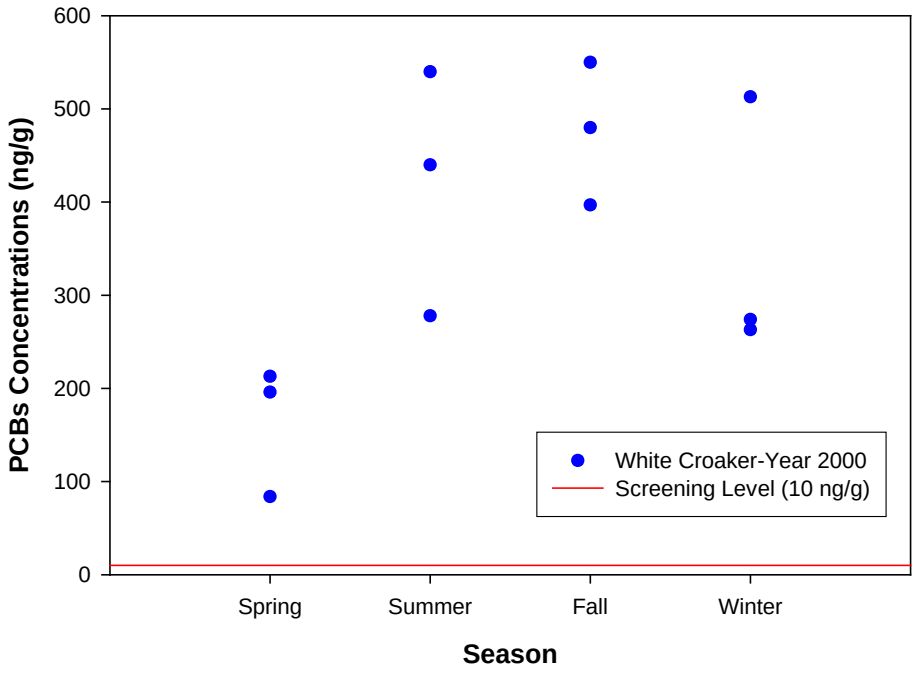


Figure 8-Seasonal Variation of PCBs Concentrations in White Croaker Adapted from Greenfield et al. (2005)

Table 9-PCB Dioxin Toxic Equivalent Factors (Van den Berg, 1998)

IUPAC	NAME	TEF
PCB-77	3,3',4,4'-Tetrachlorobiphenyl	**0.0001**
PCB-81	3,4,4',5-Tetrachlorobiphenyl	**0.0001**
PCB-105	2,3,3',4,4'-Pentachlorobiphenyl	**0.0001**
PCB-114	2,3,4,4',5-Pentachlorobiphenyl	**0.0005**
PCB-118	2,3',4,4',5-Pentachlorobiphenyl	**0.0001**
PCB-123	2,3',4,4',5'-Pentachlorobiphenyl	**0.0001**
PCB-126	3,3',4,4',5-Pentachlorobiphenyl	**0.1**
PCB-156	2,3,3',4,4',5-Hexachlorobiphenyl	**0.0005**
PCB-157	2,3,3',4,4',5'-Hexachlorobiphenyl	**0.0005**
PCB-167	2,3',4,4',5,5'-Hexachlorobiphenyl	**0.00001**
PCB-169	3,3',4,4',5,5'-Hexachlorobiphenyl	**0.01**
PCB-170	2,2',3,3',4,4',5-Heptachlorobiphenyl	**0.0001**
PCB-180	2,2',3,4,4',5,5'-Heptachlorobiphenyl	**0.00001**
PCB-189	2,3,3',4,4',5,5'-Heptachlorobiphenyl	**0.0001**

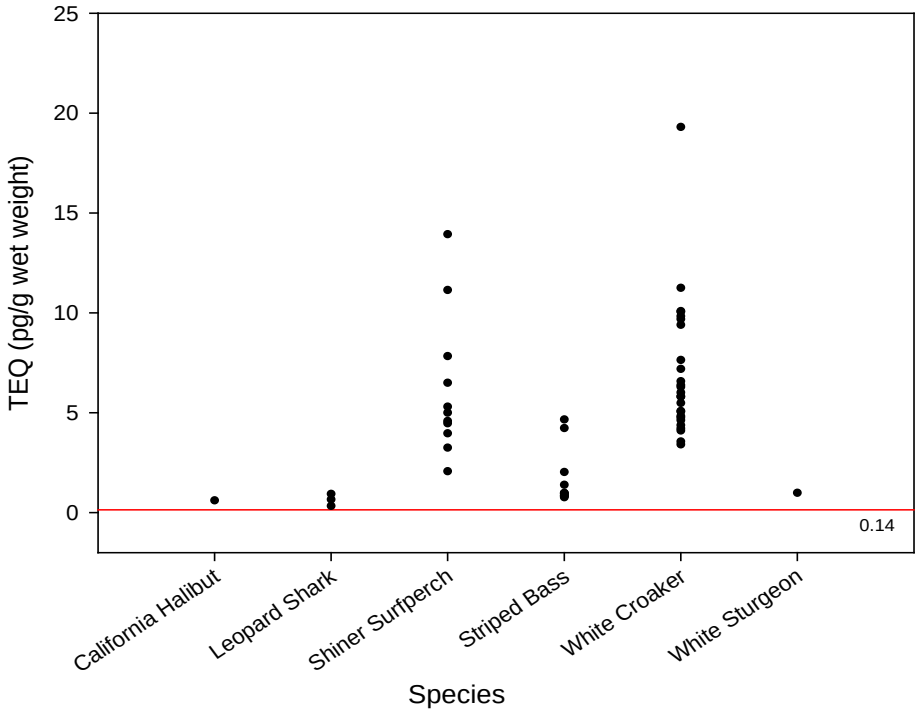


Figure 9- PCB Dioxin Toxic Equivalent (pg/g) in Selected San Francisco Bay Fish (1994, 1997, 2000) (source www.sfei.org)

6.3 Aqueous PCBs concentrations

As previously discussed, USEPA has promulgated a water quality criterion for total PCBs of 170 pg/L (USEPA, 2000b). Over a nine-year period of monitoring at San Francisco Bay monitoring stations (Figure 10), the PCBs water quality criterion was almost always exceeded (Figure 11; Figure 12). In the South Bay and the mouth of the Petaluma River, the water quality criterion was exceeded in 100 percent of the samples. Samples from all other in-Bay RMP sampling locations exceeded the criterion nearly 100 percent of the time. There are no apparent increasing or decreasing trends in water column PCBs concentrations over this time period, so the Bay can be considered at steady state with respect to PCBs concentrations.

The San Joaquin and Sacramento River monitoring stations did not exceed the criterion as often than those in-Bay locations. The criterion was exceeded fewer than 50 percent of the time at only one monitoring station: the Golden Gate located outside the Bay. Elevated in-Bay water column PCBs concentrations can therefore be attributed to Bay Area sources, whether from ongoing discharge of PCBs to the Bay or remobilization of PCBs already in Bay sediments.

There is a high frequency of water column exceedances of the PCBs water quality criterion. Yet, as was discussed in sections 6.1 and 6.2, benthic organisms and fish have elevated PCBs in areas where sediments also have elevated PCBs concentrations. In order to lower the fish tissue PCBs concentrations to the screening level, the TMDL focuses on PCBs in sediments.

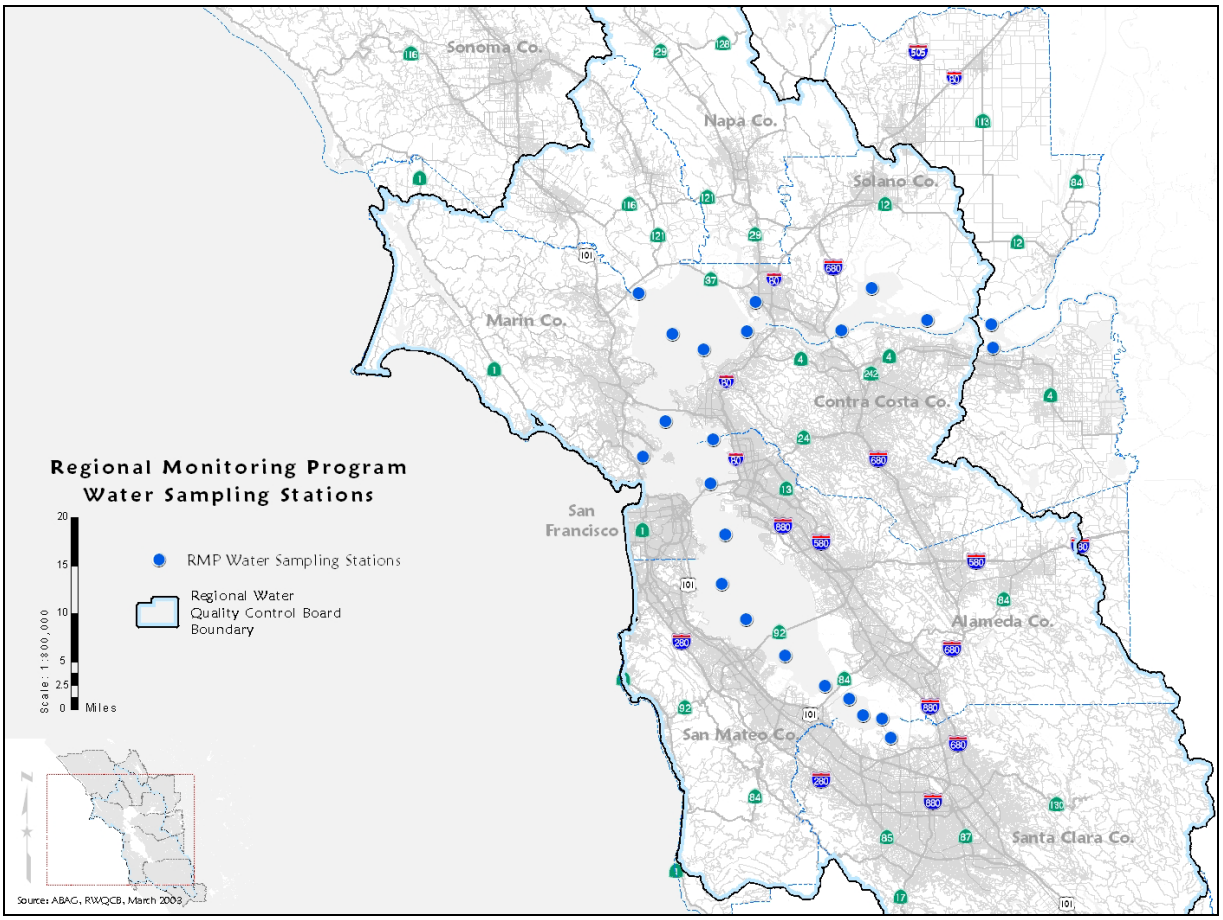


Figure 10-Regional Monitoring Program Sampling Stations (1993-2001)

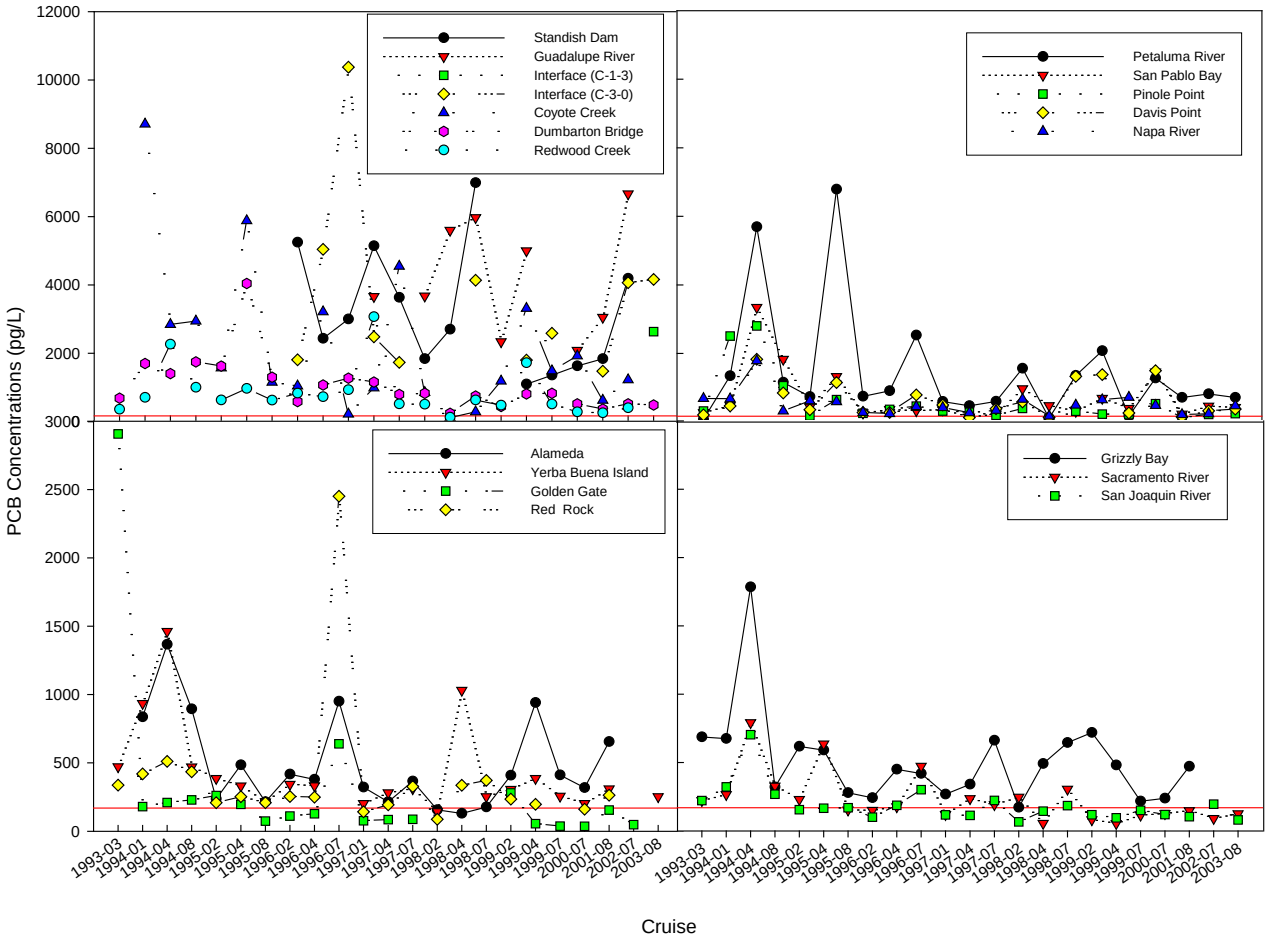


Figure 11-Water Column PCBs Concentrations in San Francisco Bay Fixed Stations (1993-2003)

Red line is the applicable water quality standard of 170 pg/L (based on data from http://www.sfei.org)

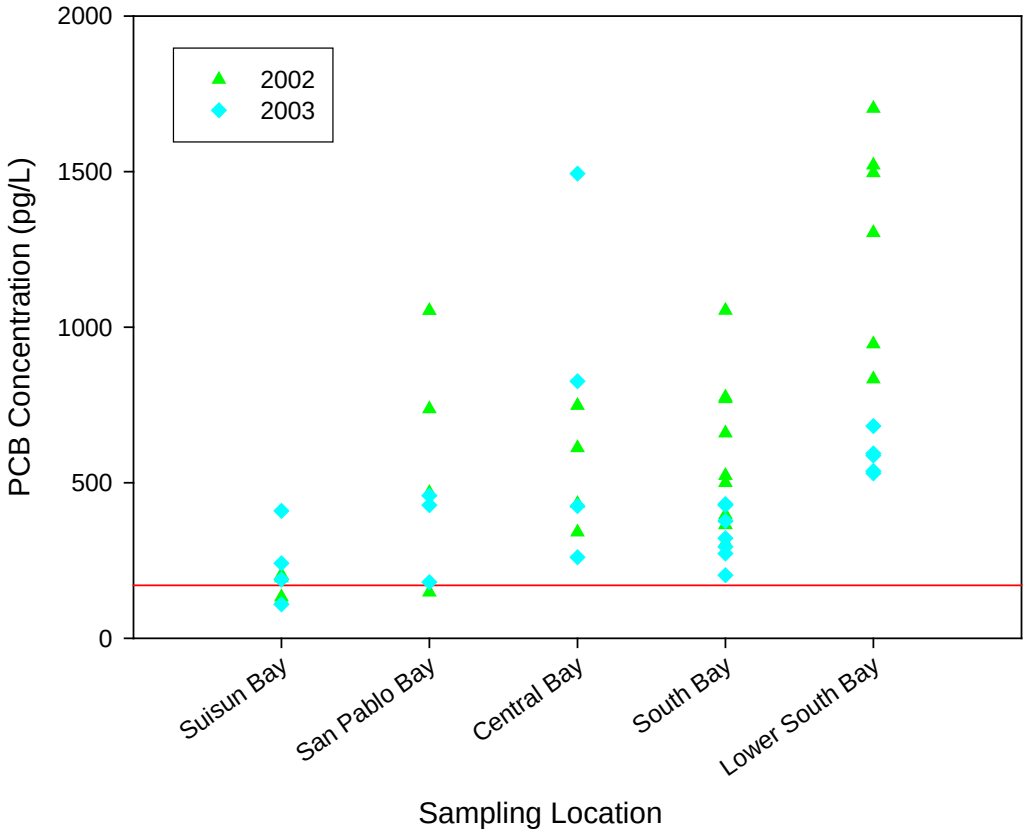


Figure 12-Water Column PCBs Concentrations in San Francisco Bay-Random Design
Red line is the applicable water quality objective of 170 pg/L.

7. Reservoirs, Sources and Loads, and Movement of PCBs

Since the onset of production in 1929, PCBs have been introduced to the environment through land disposal (legal and illegal), accidental spills and leaks, incineration of PCBs or other organic materials in the presence of chlorine, pesticide applications, surface coatings such as paints and caulks, and wastewater discharge. Diffusion of PCBs from localized areas with high PCBs concentrations has resulted in widespread low-level background concentrations across the globe (Erickson, 1997).

In the following sections, we present our understanding of PCBs distribution in the Bay, along with estimates of sources and loads. We have assessed current PCBs mass in the water column and sediments, as well as the loads from direct atmospheric deposition, Central Valley watershed inputs, municipal and industrial wastewaters, and stormwater runoff to the Bay. We also present our understanding of in-Bay PCB-contaminated sites, but can not estimate their role as sources to the water column and biota.

7.1 Environmental Reservoirs

Due to potentially large historical releases of PCBs to the Bay, an estimate of PCBs reservoirs is needed to put current PCBs loads in perspective. Two environmental reservoirs of PCBs exist in the Bay: the water column and the sediments. As discussed below, the mass of PCBs in sediments is much greater than in the water column. However, it is important to note that a numeric criterion exists for water but not for sediments. This is important since the potential for sediments to be resuspended and supply PCBs to the water column is significant, as well as the ability for sediment to supply PCBs directly to biota.

Water Column

SFEI (2007) calculated a Bay-wide PCBs concentration of 430 pg/L from RMP data collected between 2002 and 2006. Based on this water column concentration and a water volume of 5,500 million m^3 for the Bay, they estimate a PCBs mass of 2.4 kg in the water column (SFEI, 2007).

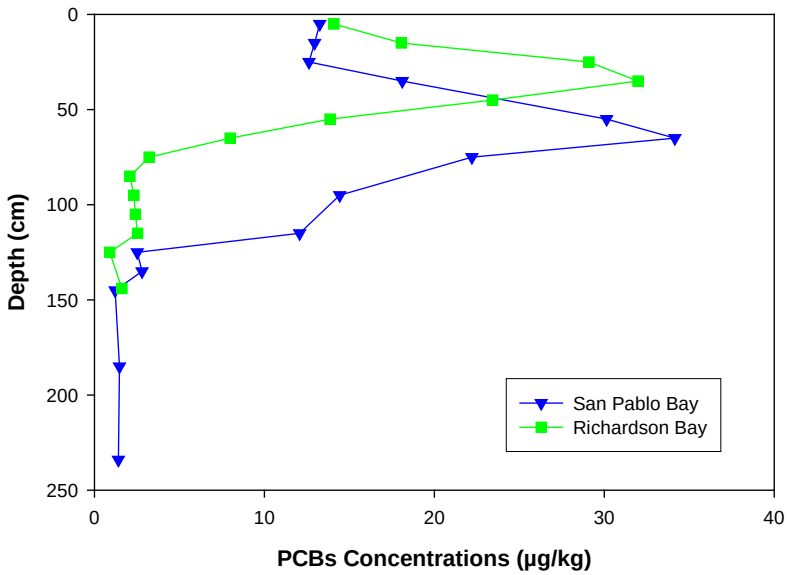


Figure 13-PCBs Concentrations with Depth in Sediments from Two North Bay Locations (USGS, 1999)

Sediments

For the purposes of this report, we separated Bay sediments into two categories: ambient and contaminated. Sediments considered ambient are from locations distant from known sources of contamination and have PCBs concentrations that cannot be statistically differentiated from other sediments collected in similar environments. Sediments considered representative of contamination are usually located near-shore, close to potential sources of contamination and have concentrations often several orders of magnitude greater than ambient sediments.

In 1992, the United States Geological Survey (USGS) collected ambient sediment cores in Richardson Bay and San Pablo Bay (Fuller et al., 1999). Radioisotopes were used to determine deposition chronologies of the sediments, which were compared to the chemical concentrations as a function of depth. PCBs concentrations were relatively constant to a depth of 25 to 50 centimeters (cm), corresponding to deposition since the early 1980s. A sharp increase in PCBs concentrations was observed below those depths, with maximum concentrations corresponding to deposition in the 1970s (Figure 13).

Total masses of PCBs per unit area for the entire depth of the cores were calculated to be 1,400 nanogram per square centimeter (ng/cm^2) and 4,100 ng/cm^2 for Richardson Bay and San Pablo Bay respectively (Venkatesan et al, 1999). Extrapolating the core results to the entire Bay, we estimate based on an estimated surface area of 1,285 km^2 that the total PCBs mass in ambient sediments ranges from 18,000 to 52,000 kg (Table 10). This range is based on the results from sediment cores collected far from known on-land PCBs use areas, and may under-represent total PCBs in the Bay. Yet, sediments represent a PCBs reservoir four to five orders of magnitude larger than the 2.4 kg in the water column.

Table 10-Estimated Total PCBs Mass in Bay Sediments Based on USGS Core Data

Location	Depth (m)	Total PCBs (ng/cm2)	Total PCBs in Estuary (kg)
Richardson Bay	0.75	1,391	18,000
San Pablo Bay	1.25	4,069	52,000

Alternatively, the total mass of PCBs in ambient sediments can be estimated using the mean concentration of PCBs in sediments of 4.6 μg/kg (SFEI, 2007). Again using an area of 1,285 km^2 for the Bay and a depth of 1 meter to cover the depth to which PCBs are usually found. Assuming that Bay sediments are 55 percent solid by weight (range from 40 to 80%), we can estimate total PCBs in sediments. Sediment volumes are converted to sediment dry mass as follows:

$$M_s = \frac{(x\rho_w)}{\left[1 + x\left(\rho_w / \rho_s - 1\right)\right]} V_t$$

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where,

M_s = the dry mass of sediments in kg,
x = the percent solid per unit mass sediment,
ρ_w = the density of water (1kg/L),
ρ_s = the particle density of sediments (2.65 kg/L for aluminosilicates),
and V_t = the volume of sediments.

The dry mass of sediment is then converted to PCBs mass for a range of sediment PCBs concentrations. This gives an estimate of 4,300, kg of total PCBs in ambient sediments of the Bay (Table 11), which is lower than the results based on the USGS cores (Table 10).

There are specific in-Bay locations where sediment PCBs concentrations are much higher than in the rest of the Bay (BPTCP, 1998) that we refer to as PCBs-contaminated sites. Data were collected at these sites (Table 12, Figure 14) to satisfy different regulatory requirements, and are therefore not readily comparable. For example, sampling densities and methods often vary between regulatory programs. Several of the sites (e.g. Cerrito Creek) were identified under the Bay Protection and Toxic Clean-up Program (BPTCP) and the sampling consists of one or a few surface grab samples. The Vallejo Ferry terminal site was identified during sampling and analysis for a dredging project and corresponds to one composite sample collected from several deep cores. Hunters Point Shipyard and Seaplane Lagoon at the Alameda Naval Air Station are Superfund sites regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). They have a much higher sampling density than most other sediment sites in the Bay. Other sites were investigated as part of scientific studies, such as in San Leandro Bay, or remedial investigations of on-land contaminated sites, such as the Emeryville crescent. At the Oyster Point site, remedial actions have already been undertaken. Regardless of the differences in methodology used for collecting these data, the listed sites have sediment PCBs concentrations several orders of magnitude greater than those considered

ambient. These highly elevated PCBs concentrations could be contributing significant PCBs mass to the Bay's biota. PCBs concentrations in sediment dwelling biota can be correlated to PCBs concentrations in sediments (Figure 15). Potential contribution of PCBs to biota from these contaminated sediments needs to be further evaluated, and likely needs to be reduced to lower the fish tissue PCBs concentrations.

Table 11-Estimated Total PCBs Mass in Bay Sediments Based on Ambient PCBs Concentrations

Sediment PCB Concentrations (µg/kg)	SurfaceArea (km^2)	Depth (m)	Total PCBs (kg)
4.6	1,285	1	4,300
11	1,285	1	12,000
22	1,285	1	24,000
35	1,285	1	38,000

Table 12-PCBs-Contaminated Sites in the Bay

Bay Segment	Location	Maximum Sediment PCBs concentrations (µg/kg)	References
Suisun Bay	Peyton Slough	>200	BPTCP (1998)
San Pablo Bay	Vallejo Ferry Terminal	>1,000	MEC (1996), Regional Board File No.2128.03
Central Bay	Richmond Harbor/Potrero Point	>10,000	Hart Crowser (1993), BPTCP (1998), Battelle (1994)
	Stege Marsh	>1,000,000	BPTCP (1998), PERL(1999), URS (2000a), URS (2002a)
	Richardson Bay	>200	EDAW (1997); ABT (1998)
	Cerrito Creek	>200	BPTCP (1998)
	Cordonices Creek	>200	BPTCP (1998)
	Emeryville Crescent	>1,000	TetraTech (1993)
	Oakland Army Base	>1,000	Arcadis (2004)
	Oakland Harbor	>200	Battelle (1988), BPTCP (1998), EVS et al. (1998)
	San Leandro Bay	>1,000	BPTCP (1998), Daum et al., (2000), Regional board File No. 2199.9018A
	Alameda Naval Air Station Seaplane Lagoon	>1,000	BPTCP (1998), US Navy (1999), Battelle et al. (2001) Battelle (2005)
	Islais Creek	>200	BPTCP (1998), SFPUC (2002)
	Mission Creek	>200	BPTCP (1998), SFPUC (2002)
	Yosemite Creek Hunters Point Shipyard	>10,000	BPTCP (1998), SFPUC (2002), PRC (1996) Navy (2004), Battelle et al. (2004)
	Oyster Point	>1,000	MEC (1990), Treadwell and Rollo (1995), URS (2000b)
	San Francisco Airport	>1,000	BPTCP (1998), URS (1999)
South Bay	Redwood City Harbor	>1,000	MEC (1997), ABT (1997)
Lower South Bay	Moffett Federal Airfield NASA Ames	>10,000	PRC and Montgomery Watson (1997)
	Guadalupe Slough San Jose	>200	ESA (1988)

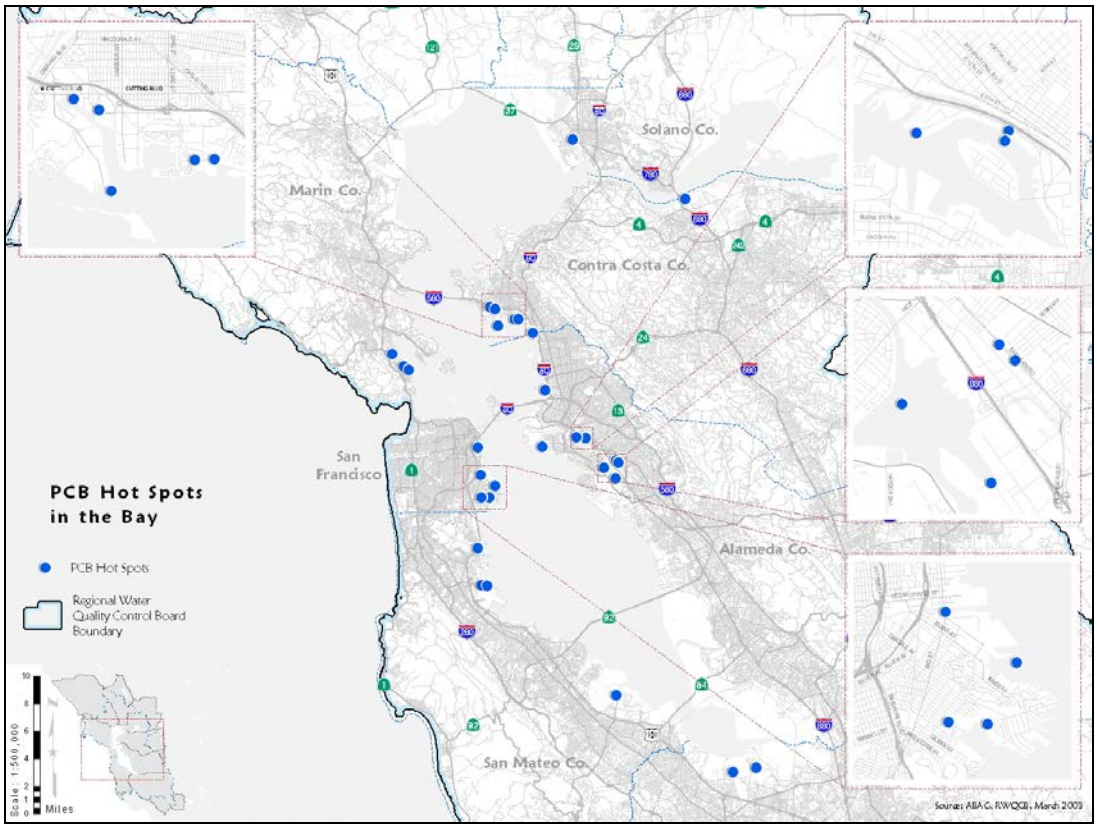


Figure 14-PCBs-Contaminated Sites in the Bay

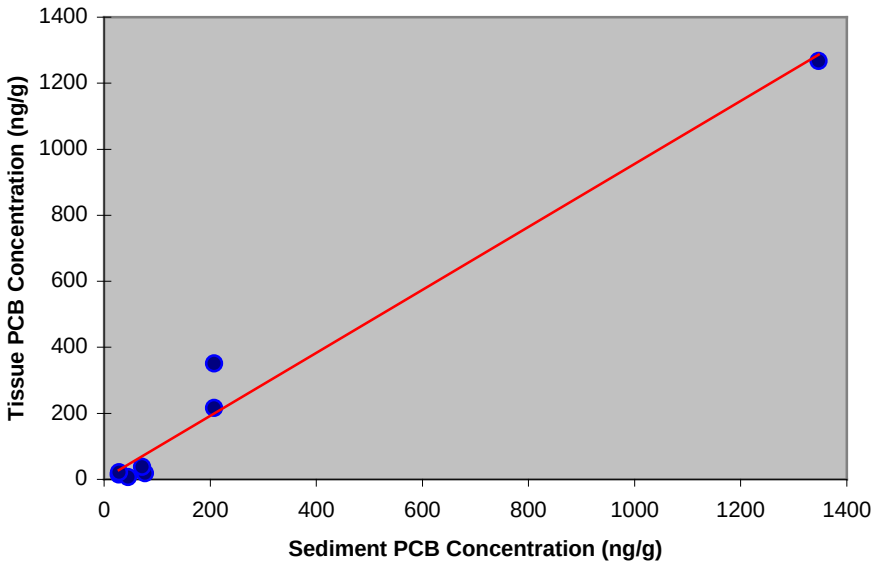


Figure 15-PCBs Concentrations in Sediment and Bent-Nosed Clam (Macoma nasuta) Tissue Following Bioaccumulation Testing, Seaplane Lagoon, Alameda NAS

7.2 External Sources

As previously discussed, sediments are the largest PCBs reservoir in the Bay and may contribute significant PCBs mass to biota. However, these sediments correspond to only one pathway of PCBs loadings to the Bay. As part of developing this TMDL, all known and potential sources and loads of PCBs to the Bay must be considered. In this section, we present our current understanding of sources and estimates of the loads from the following sources:

- Direct atmospheric deposition
- Central Valley watershed (Sacramento and San Joaquin Rivers)
- Municipal and industrial wastewater discharges
- Runoff and local tributaries

Direct Atmospheric Deposition

PCBs have been detected in remote regions of the world, far from known areas of PCBs use, indicating that atmospheric movement and deposition of PCBs can be significant sources of PCBs to surface waters (Erickson, 1997). Conversely, PCBs can also be lost from surface waters to the atmosphere by volatilization. In some instances, loss of PCBs to the atmosphere can account for the largest removal of PCBs from surface water (Jeremiason et al., 1994).

Deposition of PCBs from the atmosphere occurs either directly to surface waters, or indirectly in the watershed. PCBs deposited in the watershed may then be transported to the Bay via stormwater runoff discharges. The San Francisco Estuary Institute (SFEI) has completed a study of the direct deposition of PCBs to the Bay from the atmosphere (SFEI, 2005; Tsai et al., 2002). Indirect contributions of PCBs to the Bay from the atmosphere were not quantified, but are included in the loadings estimates for urban and non-urban stormwater runoff. Direct PCBs loads to the Bay are estimated to be 0.5 kg/yr (SFEI, 2007), but loss to the atmosphere is estimated at 7.4 kg/yr resulting in a net loss. (Table 13) However, PCBs loss from the Bay to the atmosphere is accounted for in the mass budget model and is quantified in the prediction of attainment of the target.

Table 13-Estimated PCBs Mass Associated with Dredge Material Disposal (2001-2005)

Disposal Site	Total Volume 2001-2005 (cu yd)	Average Volume (cu yd/yr)	Average Annual Estimated PCB Mass (kg/yr)
In-Bay Disposal	8,900,000	1,800,000	4.6
Ocean (SF-DODS) Disposal	3,800,000	760,000	-2.0
Upland/Wetland Reuse	8,100,000	1,600,000	-4.1
Net Loss			-6.1

These load estimates are small compared to load estimates for water bodies elsewhere in the United States and may need to be revised. However, it is very likely that loads to the Bay currently are and have always been, much lower than loads to eastern United States water bodies due to regional wind patterns that typically come from the ocean pushing locally generated airborne PCBs inland and the fact that there have been historically lower uses of PCBs in the Bay area. Finally, it is recognized that water-atmosphere transfers have greatly declined over the last three decades.

Central Valley Watershed

PCBs concentrations in the Sacramento and San Joaquin Rivers have been monitored by the RMP for over ten years. Based on the concentrations measured by the RMP, we had previously estimated that about 40 kg of PCBs entered the Bay each year from the Central Valley. More recently, PCBs loads entering the Bay from the Central Valley have been estimated for the years 2002 and 2003 (Leatherbarrow et al., 2005). Annual loads of PCBs were estimated at 6.0 ± 2.0 and 23 ± 18 kg for years 2002 and 2003, respectively. The load estimates are based on measured flow-weighted mean PCBs concentrations ranging from 200 to 6,700 pg/L with a median concentration of 600 pg/L. SFEI calculated annual PCBs mass loadings using Central Valley water discharge data at Mallard Island from the Department of Water Resources (Interagency Ecological Program) using a mass balance approach and the DAYFLOW model (SFEI, 2007). These annual load estimates may be at the lower end of the range of annual loads as these years were drier years with lower sediment inflow from the Central Valley (Leatherbarrow et al., 2005). For the TMDL, we are using the SFEI derived average load of 11 kg/yr, derived from five years of data, as the loading to the Bay from the Central Valley (SFEI, 2007).

Municipal and Industrial Wastewater Dischargers

There are a number of municipal and industrial wastewater discharges into San Francisco Bay (Figure 16 and Figure 17). Municipal wastewater discharges are located throughout the Bay (Figure 16), while the major industrial wastewater discharges take place in the north Bay segments (Figure 17) where ambient PCBs water concentrations are some of lowest in the Bay.

Municipal and industrial wastewater discharges to surface waters are controlled through waste discharge requirements issued as federal National Pollutant Discharge Elimination System (NPDES) permits. Selected municipal wastewater dischargers (Publicly Owned Treatment Works or POTWs) and petroleum refineries have quantified PCBs in their wastewaters using USEPA method 1668 to achieve lower detection limits (SFEI, 2001b; 2002a; 2002b). Wastewaters from the POTWs with secondary treatment have an average PCBs concentration of 3,600 pg/L (Table 14), while wastewaters from POTWs with advanced treatment have an average PCBs concentration of 210 pg/L (Table 15). Wastewaters from petroleum refineries in the North Bay had an average PCBs concentration of 270 pg/L (Table 16), similar to that in the POTWs with advanced treatment, while other industrial wastewater dischargers had an average concentration of 1900 pg/L.

Using average daily flows from the POTWs and industries, including refineries, and the average PCBs concentrations in wastewaters from each category, we estimate that municipal and industrial wastewater discharges annually contribute 2.3 kg and 0.035 kg of PCBs to the Bay respectively.

Urban and non-Urban Stormwater Runoff

Municipal urban stormwater runoff management agencies measured sediment PCBs concentrations within their urban and non-urban stormwater runoff conveyance systems in the summers of 2000 and 2001 (ACCWP, 2001; ACCWP 2002a, ACCWP 2002b; KLI, 2001; KLI, 2002). The purpose of these studies was to determine whether PCBs are evenly distributed and discharged from stormwater conveyance systems or whether PCBs-contaminated sites exist within watersheds. These studies also attempted to evaluate whether runoff conveyances are sources of PCBs in themselves. The studies also examined whether specific locations within watersheds are contributing to ongoing PCBs discharge to the Bay via stormwater conveyance systems due to historical or current activities at those locations. Finally, loads of PCBs from

runoff to the Bay were estimated based on the sediment PCBs concentrations and estimated loadings of sediments to the Bay.

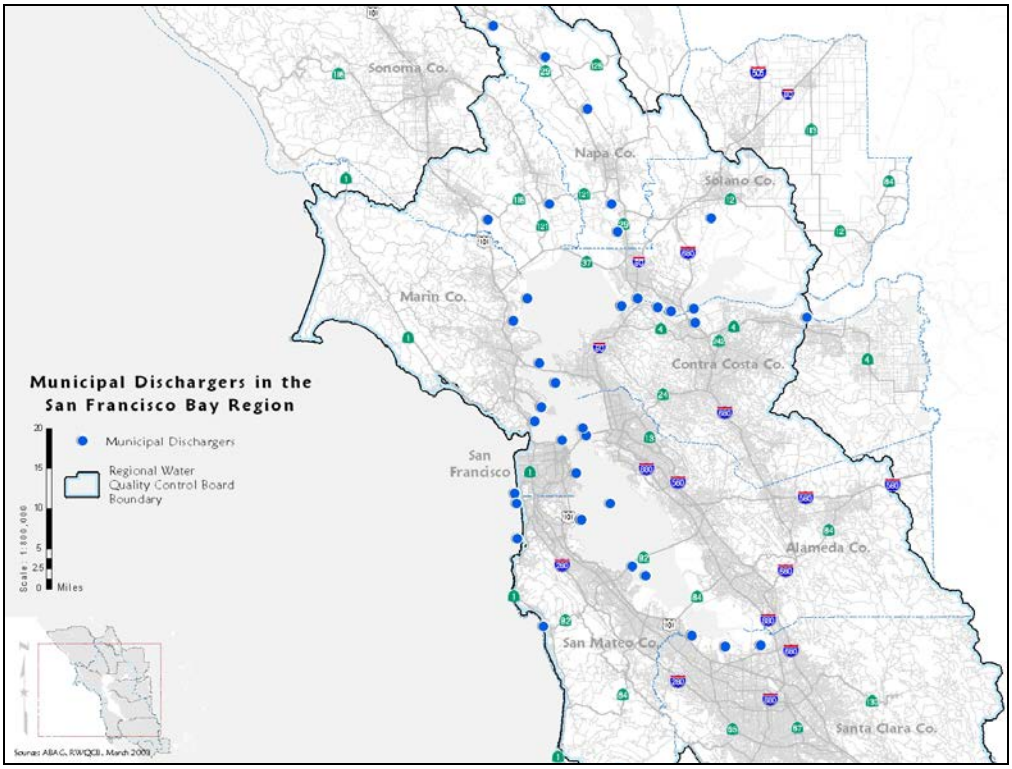


Figure 16-Municipal Wastewater Dischargers in San Francisco Bay

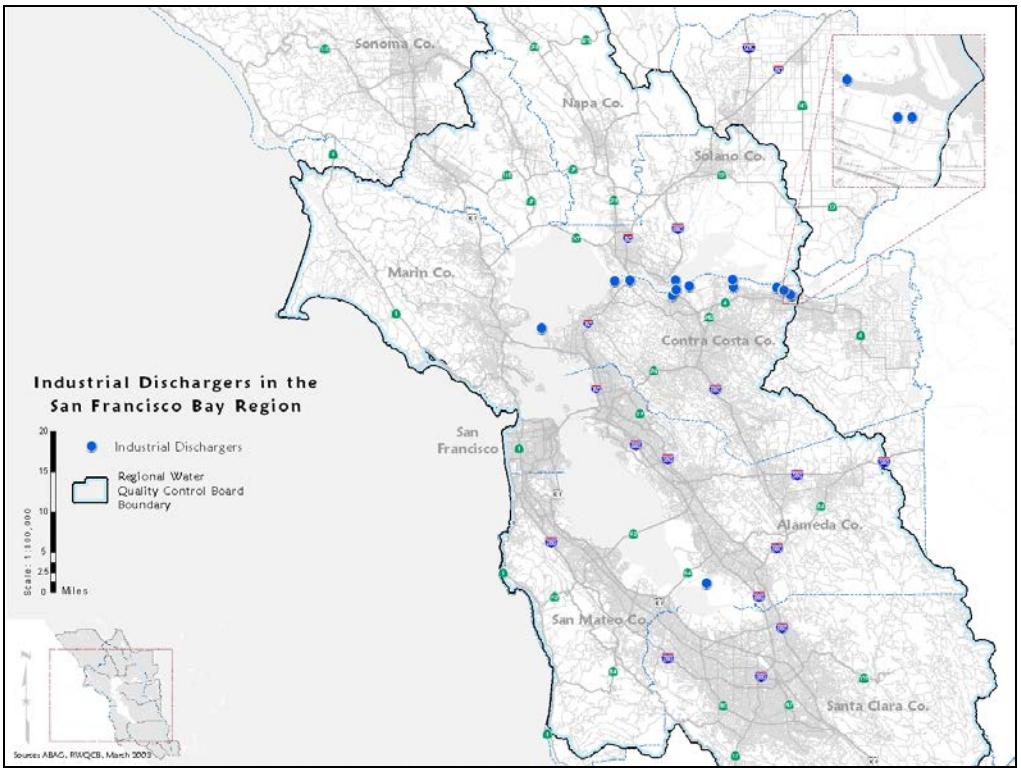


Figure 17-Selected Industrial Wastewater Dischargers in San Francisco Bay

Table 14-PCBs Concentrations in Wastewater from Municipal Dischargers with Secondary Treatment

POTW	PCBs (pg/L)	
	December-00	February-01
East Bay Municipal Utility District	7,900	5,700
Central Costa Costa County Sanitary District	1,100	1,400
East Bay Dischargers Authority	4,700	3,700
City and County of San Francisco	2,200	2,700
Millbrae	NA	2,600

NA = Not Analyzed

(SFEI, 2002a)

Table 15-PCBs Concentrations in Wastewater from Water Municipal Dischargers with Advanced Treatment

POTW	PCBs (pg/L)			
	November-99	February-00	April-00	July-00
Fairfield-Suisun	250	NA	130	NA
Palo Alto	310	310	320	240
San Jose/Santa Clara	190	170	170	190
Sunnyvale	200	190	120	160

(SFEI, 2001b)

Table 16-PCBs Concentrations in Wastewater from Industrial Dischargers

Facility	PCBs (pg/L)
Southern Energy California LLC,	1000
Potrero Power Plant	370
	260
	130
Southern Energy California LLC,	830
Pittsburg Power Plant	72
C&H Sugar Co.	860
	3700
The DOW Chemical Co.	1800
	660
San Francisco, City and Co.,	5600
SF International Airport Industrial WTP	4300
	3400
	3400
Chevron Products Company, Richmond Refinery	650
	570
ConocoPhillips, San Francisco Refinery	170
	380
Shell Oil Products US and Martinez Refining Company,	280
Shell Martinez Refinery	150
Tesoro Refining & Marketing Co, Golden Eagle Refinery	110
	150
Valero Refining Company, Valero Benicia Refinery	170
	85

(SFEI, 2002b)

The urban and non-urban stormwater runoff study found sediment PCBs concentrations ranging from the low µg/kg level to the tens of thousands of µg/kg level. Sediment sampling locations were selected to reflect a variety of land use categories (Figure 18 and Figure 19). Sediment PCBs concentrations were statistically greater in areas of industrial, commercial and residential land use than in open space, clearly showing that PCBs were not evenly distributed across watersheds. Eleven of 209 locations had PCBs concentrations greater than 1,000 µg/kg (Figure 20), while 125 locations had PCBs concentrations greater than in-Bay ambient sediments which have PCBs concentrations of 4.6 µg/kg. Pilot studies of these urban stormwater runoff conveyance systems contaminated sites indicate that only in some cases can the PCBs be traced back to current or historical on-land activities (ACCWP, 2002a, ACCWP, 2002b; CCCWP, 2002; San Jose and EOA, 2002; SMCSTPPP, 2002). Elevated PCBs concentrations in the urban and industrial landscapes were expected due to the widespread use of PCBs both in closed and open applications (Table 8), such as transformers or capacitors that may have leaked, hydraulic fluids, lubricants, and plasticizers, as well as its uses in building materials. PCBs in open space land use area were also expected due to the known role of atmospheric transport and deposition of PCBs around the world, as well as the direct application of PCBs to the environment in various processes (Section 4.3), such as pesticide extenders.

At several locations with elevated sediment PCBs concentrations, follow-up case studies were conducted to attempt to locate the source of PCBs to the stormwater conveyance system (CCCWP, 2002; San Jose and EOA, 2002; SMCSPPP, 2003; SMCSPPP, 2004). These case studies were successful on only some occasions to identify a potential source of PCBs to the stormwater conveyance system. In another study (Kleinfelder, 2006), targeted sampling for

PCBs in soils and sediments the public right-of-way was performed within an industrial watershed with elevated PCBs in storm drain sediments. Sampling locations were based on an analysis of current and past business, followed by inspections for compliance with the industrial general NPDES permit under which the business operate. This investigation was able to detect a number of potential sources of PCBs within the watershed at a larger frequency than in a randomly determined sampling scheme performed alongside. This study showed a need to target PCBs source and treatment controls to current and historical industrial watersheds.

PCBs loads for the Guadalupe River have been estimated to be from 0.7 to 1.2 kg/yr between 2003 and 2005 (McKee et al., 2005). SFEI extrapolated these loads to small urban tributaries and estimated a total load of 20 kg/yr (SFEI, 2007). We use this newer load estimate for combined urban and non-urban stormwater runoff. The contribution to the total load from non-urban runoff is much smaller than that from urban runoff since the mean sediment concentration in open spaces is about 2 µg/kg whereas it is about 500 µg/kg in urban spaces (KLI, 2002).

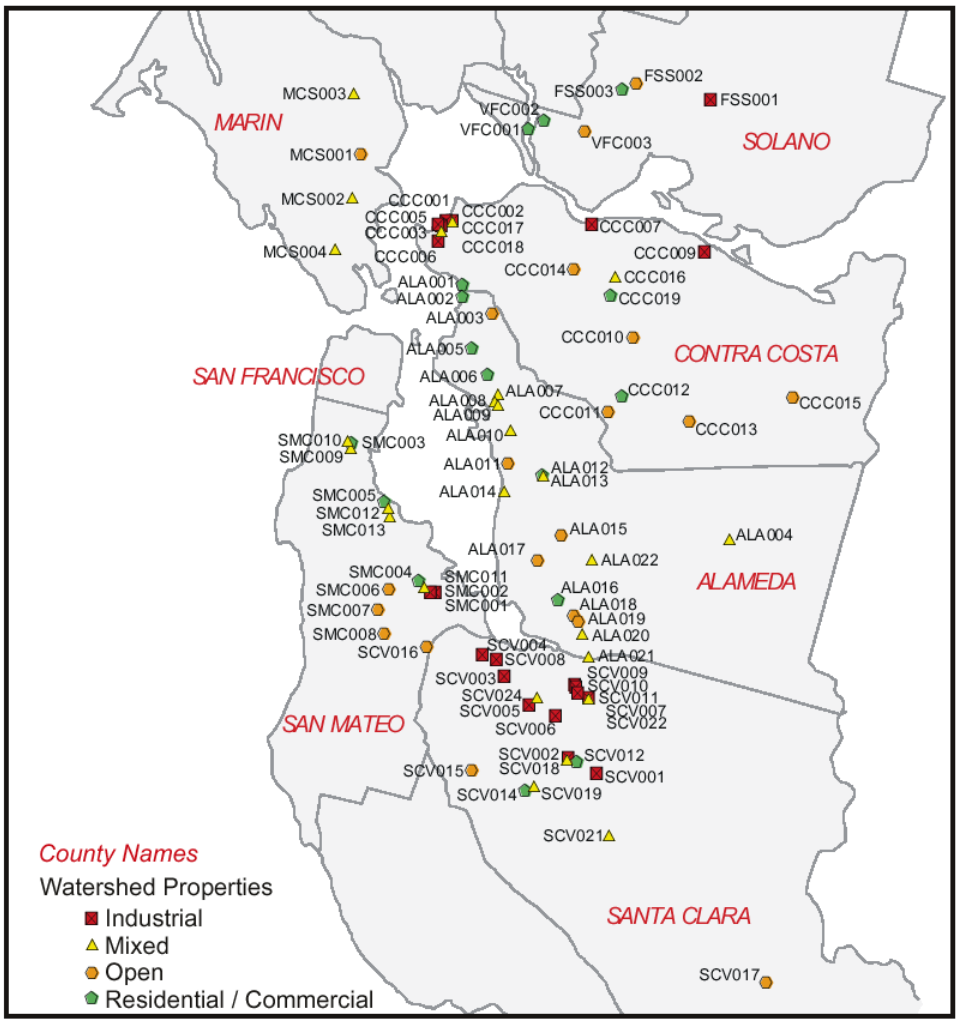


Figure 18-Sediment Sampling Locations in Stormwater Runoff Conveyance Systems (2000) (Source KLI, 2001)

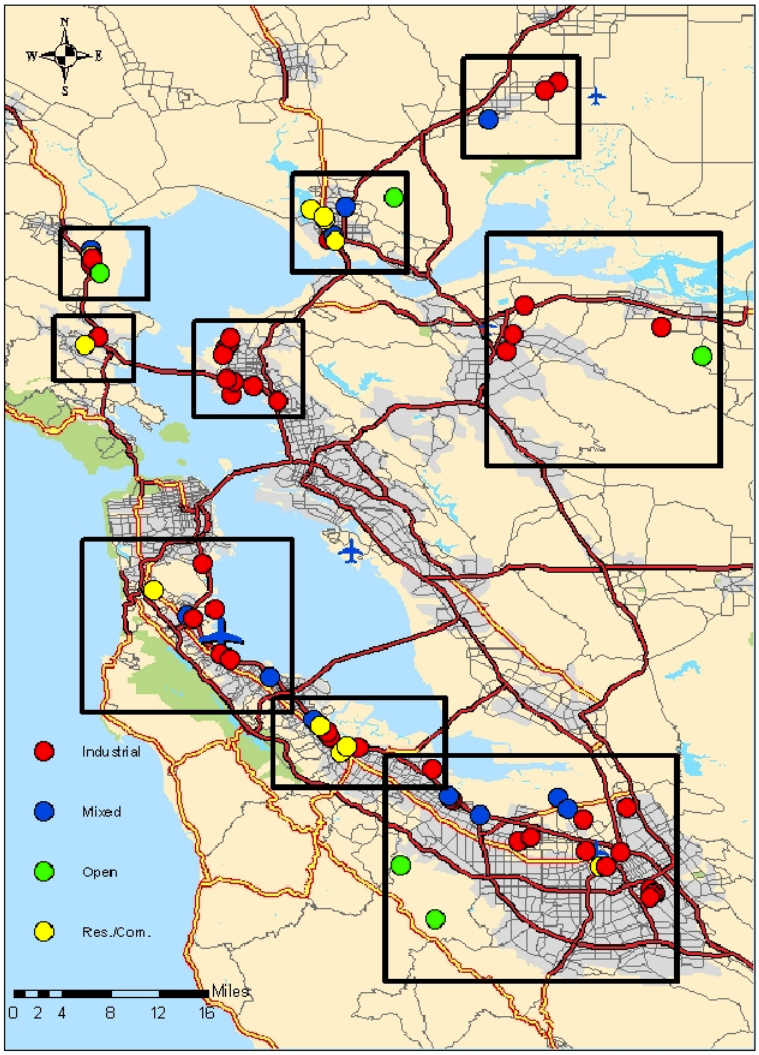


Figure 19-Sediment Sampling Locations in Stormwater Runoff Conveyance Systems (2001) (Source KLI, 2002)

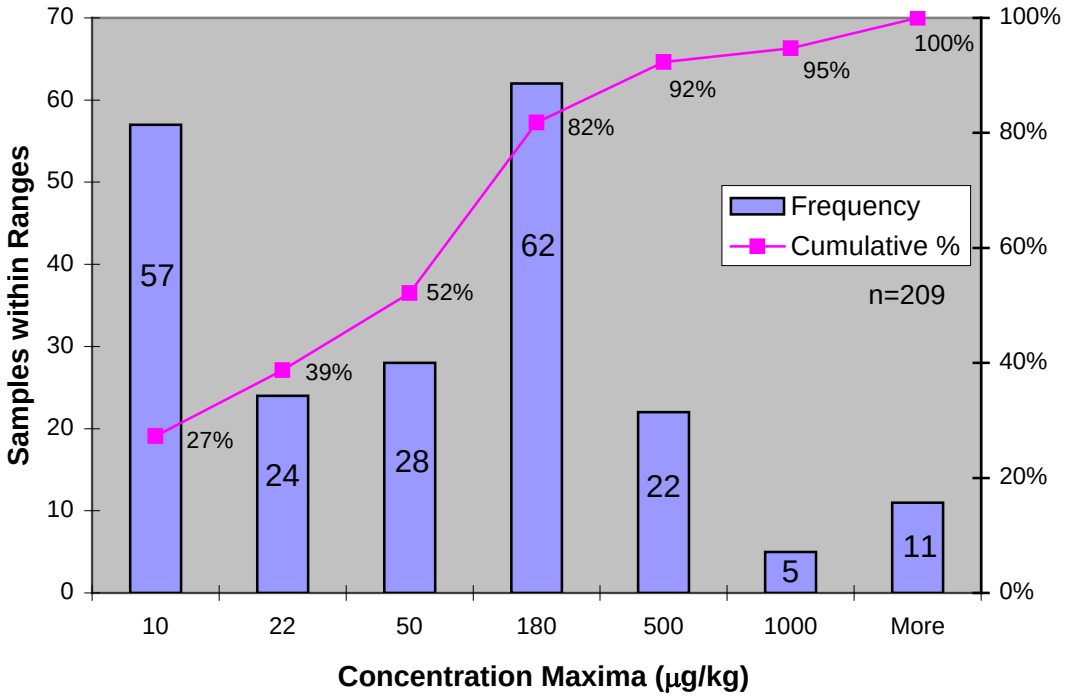


Figure 20-Sediment PCBs Concentrations Distribution in Urban Conveyance Systems (2000-2001)

7.3 Internal Sources

As discussed in Section 7.1, bottom sediments are the largest environmental reservoir of PCBs in the Bay. In general, the water column PCBs mass is mostly associated with suspended sediments. Deposition of suspended sediments and re-suspension of bottom sediments are therefore important processes controlling the mass of PCBs in Bay water. Continual mixing of bottom sediments from wave action or other disturbances, such as mixing by organisms (bioturbation) or erosion of bedded sediments, can provide an ongoing supply of PCBs to the water column and biota. The large mass of PCBs in sediment denotes the importance of sediment dynamics in predicting the fate and distribution of PCBs throughout the Bay. In this section, we look at two processes affecting the bioavailability of sediment-bound PCBs. First, PCBs in the “active” sediment layer are considered because of their potential to be resuspended along with sediment and their potential for uptake by bottom dwelling aquatic organisms (bioavailability). Second, dredging activities are also considered because they can potentially cause previously buried PCBs to become bioavailable.

Active Sediment Layer

A sediment active layer can be defined many different ways based on the biophysical mechanism and reference timeframe of interest. In this report, the active layer is defined as the Bay sediments that are in contact with biota or that can be resuspended into the water column.

In one study, radioisotope dating indicated a mixing depth of about 10 cm on a timeframe of several months in Richardson Bay (Fuller et al., 1999). Biological and physical mixing within the sediment column was further substantiated by burrow worms found to a depth of 12 to 15 cm. In San Pablo Bay, the depth of the active layer was difficult to measure, as sediments at this site are believed to have undergone episodes of rapid deposition and scouring. Worms have also been observed to a depth of one to two feet in the area offshore of Hunter's Point Shipyard (U.S. Navy, 2005).

In this report, we define the active layer as the top 15 cm of sediments in the Bay to be consistent with modeling performed on the long-term fate of PCBs in the Bay. Although there is uncertainty as to the exact depth of the active layer (Davis, 2003), using 15 cm is appropriate to get an order of magnitude estimate of PCBs mass in the active layer because we are interested in the relative masses of PCBs in the various reservoirs and load categories. Using this depth and a mean sediment PCBs concentration of 4.6 µg/kg, we estimate that a PCBs mass of 650 kg resides in the active sediment layer of the Bay, with potentially a maximum between 3,100 and 4,900 kg. This mass is an orders of magnitude greater than PCBs sources and loads discussed in Section 7. The large mass of PCBs in the active layer, as compared to the annual loads, is likely to affect recovery of the Bay even after load reductions have been implemented.

Navigational Dredging

Maintenance dredging of Bay sediments is an ongoing activity where sediment is removed from navigation channels and is disposed of at either designated in-Bay locations (Figure 21) or out of the Bay. Between 2001 and 2005, an annual average of 1.8 million cubic yards per year of dredged sediments were disposed of at in-Bay disposal sites (DMMO, 2006) while an average of about 2.4 million cubic yards of dredged sediments were removed annually from the Bay. Using five year annual averages, we can estimate the mass of PCBs disposed of in and out of the Bay. We converted sediment volumes to dry mass using the equation given in Section 7.1. Using mean ambient PCBs concentrations commonly found in the Bay (4.6 µg/kg), we estimate that, each year, about 4.6 kg/yr of PCBs are being disposed of in the Bay at dredged sediment disposal sites. During the same period, placement of dredged sediment at either upland sites or the deep ocean disposal site removes about 6.1 kg of PCBs per year from the Bay, resulting in a net loss of about 6.1 kg of PCBs each year. However, the large volume of sediment placed upland originates from the 50-feet deepening project by the Port of Oakland. This is a one-time deepening project that does not qualify as maintenance dredging. It is unlikely that this high volume will be maintained after completion of this dredging project. Future upland beneficial reuse and deep ocean disposal will need to obtain sediments from maintenance dredging projects represented mainly by in-Bay disposal volumes. This will result in much smaller volumes taken out of Bay. These are small PCBs masses compared to that in the surface layer (650 kg), but are on the same scale as the loads discussed in Section 7. Furthermore, note that natural processes are believed to annually re-suspend much larger volumes of sediments (Table 2) and could potentially be mobilizing a significantly larger mass of PCBs.

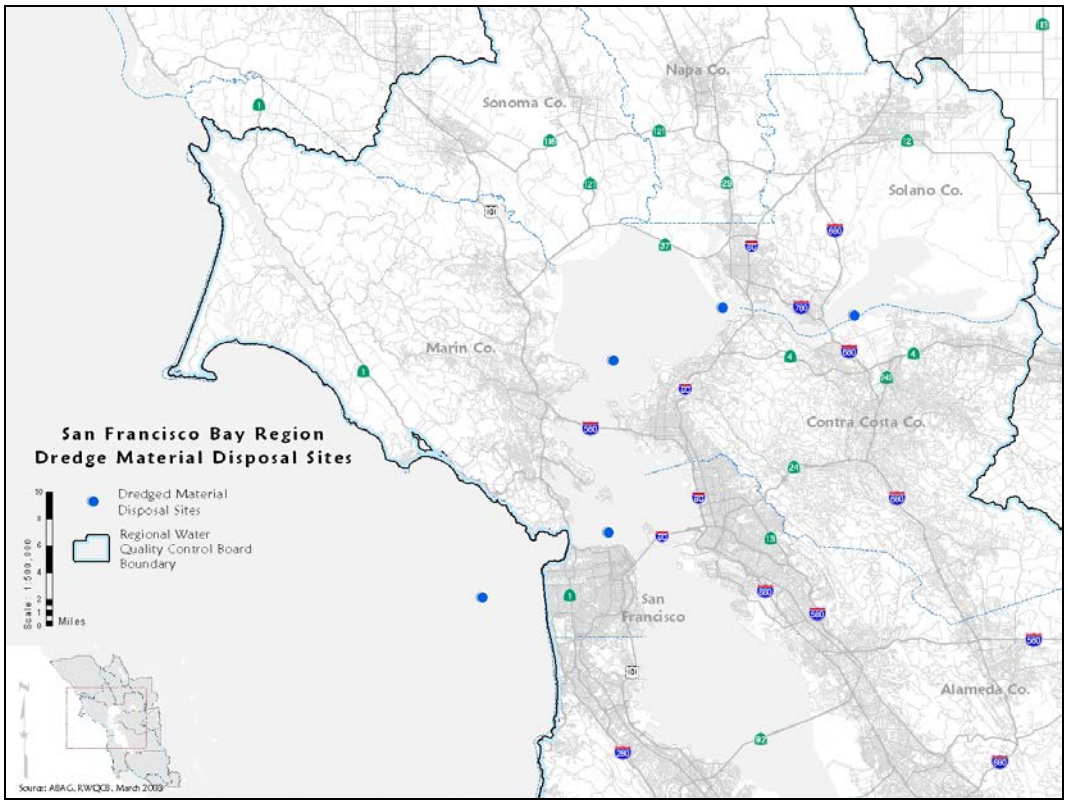


Figure 21-Dredged Sediment Disposal Sites for San Francisco Bay Region

7.4 Summary of PCBs Sources and Loads

Comparing the various load categories, excluding in-Bay sediments, the two major sources of PCBs mass to the Bay come from the Delta and urban stormwater runoff (Figure 22; Table 17) As discussed in Section 7.2, sediments from the Central Valley watershed carry a large mass of PCBs but are lower in concentrations than in-Bay sediments, potentially helping to reduce the current impact of PCBs on the Bay by burying more contaminated sediments. Therefore, implementation of the TMDL should focus primarily on reducing sediment PCBs concentrations by controlling sources in urban stormwater runoff as well as controlling the release of PCBs from contaminated sediments in the Bay.

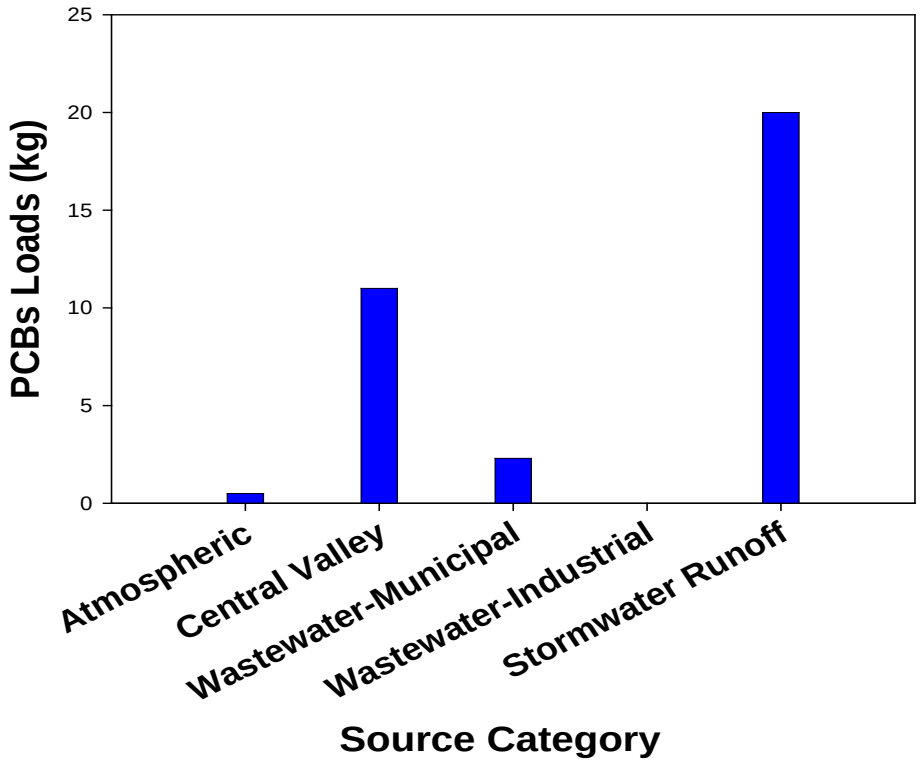


Figure 22-Sources and Loads of PCBs to San Francisco Bay

In summary, PCBs are found mostly in the central and southern portion of the Bay (Figure 23) generally in or near areas associated with historical industrial activities. Therefore, we should focus implementation to these on land areas and the remediation of the nearby in-Bay areas most impacted by PCBs discharges.

Table 17-Synopsis of PCBs Loads to San Francisco Bay

Source Category	Current PCBs Loads (kg/yr)
Atmospheric	Net Loss
Central Valley Watershed	11
Municipal Wastewater Dischargers	2.3
Industrial Wastewater Dischargers	0.035
Urban and Non-Urban Stormwater Runoff	20

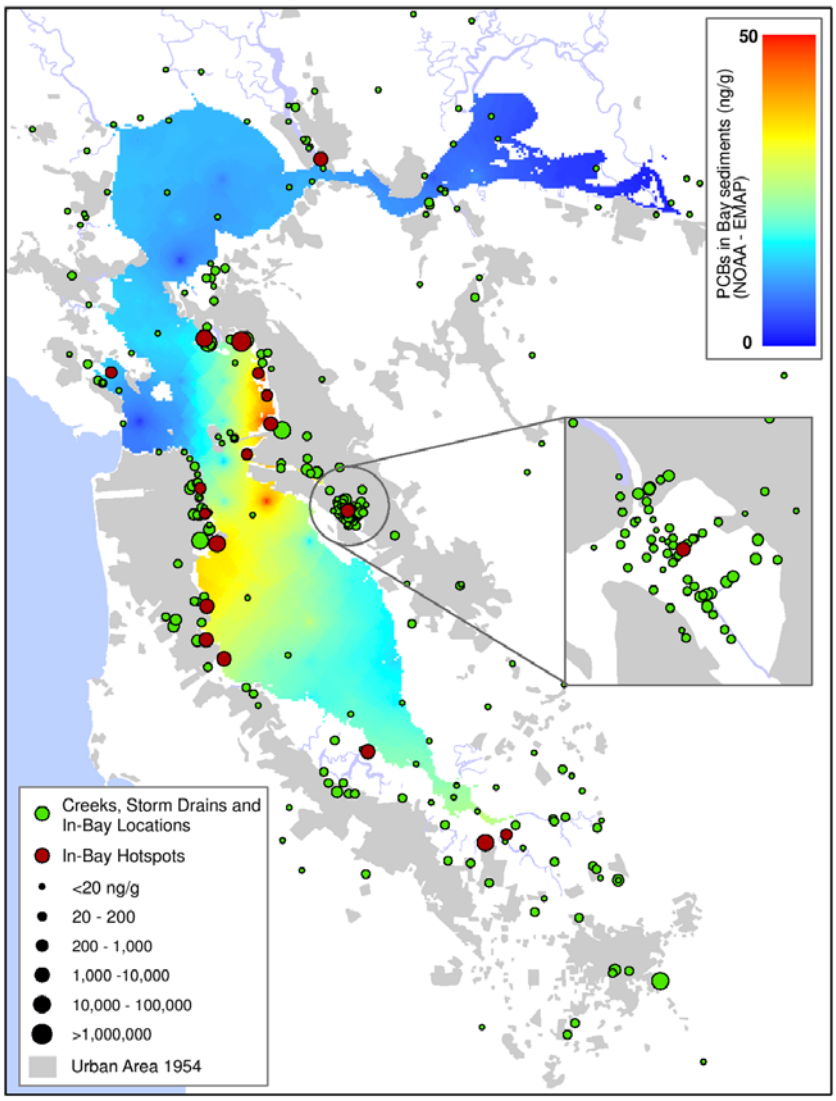


Figure 23-Overview of in-Bay and on-Land Sediment PCBs Concentrations

8. Numeric Target

A numeric target is a measurable condition that demonstrates attainment of water quality standards. A numeric target can be a numeric water quality objective, a numeric interpretation of a narrative objective, or a numeric measure of some other factor necessary to meet water quality standards. In this report, we propose a fish tissue PCBs numeric target.

The fish tissue numeric target provides for the attainment of the desired conditions that support the beneficial uses currently impaired. Fish tissue PCBs concentrations are the direct cause of impairment of beneficial uses. The CTR water quality criterion for PCBs is a surrogate measure of impairment as it is derived for the protection of human health based on the risk from eating fish caught in the Bay. This PCBs TMDL focuses on fish tissue PCBs concentrations, as this is the direct measurement of impairment of commercial (COMM) beneficial uses. We expect lower bioaccumulation will also protect estuarine (EST) and wildlife (RARE, WILD) beneficial uses. Fish tissue PCBs concentrations are currently being monitored as part of the RMP, and therefore progress towards attaining the fish tissue numeric target is directly monitored.

8.1 Fish Tissue Target

As noted above, fish tissue PCBs concentrations are the direct cause of impairment of beneficial uses. Therefore, the proposed numeric target for the PCBs TMDL is a fish tissue PCBs concentration. The proposed fish tissue numeric target for PCBs is based on a calculated screening level developed using standard protocol (USEPA, 2000c). The screening level is defined as concentrations of PCBs in fish above which there are potential health concerns. The screening level for PCBs is calculated using Equation 1 (Section 7.1).

We calculated the screening level for a risk of one extra cancer case for an exposed population of 100,000 over a 70-year lifetime, using a mean body weight of 70 kg, a slope factor of 2 $(mg/kg\text{-}day)^{-1}$, and a mean daily consumption rate of 0.032 kg/day. The consumption rate is the 95th percentile upper bound estimate of fish intake reported by all Bay fish-consuming anglers (SFEI, 2000a). The fish tissue screening level calculated based on these numbers is 10 ng/g. This represents about a ten-fold reduction in fish tissue PCBs concentrations from current levels. This numeric fish tissue target is applicable to fish collected in summer and fall seasons, when fish tissue concentrations are most elevated (Figure 8), in consideration of seasonality.

The screening value protective of Bay sport fish consumer is calculated using the upper 95th percentile consumption rate of all consumers, 32 g/day. All consumers reflect a subpopulation of Bay area residents that catch and consume sport fish which is a subset of the fisher category. The general population includes all Bay area residents, including those that do not catch or consume sport fish. As was discussed earlier about the derivation of the CTR criterion for PCBs, the water column criterion was not derived to protect subpopulations at the same risk level as the general population. We have therefore used a 10^{-5} risk level to derive the fish tissue numeric target of 0.010 mg/kg. This numeric target is also more protective than the 10^{-5} risk level since an upper bound consumption rate, rather than the mean, was used for this subpopulation. The numeric target is protective of those consuming ten times more fish, 320 g/day, at a 10^{-4} risk. This is a greater consumption rate than the maximum reported in the fish consumption study, based on a four-week recall. Finally, it is reasonable to assume that this numeric target is protective, at a 10^{-5} risk level, of the general population as only a small fraction of the overall population catch and consume fish in the Bay. Therefore, this fish tissue numeric target is protective of the general population and the most exposed population of the Bay area and is consistent with the CTR criterion. Attainment of the fish tissue target is consistent with the

narrative bioaccumulation water quality objective in the Basin Plan in that it results in removal of the detrimental effects of elevated PCBs in fish.

Attainment of the fish tissue numeric target is also consistent with the CTR criterion. Bioaccumulation factors (BAFs) are the ratios of a substance's concentration in tissue of an aquatic organism to its concentration in the ambient water ($BAF_{water}=C_{tissue}/C_{water}$), where both the organism and its food are exposed and the ratio does not change substantially over time, which seems applicable to the Bay. Once developed, BAFs can be used to either predict future fish tissue concentrations based on water concentrations or inversely water column concentrations using fish tissue concentrations. We have calculated BAFs for PCBs in the entire Bay as well as individual segments of the Bay using RMP fish tissue data collected in 1994, 1997 and 2000, and RMP water column data collected from 1993 through 2001 (Table 18-Bioaccumulation Factors and Estimated Water Column PCBs Concentrations upon Attainment of the Fish Tissue Target for White Croaker

). Using these BAF values, we calculated an expected concentration of PCBs in the water column when the fish tissue numeric target is met. The model calculations predict that the CTR water quality standard will be attained upon attainment of the fish tissue numeric target for PCBs.

The CTR numeric criterion is only a surrogate measure of conditions affecting fish tissue concentration. Site-specific conditions, such as water depth and magnitude of PCBs contamination of sediments, may affect fish tissue PCBs concentrations to a larger extent than water column PCBs concentrations. Measures to attain the PCBs fish tissue numeric target will focus on reductions of pollutant mass loads and contaminated site cleanups, rather than on avoidance of exceedances of concentration-based water quality standards. A decreased input of PCBs into the Bay will result in the reduction of PCBs concentrations in sediments and a decrease in PCBs available for uptake by biota.

Attainment of the fish tissue target for PCBs in San Francisco Bay will be evaluated using white croaker (size class, 20 to 30 centimeters in length) and shiner surfperch (size class, 10 to 15 centimeters in length). These two fish species are selected as the measure of attainment of the target for three reasons. First, these two fish species have the highest PCBs concentrations of all fish monitored in the Bay (Figure 6), which is expected as they are both benthic feeders. Second, they live near shore for at least part of the year and are caught from piers and jetties where recreational fishing is most likely to happen. Finally, the food model predicts that attainment of the fish tissue target for white croaker and shiner surfperch will result in attainment of the target for all other fish species currently monitored in the Bay. Comparison of the numeric target to these fish species constitutes an implicit margin of safety as sport fishers do not limit their fish consumption to these species (SFEI, 2000a). Rather, sport fishers consume a variety of fish species including many with lower PCB concentrations. Attainment of the fish tissue target in these two species ensures attainment of the fish tissue target for all Bay species sport fishers consume, and provides a implicit margin of safety as these other species consumed will have lower PCBs concentration than the fish tissue target.

The Water Board will continue to evaluate attainment of the fish tissue target and require the collection of additional information concerning Bay sport fish patterns of consumption and evaluate if fish species other than white croaker and shiner surfperch should be considered to evaluate attainment of the target. The average PCBs concentrations in the edible portion of these species will be used to determine attainment of the PCBs target following the methods

currently in use by the RMP to ensure consistency and data comparability. The number of fish samples collected to determine compliance with the target will be based on guidance described in USEPA's Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories (EPA 823-B-00-007) and will be based on the desired statistical power needed to demonstrate differences over time.

Attainment of the PCBs fish tissue numeric target is also expected to result in removal of impairment of the Bay by dioxin-like PCBs. In *Figure 24*, we show the regression of calculated TEQ from dioxin-like PCBs to that of total PCBs in fish tissue caught in the Bay. The regression shows that a decrease of fish tissue PCBs concentrations to the fish tissue numeric target of 10 ng/g will result in a decrease of TEQ to the TEQ screening level of 0.14 pg/g.

Table 18-Bioaccumulation Factors and Estimated Water Column PCBs Concentrations upon Attainment of the Fish Tissue Target for White Croaker

Waterbody	**White Croaker**		**Shiner Surfperch**	
	BAF[a]	**Water PCBs Concentration (pg/L)**	**BAF[a]**	**Water PCBs Concentration (pg/L)**
Entire Bay	0.224	49	0.160	69
Central Bay	0.572	19	0.424	26
North Bay	0.259	43	0.089	123
South Bay	0.498	22	0.090	122

a)BAFs were calculated from pg/L in water and ng/g wet weight in fish

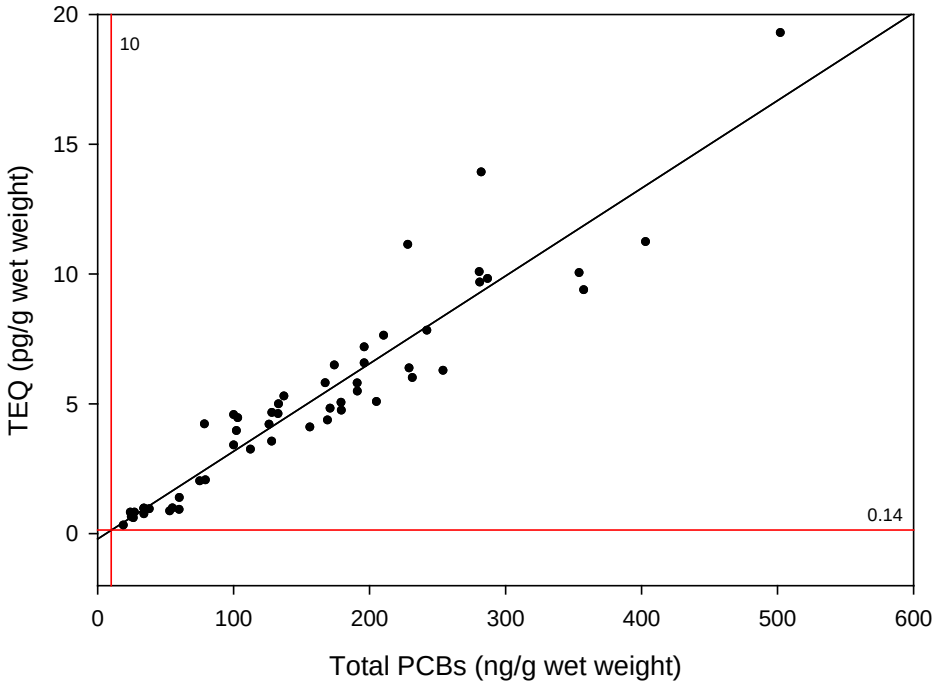


Figure 24-Regression of Dioxin-Like PCBs Total Equivalent Toxicity by Total PCBs Concentrations in Fish

8.2 Antidegradation

A numeric target must be consistent with antidegradation policies as described in 40 CFR 131.12 and SWRCB Resolution 68-16. Antidegradation policies are intended to protect beneficial uses by ensuring that water quality will be maintained at the highest levels.

The fish tissue numeric target is designed to implement the narrative water quality objective for bioaccumulation. This numeric target is intended to achieve beneficial uses of the Bay, specifically relating to the consumption of sport fish by humans. As such, it is consistent with the established numeric water quality criterion for total PCBs. Since PCBs concentrations in sediment and fish tissue currently exceed the narrative bioaccumulation objective, attaining the numeric target will improve current water quality conditions. Therefore, the numeric target is consistent with the antidegradation policies.

9. Linkage Analysis

The TMDL linkage analysis is used to connect PCBs loads to the numeric target protective of beneficial uses in the Bay. This linkage analysis can be accomplished in a variety of ways. One common approach has been to use numerical models. Water quality models for TMDL development are typically classified as either watershed (pollutant load) models or as waterbody (pollutant response) models (NRC, 2001). A watershed model relates pollutant loads to a waterbody as a function of land use and helps allocate the TMDL among sources. A waterbody model is used to predict pollutant concentrations and other responses in the waterbody as a function of the pollutant load. Other models are used to set numerical targets such as food-web models that link sources to biological receptors.

PCBs uptake by biota from sediment is well documented in the scientific literature. In a shallow bay with a large sediment PCBs reservoir, such as San Francisco Bay, this is the most important pathway for PCBs bioaccumulation in fish. Therefore, reducing PCBs concentrations in Bay sediments is the most effective means of reducing fish tissue PCBs concentrations. In this TMDL, we use a food web model to translate the fish tissue numeric target to a corresponding sediment concentration. We then use a waterbody (mass budget) model to predict the long-term fate of PCBs in the Bay and determine the external load of PCBs that will attain the sediment concentration goal resulting in attainment of the fish tissue numeric target.

The mass budget model and food web model represent the linkage between load reductions and attainment of the fish tissue numeric target, as well as between the cause of impairment and the sources of PCBs. Based on the insights provided by these two models, we first present a conceptual model of our understanding of PCBs fate and movement between environmental reservoirs (Figure 25). Figure 25 depicts the conceptual linkage between sources, reservoirs (compartments) and receptors. In this figure, we have used larger arrows and bold text to highlight the sources and processes that we consider important. The left side of Figure 25 represents the mass budget model providing the linkage between the sources, reservoirs and processes. The right side of the conceptual model highlights the food-web model providing the linkage between PCBs reservoirs and aquatic receptors. We consider urban stormwater runoff and releases from current or historical activities as the most significant sources of PCBs to the Bay. PCBs in Bay sediments are likely to function as the major source of PCBs to biota. We consider the major mechanism of PCBs uptake by fish to result from foraging on bottom dwelling organisms (benthic organisms) living in sediment.

9.1 Food Web Bioaccumulation Modeling

PCBs impairment of the Bay is related to PCBs fish tissue concentrations. In order to implement the most effective load reductions, it is critical to understand the important factors and sources causing PCBs bioaccumulation in fish. There are two general approaches for developing a linkage between PCBs concentrations in water, sediment and biota (USEPA, 2000c; USEPA, 2000d). First, there is an empirical approach where one generates data to calculate bioaccumulation factors (BAFs) and biota-sediment accumulation factors (BSAFs). BAFs are the ratios of a substance's concentration in aquatic organisms to ambient water concentrations, taking the organism's trophic level into consideration. BSAFs are the ratios of concentrations in aquatic organisms compared to sediment concentrations. The second approach is to develop an equilibrium or kinetic biological food web model that considers mechanistic aspects of bioaccumulation and describes the chemical reactions and physicochemical processes taking place. These two modeling approaches are complimentary as the empirical data can be used to verify, or calibrate, the food web model results.

SFEI has developed a food web model based on Gobas (1993) and Morrison et al. (1997). Bay-specific data have shown that the fish species of concern have a diet consisting mainly of benthic organisms (Roberts et al., 2002), suggesting the importance of sediment PCBs as a source of PCBs to fish. This model predicts that the most sensitive endpoint is the protection of human health from the consumption of white croaker, and that attainment of conditions that result the fish tissue numeric target will be protective of wildlife. The model mathematically links the concentrations of PCBs in aquatic organisms and their prey to water and sediment PCBs concentrations via the food web as depicted in Figure 26 (Gobas and Arnot, 2005). Using this model, we can associate a specific PCBs concentration in fish to that in sediment, the main compartment of PCBs in aquatic environments, and water. Starting with the numeric fish tissue target of 10 ng/g, the model yields a corresponding concentration of 1 µg/kg PCBs in sediment. This sediment PCBs concentration goal is lower than the sediment concentration deemed protective of wildlife of 160 µg/kg total PCBs (USEPA, 1997b), and is therefore considered to result in attainment of all beneficial uses currently impaired by PCBs. Model results validate the sediment PCBs concentration goal as protective of wildlife in San Francisco Bay. The food web model specifically predicts that this sediment goal will also be protective of risks to wildlife such as harbor seals, and birds such as cormorants and terns.

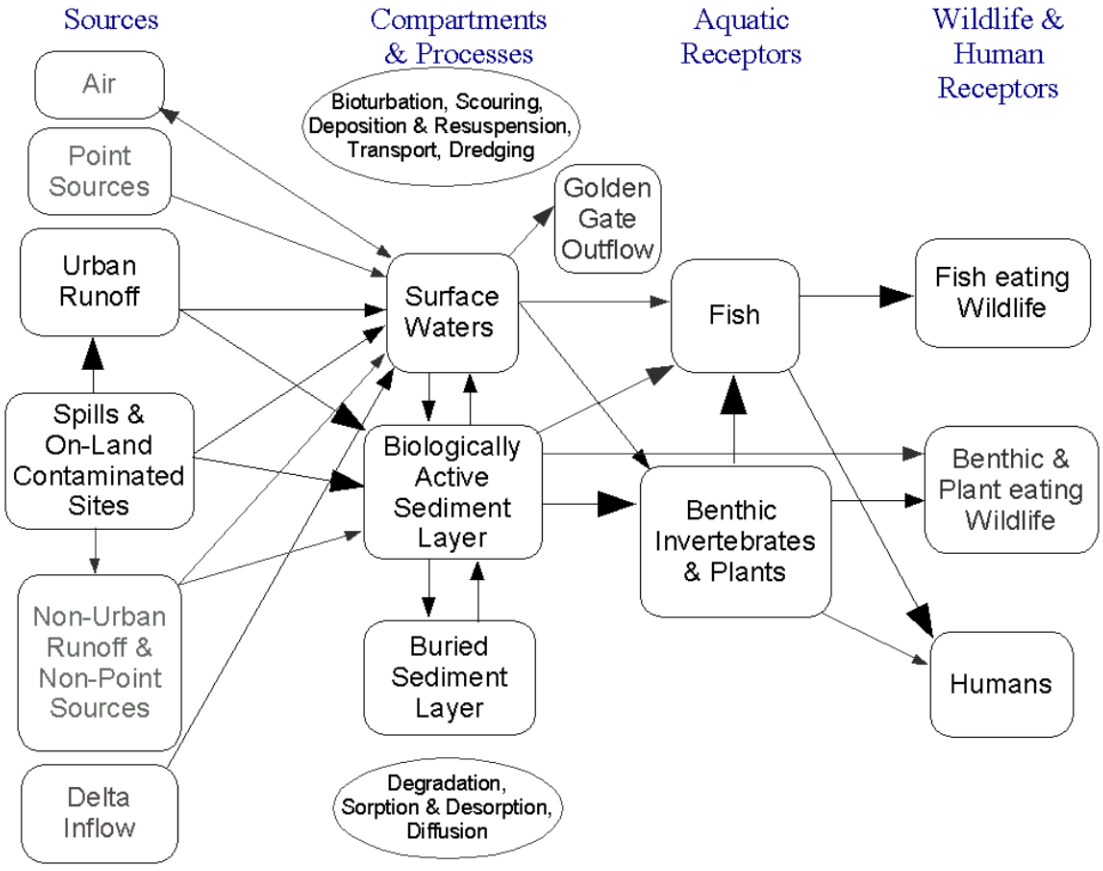


Figure 25-Conceptual Model of PCBs Movement and Fate in San Francisco Bay

This sediment goal is equivalent to reducing the total mass of PCBs in the active layer (of 0.15 m) of the entire Bay to about 160 kg. This represents a ten-fold decrease of PCBs concentrations in ambient sediments and fish tissue. The need to reduce ambient sediment PCBs concentrations by an order of magnitude to attain the 1 µg/kg sediment concentration goal is not unexpected. Empirical models such as biota-sediment accumulation factor (BSAF) are based on a one to one relationship between sediment and fish tissue PCBs concentrations. As discussed in Section 6.2, fish tissue concentrations are also an order of magnitude greater than the fish tissue numeric target for certain species. Hence the need for a ten-fold reduction in sediment to attain the fish tissue numeric target is not surprising. However, this sediment goal should not be interpreted as a clean-up goal, rather it is the long-term sediment PCBs concentration that will be attained after reduction of external loads, some targeted action on internal reservoirs of PCBs, and degradation or burial of PCBs in Bay sediments.

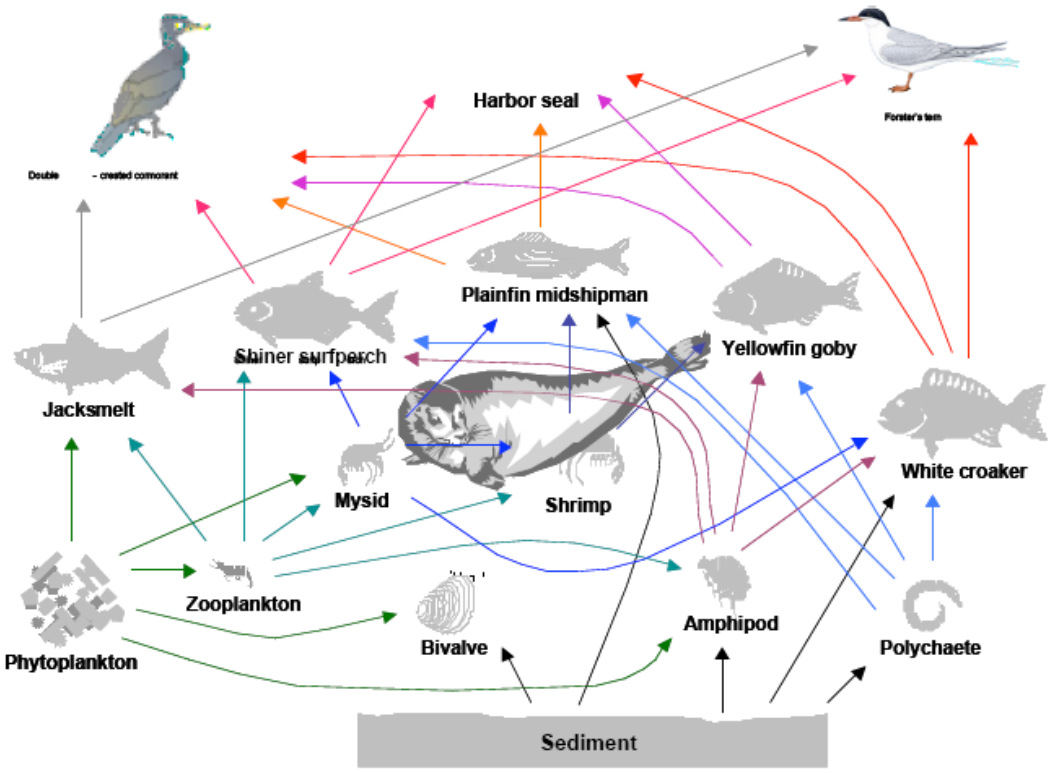


Figure 26-Food Web Model for San Francisco Bay (Gobas and Arnot, 2005)

9.2 Mass Budget Model

A mass budget model allows the exploration of different PCBs load reduction scenarios on the long-term fate of PCBs. SFEI developed a simple mass budget model for PCBs (Davis, 2003) that treats the Bay as a single box with two environmental reservoirs: water and sediment (Figure 27). This model includes eight processes of PCBs input and loss: burial in deep sediment, degradation, external loadings, outflow to the ocean, tidal mixing, exchange with the atmosphere, natural attenuation, and transfer between sediments and water.

Reduction of the external load to 10 kg/year is needed to attain a PCBs mass in the Bay of 160 kg that is equivalent to the PCBs sediment goal of 1 µg/kg. The mass budget model predicts that current external PCBs loads to the Bay of about 34 kg/year will delay the attainment of the 160 kg goal for 100 years (Figure 28). Reduction of current external loads to 20 kg/yr, results in a more rapid reduction of PCBs in the active layer, attaining the goal in about 70 years. An external load of 10 kg/yr attains the 160 kg mass in about 30 years. The mass budget model predictions highlight the importance of reducing current external loads of PCBs to the Bay. Achieving these load reductions, along with cleanup of in-Bay sediment PCB-contaminated sites, will form the core of the TMDL implementation strategy.

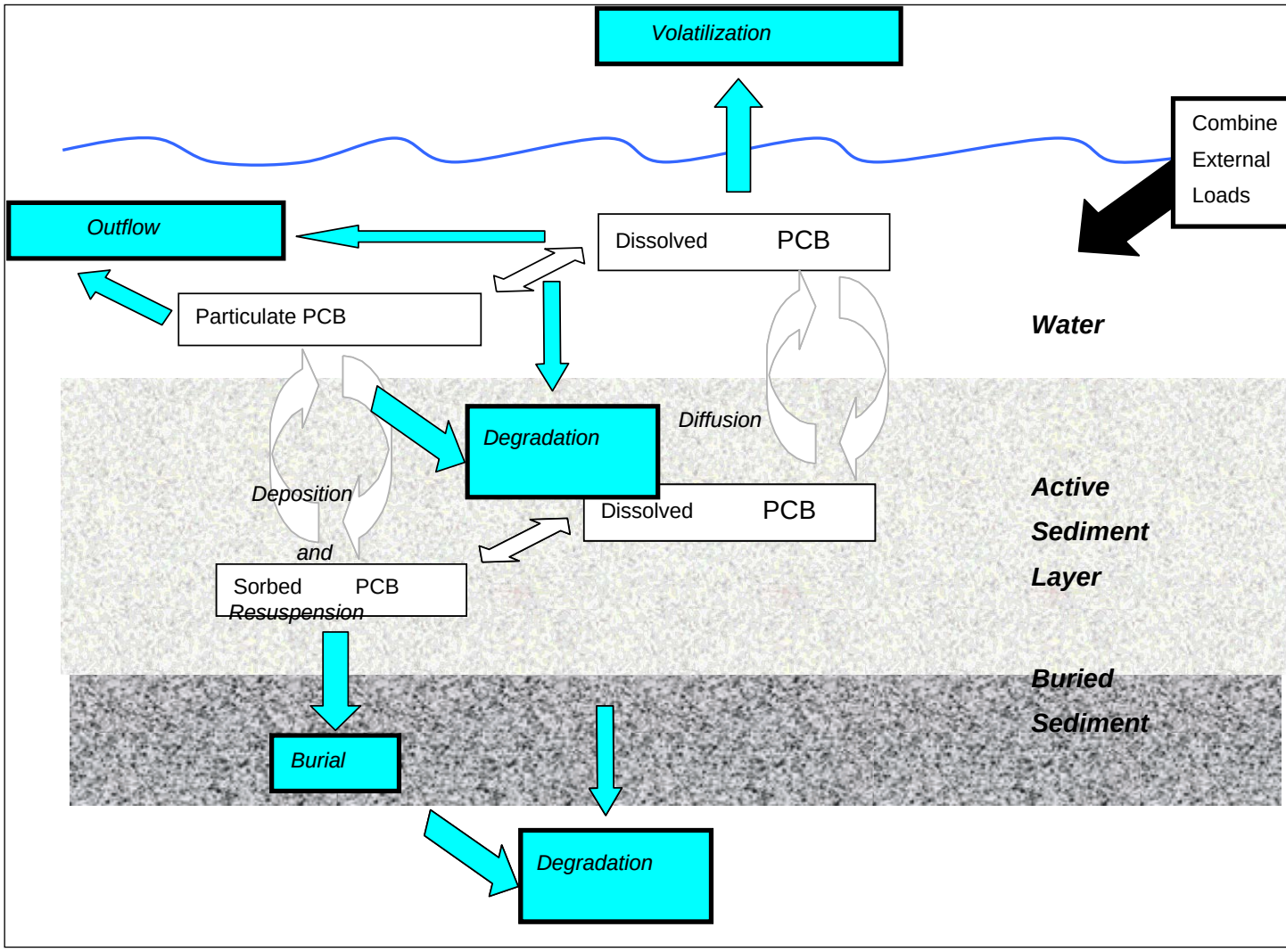


Figure 27-Mass Balance Model for PCBs in San Francisco Bay (Davis, 2003)

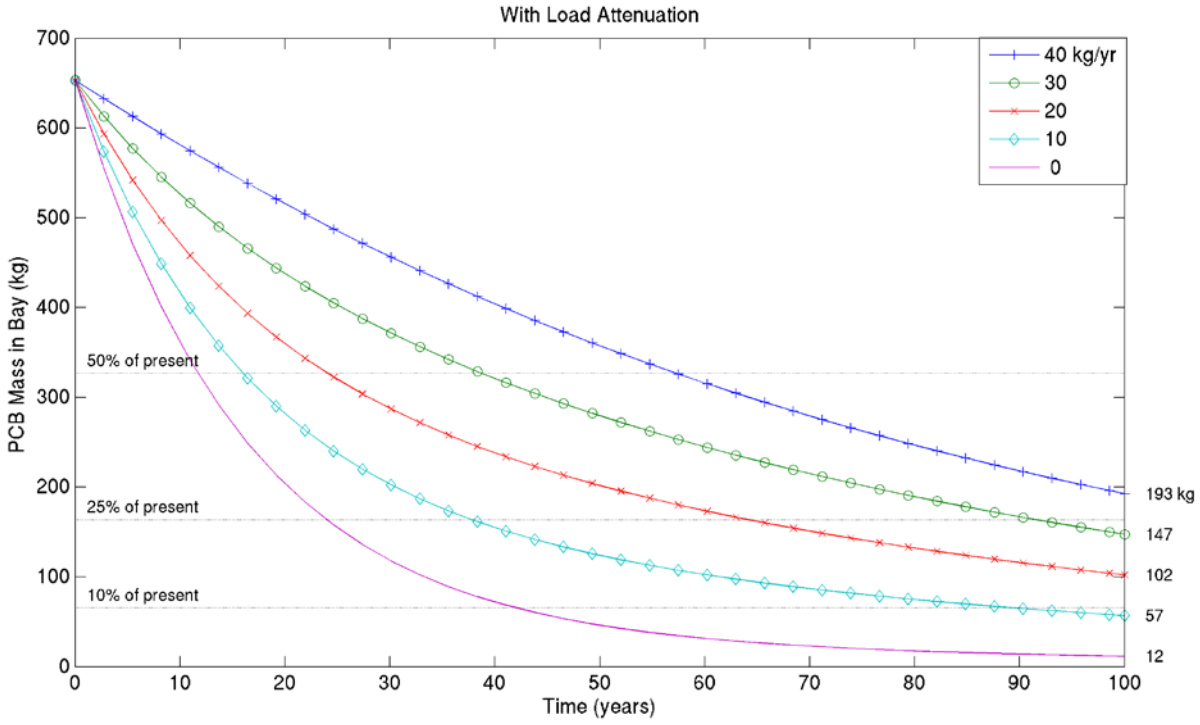


Figure 28-Predicted Long-Term Mass of PCBs in Active Sediment Layer under Different Loading Conditions (SFEI, 2007)

10. Total Maximum Daily Load and Allocations

The total maximum daily load (TMDL) is the maximum quantity of a pollutant that can enter a waterbody and attain water quality standards. The TMDL is allocated amongst the various sources of the pollutant.

10.1 Total Maximum Daily Load

The PCBs TMDL is 10 kg/yr and represents the assimilative capacity of the Bay. This TMDL necessitates achieving a load reduction of about 24 kg/yr to reduce total PCBs in the Bay active layer to 160 kg in about 30 years (Figure 28). This is equivalent to achieving the sediment PCBs concentration goal of 1 µg/kg, which will result in attainment of the fish tissue target of 10 µg/kg.

The TMDL is expressed as an average annual rather than as a daily load for several related reasons. First, the TMDL is derived from a mass budget model that depicts the long term (decadal) fate of PCBs. This model uses daily time steps derived by averaging annual load estimates, as the loadings data are not refined enough to provide discrete daily loads and therefore do not reflect variability in the data. Future data collection to verify attainment of the TMDL will also be collected on an annual timeframe, due to the large cost associated with these types of data. Therefore a TMDL is needed based on annual loads for comparison purposes. Also, the response of fish tissue PCBs concentrations to PCBs load reductions is not instantaneous. Even with immediate or rapid attainment of the sediment goal, there would be delay in attainment of the numeric fish tissue target, due to the time required for depuration (shedding from body) of PCBs by biota to occur. Finally, the TMDL is expressed as an average annual load because the natural variability in quantifying PCBs loads is much greater than the expected rate of load reductions. Long-term averaging of the loads is necessary to dampen out the variability in the data.

10.2 Categorical Load and Wasteload Allocations

We propose to allocate the TMDL (Figure 29, Table 19) among the existing external sources: direct atmospheric deposition, Central Valley watershed, wastewater dischargers, and urban and non-urban stormwater runoff. A portion of the TMDL is also allocated to potential future stormwater treatment by municipal wastewater dischargers. The linkage analysis shows that the fish tissue target can be achieved with reduction of external loads to the TMDL of 10 kg/yr. As such, internal sources are not assigned load allocations. However, reduction of internal loads will lead to an increased rate of recovery of beneficial uses. Sediment dredging and disposal, which results in an on-going net loss of PCBs from the Bay is expected to continue to decrease in-Bay disposal volumes and increase out-of-Bay disposal based on goals established in the "Long Term Management Strategy for the Placement of Dredged Material in The San Francisco Bay Region" (USACE, 1998). Therefore, sediment dredging is expected to continue to remove PCBs from the Bay. In addition, remediation of in-Bay contaminated sediment is expected to decrease potential loadings from this other internal source.

The following sections present the basis of the allocation for each source category.

10.3 Wasteload Allocations

Wasteload allocations apply to all NPDES permitted discharges to the Bay, including municipal and industrial wastewater dischargers, and municipal stormwater (urban and non-urban stormwater runoff) discharges.

Table 19-PCBs Load and Wasteload Allocations to San Francisco Bay

Source Category	Allocations
	Kilograms per year
Direct Atmospheric Deposition	0[a]
Central Valley Watershed	5
Municipal Wastewater Dischargers	2
Industrial Wastewater Dischargers	0.035
Stormwater Runoff	2
Reserved for stormwater treatment by municipal wastewater dischargers	1
Total	***10[b]***

[a] Zero allocation reflects overall net loss to the atmosphere
[b.] Total differs from column sum due to rounding.

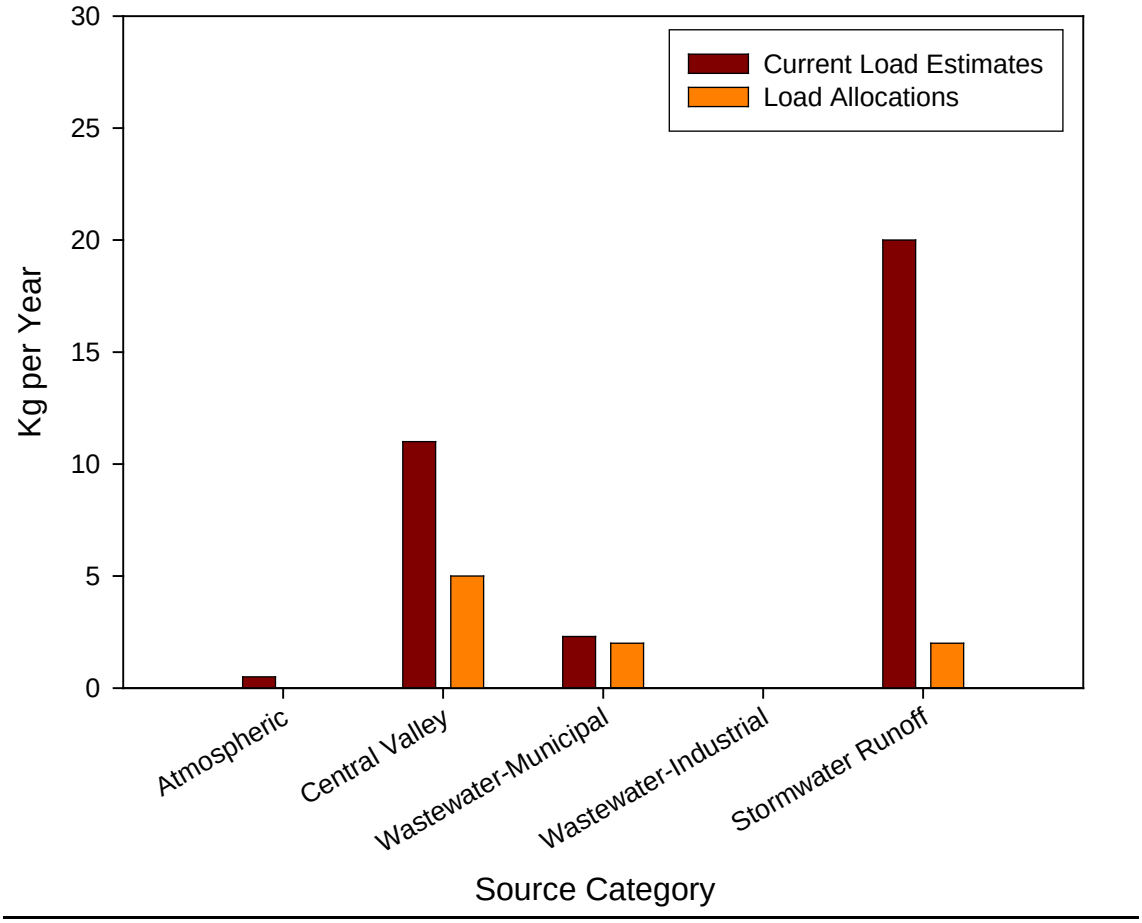


Figure 29-Loads and Allocations of PCBs to San Francisco Bay

Municipal and Industrial Wastewater Dischargers
Municipal and industrial wastewater NPDES permitted facilities discharge a small fraction of the total PCBs load to the Bay. In general, municipal and industrial wastewater dischargers operate at a high level of performance and remove PCBs via solids reduction treatment processes. The wasteload allocations for municipal wastewater dischargers total 2 kg/yr, which reflects the current estimated aggregate load to the nearest kg/yr. Although this is lower than our actual estimate of 2.3 kg/yr, it reflects the anticipated decreases in current loadings expected from implementation actions and degradation of PCBs in sources to wastewater systems. The wasteload allocations for industrial facilities total 0.035 kg/yr, which reflects estimated current loads.

Individual wasteload allocations are specified for each municipal and industrial wastewater dischargers in Table and Table 21, respectively. We have insufficient or no data to calculate wasteload allocations for individual facilities based on individual facility performance at this time. Therefore, individual load allocations are based on each facility's fraction of the total yearly wastewater discharged from this source category using average annual flow data from 1999 through 2002. The resulting individual wasteload allocations do not represent individual facility actual discharge performance and do not account for variability in discharge performance. As part of the adaptive implementation plan of this TMDL, we will use data generated through implementation of the TMDL to review and revise individual allocations for Water Board consideration that account for actual performance.

Stormwater Runoff
Existing PCBs loads from stormwater runoff are estimated at 20 kg/yr. The proposed total wasteload allocation for stormwater runoff is 2 kg/yr. It reflects the resulting PCBs load when all sediment in stormwater runoff has a concentration of 1 µg/kg, the sediment PCBs concentration goal, assuming the sediment loads used to calculate the current PCBs load do not change. Sediment load estimates vary from 870,000 tons (SFEI, 2007), 930,000 tons (Krone, 1979), to 1,500,000 tons (Schoellhamer et al., 2005). Due to the uncertainty in these estimates and until they are refined, we will use 2,000,000 tons as an upper bound estimate of maximum sediment yields from local tributaries to calculate the stormwater wasteload allocations, resulting in 2 kg/yr.

Individual county-based watershed wasteload allocations for stormwater runoff are presented in Table 22. This total wasteload allocation is based on the aggregate allocation of 2 kg/yr and the fraction of the Bay-side year 2000 population residing in each permitted entity (USCB, 2000). Wasteload allocations for stormwater runoff apply to all NPDES permitted municipal stormwater discharges (Table 22). These allocations apply to unincorporated areas and all municipalities in the county that drain to the Bay and are part of the San Francisco Bay Region. They implicitly include all current and future permitted discharges within the geographic boundaries of municipalities and unincorporated areas within each county. Examples of discharges include but are not limited to California Department of Transportation (Caltrans) roadways and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites. The San Francisco allocation does not account for treatment provided by San Francisco's combined sewer system. The wet weather treatment provided by the City and County of San Francisco's Southeast Plant (NPDES permit CA0037664) and the Northpoint Wet Weather Facility will be credited toward meeting the allocation.

Urban Stormwater Runoff Treatment by Municipal Wastewater Dischargers

A potential means to reduce urban stormwater runoff PCBs loads will be to strategically intercept and route runoff to municipal wastewater treatment systems. We propose a separate wasteload allocation for discharges associated with urban stormwater runoff treatment via municipal wastewater treatment systems, since such actions will result in increased PCBs loads from municipal wastewater dischargers, and the proposed individual wasteload allocations for municipal wastewater dischargers reflect current performance levels. We propose a wasteload allocation of 0.9 kg/yr, which is the difference between the TMDL of 10 kg/yr and the sum of the other proposed wasteload and load allocations.

Table 20-Individual Municipal Wastewater Wasteload Allocations

Permitted Entity	NPDES Permit	Allocations (kilograms / year)
American Canyon, City of	CA0038768	0.002
California Department of Parks and Recreation, Angel Island State Park	CA0037401	0.00003
Benicia, City of	CA0038091	0.009
Burlingame, City of	CA0037788	0.01
Calistoga, City of	CA0037966	0.002
Central Contra Costa Sanitary District	CA0037648	0.1
Central Marin Sanitation Agency	CA0038628	0.04
Delta Diablo Sanitation District	CA0038547	0.04
East Bay Dischargers Authority Dublin-San Ramon Services District (CA0037613) Hayward Shoreline Marsh (CA0037702) Livermore, City of (CA0038008) Union Sanitary District, Wet Weather (CA0038733)	CA0037869	0.3
East Bay Municipal Utilities District	CA0037702	0.3
East Brother Light Station	CA0038806	0.0003
Fairfield-Suisun Sewer District	CA0038024	0.05
Las Gallinas Valley Sanitary District	CA0037851	0.01
Marin County Sanitary District, Paradise Cove	CA0037427	0.00003
Marin County Sanitary District, Tiburon	CA0037753	0.002
Millbrae, City of	CA0037532	0.007
Mt. View Sanitary District	CA0037770	0.007
Napa Sanitation District	CA0037575	0.04
Novato Sanitary District	CA0037958	0.02
Palo Alto, City of	CA0037834	0.09
Petaluma, City of	CA0037810	0.02
Pinole, City of	CA0037796	0.009
Contra Costa County, Port Costa Wastewater Treatment Plant	CA0037885	0.0001
Rodeo Sanitary District	CA0037826	0.002
Saint Helena, City of	CA0038016	0.001
San Francisco, City and County of, San Francisco International Airport WQCP	CA0038318	0.002
San Francisco, City and County of, Southeast Plant	CA0037664	0.3
San Jose/Santa Clara WPCP	CA0037842	0.4
San Mateo, City of	CA0037541	0.04
Sausalito-Marin City Sanitary District	CA0038067	0.005
Seafirth Estates	CA0038893	0.00001
Sewerage Agency of Southern Marin	CA0037711	0.01

Permitted Entity	NPDES Permit	Allocations (kilograms / year)
Sonoma Valley County Sanitary District	CA0037800	0.01
South Bayside System Authority	CA0038369	0.06
South San Francisco/San Bruno WQCP	CA0038130	0.03
Sunnyvale, City of	CA0037621	0.05
US Naval Support Activity, Treasure Island WWTP	CA0110116	0.002
Vallejo Sanitation & Flood Control District	CA0037699	0.05
West County Agency, Combined Outfall	CA0038539	0.05
Yountville, Town of	CA0038121	0.001
Totals		***2[a]***

[a] Total differs from column sum due to rounding.

Table 21-Individual Industrial Wasteload Allocations to San Francisco Bay

Permitted Entity	NPDES Permit	Allocations [a] (kilograms / year)
C&H Sugar and Crockett Community Services District	CA0005240	0.00006
Chevron Products Company	CA0005134	0.003
ConocoPhillips	CA0005053	0.0006
Crockett Cogeneration LP, and Pacific Crockett Energy, Inc.	CA0029904	0.0006
General Chemical	CA0004979	0.0009
GWF Power Systems, Site I	CA0029106	0.0001
GWF Power Systems, Site V	CA0029122	0.0001
Hanson Aggregates, Amador Street	CA0030139	0.00003
Hanson Aggregates, Olin Jones Dredge Spoils Disposal	CA0028321	0.00003
Hanson Aggregates, Tidewater Ave. Oakland	CA0030147	0.00003
Morton Salt	CA0005185	0.00008
Pacific Gas and Electric, East Shell Pond	CA0030082	0.00003
Rhodia, Inc.	CA0006165	0.0003
San Francisco, City and Co., SF International Airport Industrial WTP	CA0028070	0.002
Shell Oil Products US and Equilon Enterprises LLC	CA0005789	0.002
Mirant Delta LLC, Pittsburg Power Plant	CA0004880	0.0008
Mirant Potrero LLC, Potrero Power Plant	CA0005657	0.0003
Tesero Refining & Marketing Company	CA0004961	0.002
The Dow Chemical Company	CA0004910	0.0006
USS-Posco	CA0005002	0.02
Valero Refining Company	CA0005550	0.0007
Total		***0.035[b]***

a) Wasteload allocations for industrial wastewater dischargers do not include mass from once-through cooling waters. The Water Board will apply intake credits for once through cooling as allowed by law.
b) Total differs from column sum due to rounding.

10.4 Load Allocations

In this section, we present the load allocations for nonpoint source discharges of PCBs including direct atmospheric deposition and the Central Valley watershed Allocations focus on controllable loads of PCBs. Assessment of PCBs load reductions from sources considered uncontrollable will continue as part of the implementation of the TMDL.

Direct Atmospheric Deposition

PCBs freely exchange between the Bay and the atmosphere through both deposition and volatilization. Currently, PCBs escape to the atmosphere from the Bay at a greater rate than they are deposited from the atmosphere, resulting in a net loss of PCBs. As such, the proposed allocation to direct atmospheric deposition is zero. This load allocation is limited to PCBs that deposit directly into the Bay. Atmospheric PCBs deposited in the watershed, and indirectly washed into the Bay with runoff are not included in this source category. However, the PCBs concentrations in non-urban stormwater conveyances from open space areas are low and include indirect loads from atmospheric deposition onto the landscape (KLI, 2002). Therefore, the indirect load from atmospheric deposition in commercial and industrial areas is also estimated to be small, contributing minimally to stormwater runoff discharges.

Table 22 - County-Based Watershed Wasteload Allocations for Stormwater Runoff

County	Population	Allocations (kilograms / year)
Alameda	1,440,000	0.5
Contra Costa	790,000	0.3
Marin	240,000	0.1
Napa	120,000	0.05
San Francisco	630,000	0.2
San Mateo	600,000	0.2
Santa Clara	1,600,000	0.5
Solano	290,000	0.1
Sonoma	110,000	0.05
Total		***2***

Central Valley Watershed

PCBs loads from the Sacramento and San Joaquin Rivers are significant. However, this load results from the large volume of sediments carried into the Bay at low sediment PCBs concentrations, although the sediment PCBs concentrations are generally greater than the sediment PCBs goal. Current estimates of sediment loads to the Bay are around 1.2 millions tons (Leatherbarrow et al, 2005; Schoellhammer et al., 2005). If all of this sediment from the Central Valley had a concentration equal to the sediment goal, the resulting PCBs loads from the Central Valley would be 1.2 kg/y. However, based on natural attenuation with a half life of 56 years (Davis, 2003), loads will not be reduced to this level in the next 100 years (Figure 30). However, natural attenuation will lower the Central Valley load to 5 kg/yr in about 40 years. As this load reduction will result in attainment of the TMDL, we propose using 5 kg/yr as the load allocation to the Central Valley watershed.

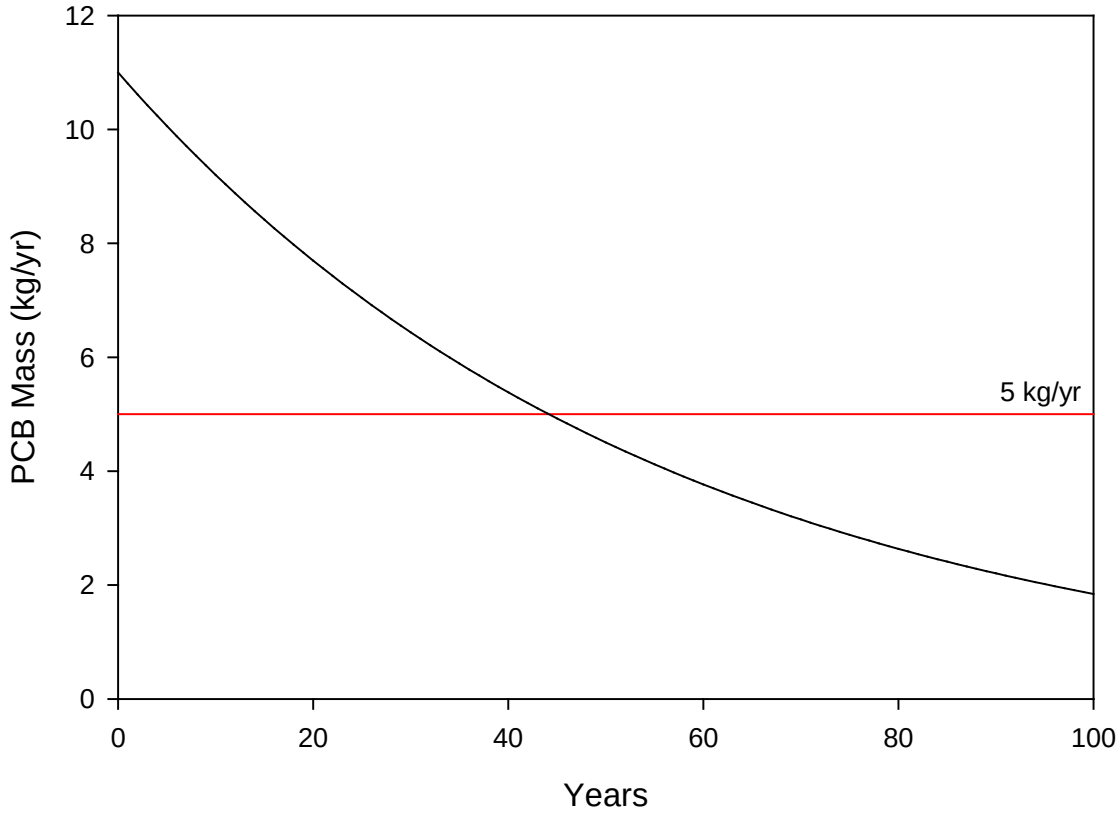


Figure 30-Natural Attenuation of Central Valley PCB Loads

10.5 Margin of Safety and Seasonality

A margin of safety needs to be incorporated into the TMDL to account for uncertainty in understanding the relationship between pollutant discharges and water quality impacts (USEPA, 1991). The margin of safety can be incorporated in the TMDL either explicitly or implicitly (USEPA, 2000a). Making and documenting conservative assumptions used in the TMDL analysis provides an implicit margin of safety. The purpose of the margin of safety is to ensure, given the uncertainties in developing the TMDL, that the beneficial uses currently impaired are restored.

For the PCBs TMDL, we are incorporating an implicit margin of safety. We have used a conservative approach to derive the fish tissue numeric target. We used a high-end value, the 95th percentile consumption rate, rather than the average consumption rate allowed by USEPA (2000c). Therefore, the fish tissue numeric target proposed in this TMDL is as protective as possible following USEPA methodology and should provide additional protection to human health from fish consumption. In addition, the wasteload allocation reserved for urban stormwater runoff treatment via municipal wastewater treatment systems is not expected to be fully utilized for several years. In the meantime, we intend to regularly review the effectiveness of implementation actions in meeting the numeric target and revise, as necessary, the proposed load and wasteload allocations. We also propose to monitor attainment of the numeric target

and to reevaluate the appropriateness of the currently proposed fish tissue numeric target and associated total PCBs sediment concentration goal.

Seasonal variation also needs to be considered when developing a TMDL. As was discussed in Section 6.2, PCBs concentrations in white croaker tissue collected in the Oakland Inner Harbor showed a seasonal trend with higher concentrations in summer and fall, and lower concentrations in winter and spring. This trend does not correlate with the expected higher total loading of PCBs to the Bay during the winter associated with stormwater and Central Valley runoff. We account for this seasonal trend by applying the fish tissue target to fish collected in the summer. In this manner, attainment of the fish tissue numeric target in the season when fish are most impacted will also be protective at other times of the year.

11. Implementation

Success of the PCBs TMDL requires an adaptive management approach to implementation actions. Adaptive implementation is a cyclical process in which TMDL plans and actions are regularly assessed for their achievement of water quality standards (NRC, 2001). Adaptive implementation simultaneously makes progress toward achieving water quality standards through implementing actions while relying on monitoring and experimentation to reduce uncertainty and refine future implementation actions.

The adaptive implementation process consists of the development of a plan that includes early implementation actions based on existing knowledge that have a reasonable probability of success and an overview of options for future actions. For PCBs in the Bay, the immediate or early implementation actions are not expected to completely eliminate the Bay impairment. Therefore, future actions must be evaluated based on continued monitoring and response to the early implementation actions, as well as based on well-designed studies used for model refinement.

This implementation plan includes three general implementation categories: control of external loadings of PCBs to the Bay, control of internal sources of PCBs within the Bay, and actions to manage risks to Bay fish consumers. In addition, the monitoring section describes monitoring required to measure attainment of the numeric target, water quality objectives and to measure implementation progress towards attainment of the load and wasteload allocations. The adaptive implementation section describes the method and schedule for evaluating and adapting the TMDL and implementation plan as needed to assure water quality standards are attained based on new information, studies to fill information gaps, and tracking and evaluation of actions.

11.1. External Sources

The following sections outline the proposed approach to adaptive implementation for mass reductions of PCBs loads from external sources.

Direct Atmospheric Deposition

There is a net removal of PCBs from the Bay through the atmosphere and consequent air-borne transport. No foreseeable actions can be taken to accelerate this loss of PCBs from the Bay. In the long-term, this loss will diminish as PCBs mass in the Bay is reduced and the numeric target is attained. A reevaluation of PCBs input and loss from the atmosphere may be needed in the future as part of reevaluation of the long term fate and transport of PCBs in the Bay, or if current implementation actions do not cause a rapid enough trend towards attainment of the target.

Central Valley Watershed

Sediments entering the Bay from the Central Valley have lower PCBs concentrations than in-Bay sediment, and major PCBs mass loading events that occur during episodic high flow events mostly flow directly out of the Bay through the Golden Gate. There are very limited locations with PCBs impairment of waters within the Central Valley watershed. The allocation will be attained through anticipated natural attenuation of PCBs in the Central Valley watershed. Verification of ongoing loads and load reductions will be a regular component of the Regional Monitoring Program.

Municipal and Industrial Wastewater Dischargers

Wasteload allocations for municipal and industrial wastewater discharges reflect current PCBs loads. Loads are expected to diminish as sources of PCBs to wastewater treatment systems diminish over time. Wasteload allocations will be implemented through NPDES permits that require implementation of best management practices (BMPs) to maintain optimum treatment performance for solids removal and to identify and manage controllable sources. Developing effluent limits for PCBs that accurately reflect treatment system performance require a substantial data set that accounts for system variability of a difficult to measure pollutant that is present at very low levels (See Section 5.2). The primary PCBs treatment mechanism is solids removal, and as such, ongoing attainment of suspended solids effluent limits provides a surrogate indicator of PCBs control. In addition to maintaining optimum solids removal performance, wastewater dischargers should evaluate whether there are any controllable sources of PCBs to their systems (e.g., industrial uses of equipment that contain PCBs).

Effluent limits in NPDES permits will be based on current performance; however, it's not feasible to calculate such limits as this time. The wasteload allocations were derived from a limited data set used to estimate the total PCBs annual load to San Francisco Bay from all wastewater discharges. The data set was limited due to the technical difficulty and associated costs of measuring very low concentrations of PCBs in wastewater. Furthermore, the individual allocations, which were based on each facility's fraction of the total yearly wastewater discharged to the Bay, do not represent actual performance of individual dischargers. Consequently, implementation of the individual wasteload allocations as effluent limits is not feasible at this time. NPDES permits will require individual facility's to collect data in order to calculate daily or monthly average effluent limits that are consistent with the annual load allocations, and possibly recalculation of individual wasteload allocations based on these data. However, calculation of these limits is not feasible at this time. Implementation of the wasteload allocations is further complicated by the lack of a low-detection level analytical method that can be used for compliance determinations. The level of quantification achievable with the regulatory analytical methods promulgated under 40 CFR 136 (US EPA Method 608) is 0.5 µg/L. Accordingly, compliance with effluent limits in NPDES permits will be determined using this approved method.

NPDES permits will require quantification of PCBs loads using a lower detection level method such as Method 1668A. This method was used to derive the loading estimates that are the basis of the allocations. However, as noted above, there are technical difficulties and high analytical costs ($1,000 to $1,200 per sample) associated with measuring very low concentrations of PCBs in wastewater. Another complication is that the daily, monthly, and even annual variability of PCBs in wastewater is unknown. Consequently, calculation of limits that account for variability may require several years of data. Also, if individual performance data result in effluent limits that are not consistent with individual wasteload allocations established with this TMDL, then the Water Board will take action to revise the individual allocations as part of the adaptive implementation plan.

We also propose a separate wasteload allocation for discharges associated with urban stormwater runoff treatment via municipal wastewater treatment systems. This allocation will be implemented through a permit that will allow municipal wastewater dischargers to apply for a portion of this reserved allocation. Although we recognize that the capacity and opportunity for existing systems to receive stormwater runoff may be limited, we expect that there will be strategic opportunities to do so.

In addition to controlling PCBs sources and discharges, municipal and industrial wastewater dischargers will be required to support actions to manage the health risks associated with the consumption of PCBs-contaminated Bay fish by people that recreationally fish, and to conduct or cause to be conducted monitoring, and studies to fill critical data needs identified in the Adaptive Implementation section.

Stormwater Runoff

The stormwater runoff wasteload allocations shown in Table 22 will be implemented through NPDES stormwater permits issued to urban runoff management agencies. The stormwater runoff allocations implicitly include all current and future permitted discharges, not otherwise addressed by another allocation, and unpermitted discharges within the geographic boundaries of urban runoff management agencies including, but not limited to, California Department of Transportation (Caltrans) roadway and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.

Substantial load reductions are required to attain wasteload allocations. In addition to reductions due to natural attenuation, urban runoff management agencies can reduce PCBs loads by preventing PCBs sources from contaminating sediment or by reducing the amount of contaminated sediment discharged to the bay. Urban runoff management agencies can prevent contamination through various source control and pollution prevention activities, including remediation of on-land PCBs contaminated soils and control of releases of PCBs from electrical or other equipment, building materials and waste during demolition/remodeling, or other sources. In addition, urban stormwater PCBs loads can be reduced through capture, detention, and removal of highly contaminated sediment, and possibly by urban storm water treatment, including routing of PCBs contaminated runoff to wastewater treatment systems. Substantial infrastructure improvements are expected to result from implementation of construction and new development runoff permit requirements. These requirements, which promote controls such as planting vegetative buffers around impervious surfaces, may effectively control urban sediment discharges. Many of these actions also have the potential benefit of reducing other particle-associated pollutant loads in addition to PCBs.

Remediation of on-land PCBs-contaminated soils and effective PCBs prevention or removal infrastructure improvements will take several years to pilot test, evaluate, and then plan, design and implement on a scale sufficient to substantially reduce PCBs loads. As such, we propose a 20-year schedule for attaining the wasteload allocations. Requirements in each NPDES permit issued or reissued and applicable for the five-year term of the permit will be based on an updated assessment of best management practices, and control measures intended to reduce PCBs in urban runoff to the maximum extent practicable. This is consistent with the Water Board's phased approach towards attainment of water quality objectives in waters that receive stormwater discharges from urban areas described in Section 4.8 of the Basin Plan.

There are already efforts underway to gain insights regarding opportunities for load reductions. NPDES permit requirements will call for progressive implementation of PCBs control measures. Specific best management practices (BMPs) and control measures to be considered include:

- Abatement of PCBs in runoff from areas with elevated PCBs in soils/sediments
    - Investigate on-land PCBs contaminated soils and/or sediments – PCBs are a known historical contaminant in soils and sediments throughout the region, both in private and public properties, and public rights-of-ways. Although many contaminated sites have undergone remediation, it is likely that PCBs contaminated sites remain and continue to

contribute PCBs to stormwater. Stormwater runoff management agencies are expected to conduct, or cause to be conducted by other agencies or responsible parties, identification of on-land sites with PCBs contamination, such as private properties, public rights-of-ways, and stormwater conveyances. Stormwater runoff management agencies would be expected to report investigation results, including identifying potentially contaminated properties and/or responsible parties to the Waterboard and/or DTSC, and/or in some instances to local agencies with authority to conduct oversight of hazardous materials. The Waterboard, DTSC, or local agency would be expected to follow up on further investigation and oversee any necessary abatement.

- Improve system design, operation, and maintenance to increase fine sediment– PCBs are mainly transported within the stormwater conveyances attached to sediments. Many routine maintenance BMPs exist and are currently in use to control the discharge of sediments to the Bay from urban stormwater runoff, such as storm drain inlets, detention basins and street sweeping. Urban runoff management agencies are expected to implement increased routine sediment control measures within the stormwater conveyances in locations that will result in increased reduction of PCBs loads.
- Strategic runoff treatment retrofits – There are many sediment control BMPs, such as sand (or other media) filtration devices or multi-chamber treatment trains, that have not been evaluated or implemented for their ability to reduce PCBs loads in urban environments. As such, urban runoff management agencies are expected to investigate and implement as necessary new sediment treatment control measures within stormwater conveyances.
- Urban stormwater runoff treatment via municipal wastewater treatment systems – Opportunities to route dry weather and/or wet weather flows from storm drain systems to wastewater systems should be investigated, pilot tested, and implemented where feasible. This includes consideration of dry weather flows, including possible street washing flows, and wet weather flows, particularly first flush flows.

- Abatement of PCBs in runoff from all areas
  - Control/oversee removal and disposal of PCBs-containing equipment – PCBs-containing equipment remains in use with varying degrees of regulatory oversight depending on equipment type and PCBs concentration. Containment of the PCBs varies depending on equipment uses and regulatory oversight. These materials may therefore be released to the environment and enter stormwater conveyances. As such, urban runoff management agencies are expected to conduct industrial inspections to identify and cause replacement of PCBs-containing equipment remaining in the urban environment.
  - Control/manage removal and disposal of PCBs from building materials and waste during demolition/remodeling – PCBs-containing building materials remain in use with little regulatory oversight. With aging, or construction or demolition activities, these materials may be released to the environment and enter stormwater conveyances. As such, urban runoff management agencies are expected to conduct or cause to be conducted a program to manage PCBs in building materials through their inspection programs.

These BMPs and control measures are expected to be implemented in phases as NPDES permits are issued and reissued. In the first five-year permit term, stormwater permittees will be required to implement control measures on a pilot scale to determine their effectiveness and technical feasibility. Permit requirements will include the following:

- Ensure that industrial inspectors can identify PCBs or PCB-containing equipment during inspections.
- Conduct pilot studies to evaluate the presence of PCBs in building materials (e.g. caulks and adhesives) and develop BMPs to prevent PCBs from being released into the environment during building demolition and renovation.
- Conduct pilot studies to develop and implement best management practices (BMPs) and control measures where areas where elevated PCBs are detected in storm drain sediments, e.g., street cleaning, on-site treatment, investigate on land PCBs-contaminated soils and/or sediments and diversion of stormwater for treatment by wastewater treatment facilities.
- Evaluate the effectiveness of the BMPs and control measures and any environmental impacts associated with their implementation as part of the pilot studies.

The second five-year term permit requirements will be based on the knowledge gained during the first permit term and will call for strategic implementation of the BMPs and control measures identified as effective and that will not cause significant adverse environmental impacts based on the pilot studies conducted during the first permit term. The second term permit will also require development of a plan to fully implement control measures that will result in attainment of allocations, including an analysis of costs, efficiency of control measures and an identification of any significant environmental impacts.

Subsequent permits will include requirements and a schedule to implement technically feasible, effective and cost efficient control measures to attain allocations. If as a consequence, allocations cannot be attained, the Water Board will take action to review and revise the allocations and these implementation requirements as part of adaptive implementation.

In addition to controlling PCBs sources and discharges, urban stormwater management agencies will be required to develop and implement a monitoring system to quantify PCBs loads and the loads reduced through treatment, source control and other actions. The current limited monitoring of PCBs loads from local tributaries by the RMP is not sufficient to quantify PCBs loads from urban stormwater runoff and the loads reduced from urban stormwater runoff control actions. The Water Board will encourage and accept a region-wide design via augmentation of the current RMP as a means of developing and implementing the required PCBs loads monitoring.

Urban stormwater management agencies will also be required to support actions to manage the health risks of consuming PCBs-contaminated Bay fish; and conduct or cause to be conducted monitoring, and studies to fill critical data needs identified in the Adaptive Implementation section.

Urban runoff management agencies have a responsibility to oversee various discharges within the agencies' geographic boundaries. However, if it is determined that a source is substantially contributing to PCBs loads to the Bay or is outside the jurisdiction or authority of an agency the Water Board will consider a request from an urban runoff management agency which may include an allocation, load reduction, and/or other regulatory requirements for the source in question.

Urban Stormwater Runoff Treatment by Municipal Wastewater Dischargers
Routing of urban stormwater runoff through municipal wastewater treatment facilities is a means of reducing PCBs, and other particle-associated pollutant loads to the Bay. The wasteload allocation for stormwater runoff treatment via municipal wastewater treatment systems provides an incentive to implement this control measure. As described previously, proposed

implementation requirements for municipal wastewater and urban stormwater runoff discharges include investigating the feasibility and PCB-removal efficiency of intercepting and routing and treating urban stormwater runoff via wastewater treatment systems, and implementing this control measure where feasible.

A wastewater discharger that accepts urban stormwater runoff will be provided an augmentation of its individual wasteload allocation that accounts for the resulting load increase. The Water Board will consider either amending individual NPDES permits or adopting a separate NPDES permit as an implementing mechanism for this wasteload allocation that would allow wastewater dischargers opportunity to apply for a portion of this wasteload allocation to account for an increase in load associated with treating urban stormwater runoff.

11.2. Internal Sources

Internal sources of PCBs have not been allocated a load. However, we expect reductions in the mass of PCBs from these source categories based on sediment removal activities or other treatment controls. Reduction of the in-Bay PCBs mass will help accelerate the recovery of the Bay from its current impairment, by driving the overall sediment PCBs concentration towards the sediment concentration goal of 1 µg/kg.

The following sections outline the proposed adaptive implementation approach to control internal sources of PCBs.

In-Bay PCB-Contaminated Sites

A number of former and current on-shore industrial and military facilities, and associated PCBs-contaminated in-Bay sediments, exist throughout the Bay. Data are not available for every site to determine whether it is currently discharging to the Bay or contributing significantly to the impairment of the Bay. The State Board adopted a statewide Consolidated Cleanup Plan (Water Code Section 13394) in 2004. Some of the sites listed in Table 12 of this report are identified in the Statewide Consolidated Cleanup Plan. While past and/or current loads of PCBs from these sites to the Bay are difficult to quantify, potentially bioavailable PCBs in off-shore sediments pose a threat to human health and the environment. As such, cleanup of these sites is a Water Board priority and many cleanups are underway. The Water Board will maintain an inventory of contaminated sites (see Table 12) and continue to set priorities for investigating and remediating the sites. Prioritization of contaminated sites may result in identifying sites where additional information is needed to determine future actions, as well as sites where sufficient information is available to determine the need for no further actions. Our initial screening focused on identification of in-Bay sites where sediment PCBs concentrations exceeded 180 ug/kg (Table 23). The Water Board will coordinate clean-up actions with U.S. EPA and the Department of Toxic Substances Control, and issue clean-up orders as necessary. Table 23 provides the status of cleanup at these sites.

The proposed approach to cleanup PCBs contaminated sites is consistent with existing efforts. This TMDL will not result in new requirements for selecting site clean-up levels and remedial options. Rather, setting of clean-up levels at contaminated sites will continue to follow current guidance (e.g. DTSC, 1996; USEPA, 1997c; USEPA, 1998) and continue to be derived on a site- specific basis. The sediment goal derived in this TMDL is not a de facto clean-up level for contaminated sites not should it be interpreted as an applicable or relevant and appropriate requirement (ARAR), or a to be determined (tbd) ARAR, rather it represents the desired conditions that when achieved throughout the Bay will result in attainment of beneficial uses of the Bay.

Table 23- In-Bay PCBs Contaminated Sites

In-Bay contaminated site remediation	Lead Agency	Status
Work Completed		
Emeryville Crescent	Water Board	Completed
Oyster Point/Shearwater (20,100 cyds removed)	Water Board	Completed
Peyton Slough	Water Board	Completed
Redwood City Harbor	USACE	Completed
Former Hamilton Army Airbase – Coastal Salt Marsh	Water Board	Completed
Work In Progress		
Yosemite Slough Channel	Water Board	Site Investigation
Alameda Naval Air Station Seaplane Lagoon	U.S. EPA	Record of Decision
Hunter's Point Shipyard	U.S. EPA	Feasibility Study in preparation
Moffett Field/NASA Ames-Site 25	U.S. EPA	Feasibility Study in review
Oakland Army Base	DTSC	
Richmond Harbor/Potrero Point	DTSC	
Stege Marsh	DTSC	PCBs Interim Removal Action completed under Water Board lead
Work Not Started		
Cerrito Creek		
Cordonices Creek		
Guadalupe Slough		
Mission Creek		
Oakland Harbor		
Richardson Bay		
San Francisco Airport		
San Leandro Bay		
Vallejo Ferry Terminal		

Contaminated site investigations and evaluation of remedial activities will occur due to existing regulations whether or not called for in this TMDL. Parties responsible for PCBs contaminated sediment sites will continue to be required to gather the following information:

1. Estimate the pre-cleanup and post-cleanup vertical and lateral extent of PCBs in Bay sediments;
2. Estimate the pre-cleanup and post-cleanup mass of PCBs in Bay sediments;
3. Quantify rate(s) of sediment accretion, erosion or natural attenuation;
4. Implement on-land source control measures, if necessary, to ensure that on-land sources of PCBs do not further contaminate in-Bay sediments;
5. Evaluate, post-cleanup, the residual risks to humans and wildlife;
6. Support actions to reduce the health risks of people who consume PCBs-contaminated San Francisco Bay fish;
7. Conduct or cause to be conducted studies to fill critical data needs identified in the Adaptive Implementation section.

If not already completed, these requirements will be incorporated into individual site cleanup plans within five years of the effective date of this TMDL, with full implementation of the actions within ten years of the effective date of this TMDL or as agreed to in the individual site cleanup plan.

Navigational Dredging

Maintenance dredging involves the removal of sediments from navigation channels and the disposal of this sediment at different permitted sites. Dredged sediment from the Bay can be disposed of at upland sites, at in-Bay disposal sites, or at a deep-ocean disposal site (USEPA/USACE, 1999a; USEPA/USACE, 1999b). The Long Term Management Strategy for the Disposal of Dredged Material in the San Francisco Bay Region (LTMS) seeks to reduce the total volume of in-Bay disposal from about 2,000,000 cubic yards per year (yd^3/yr) to approximately 1,000,000 yd^3/yr within about 10 years (USACE, 2001). The lower in-Bay dredge material disposal will result in a net removal of PCBs from the Bay.

In order to ensure that buried PCBs are not being spread out through the Bay via dredge material disposal at dispersive sites, sediments disposed of in Bay should have total PCBs concentrations no greater than that in ambient surface sediments in the Bay. To provide this assurance, we propose that the PCBs concentration in dredged material disposed of in the Bay not exceed the 99th percentile total PCBs concentration of the previous 10 years of Bay surface sediment samples collected through the RMP (excluding stations outside the Bay like the Sacramento River, San Joaquin River, Guadalupe River and Standish Dam stations). Prior to disposal, the material should be sampled and analyzed according to the procedures outlined in the 2001 U.S. Army Corps of Engineers document “Guidelines for Implementing the Inland Testing Manual in the San Francisco Bay Region.” All in-Bay disposal of dredged material shall comply with the Dredging and Disposal of Dredged Sediment program described in Section 4.20 of the Basin Plan and the Long Term Management Strategy for the Disposal of Dredge Material in San Francisco Bay.

In addition to controlling PCBs sources and discharges, dredged material dischargers will be required to support actions to reduce the health risks of people consuming PCBs-contaminated Bay fish, and to conduct or cause to be conducted studies to fill critical data needs identified in the Adaptive Implementation section.

11.3. Risk Management

Load reductions and consequent attainment of the numeric target to support fishing in the Bay as a beneficial use will take time to achieve. However, there are actions that should be undertaken immediately to help manage the risk to consumers of PCBs-contaminated fish. The Water Board will work with the California Office of Environmental Health Hazard Assessment, the California Department of Toxic Substances Control, the California Department of Health Services, and dischargers to pursue risk management strategies. The risk management activities will include the following:

- Investigate and implement actions to address public health impacts of PCBs in San Francisco Bay/Delta fish, including activities that reduce actual and potential exposure of and mitigate health impacts to those people and communities most likely to be affected by PCBs in San Francisco Bay caught fish, such as sport and subsistence fishers and their families;

- Provide multilingual fish-consumption advice to the public to help reduce PCBs exposure through community outreach, broadcast and print media, and signs posted at popular fishing locations;
- Regularly inform the public about monitoring data and findings regarding hazards of eating PCBs-contaminated fish; and
- Perform special studies needed to support health risk assessment and risk communication.

11.4. Critical Data Needs

Data and other information are needed to assess both the progress toward attainment of the numeric fish tissue target and to inform the adaptive implementation of the TMDL. Dischargers will therefore be required to support the following studies to fill critical data needs.

- PCBs mass budget modeling and food web model improvements – Model refinements are needed to improve our ability to predict recovery rates of the Bay from impairment by PCBs, and to help focus implementation actions on those with the most potential for success. Better models could lead to a recalculation of the TMDL, and revised load and wasteload allocations. The TMDL will be revised if improved models predict that the current TMDL will not result in attainment of the fish tissue target. Improved models will also help evaluate whether implemented actions are effective and sufficient, and could direct the need for different or expanded implementation action. Models are also needed to improve our understanding of the role in-Bay PCBs-contaminated sites play in the Bay's recovery.

- Rate of natural attenuation of PCBs in the Bay environments – Natural attenuation is a component of the implementation of the TMDL. Attenuation rates greatly affect model prediction of recovery of the Bay from PCBs impairment. A better understanding of local rates of natural attenuation is needed in order to predict with more certainty the recovery time of the Bay, and to inform whether more, less or different implementation actions are needed. A refined understanding of the PCBs natural attenuation rate in water and sediment could lead to revised load and wasteload allocations. Specifically, load allocations to the Central Valley and navigational dredging currently rely on natural reduction of PCBs and new findings could result in load reduction actions implementation.

11.5. Monitoring

Monitoring is needed to demonstrate progress toward attainment of allocations and the numeric target. The discharger-funded RMP currently monitors PCBs in San Francisco Bay fish, sediments, and water. The Water Board will call on dischargers to support the RMP to monitor PCBs in fish (as specified in the numeric target), in sediments and water, at a spatial scale and frequency to track trends in the decline of PCBs and to demonstrate attainment of the numeric fish tissue target and sediment concentration goal. Monitoring will provide information on the progress in attaining the TMDL target, and therefore the success of actions implemented. Long term data are needed to verify the recovery rate of the Bay, and compare this with a model predicted recovery rate. These efforts will also inform whether the actions implemented are effective in reducing PCBs to the TMDL target or whether further actions are required. A refined understanding of long term PCBs concentration trend data in water, sediment and biota could lead to a recalculation of the TMDL, and revised load and wasteload allocations.

Monitoring of load allocations to demonstrate progress towards attainment shall be conducted by municipal and industrial wastewater dischargers and by urban runoff stormwater agencies. The RMP also conducts regular monitoring of PCBs loads from the Central Valley and some limited monitoring of PCBs loads from local tributaries. The current limited monitoring of PCBs loads from local tributaries by the RMP is not sufficient to quantify PCBs loads from stormwater runoff or the loads reduced from urban stormwater management control actions. As described in the discussion of implementation of Central Valley allocations, the Water Board will also call on dischargers, via the RMP, to verify ongoing loads and load reductions to allow evaluation of trends in the loads of PCBs from the Central Valley watershed and to confirm that loads are being reduced due to natural attenuation.

11.6. Adaptive Implementation

Adaptive implementation entails taking immediate actions commensurate with available information, reviewing new information as it becomes available, and modifying actions as necessary based on the new information. Taking immediate action allows progress to occur while more and better information is collected, and the effectiveness of current actions is evaluated (NRC, 2001). In this manner, this TMDL will be implemented in phases starting with actions described in each source category, risk management, monitoring, and critical data needs section above with subsequent modifications and phases based on improved knowledge of PCBs sources, control measures, and fate in the environment. In particular, there are four principal ongoing activities that may necessitate TMDL adaptation.

First, the ongoing monitoring being conducted through the Regional Monitoring Program will allow us to improve our understanding of the rate of natural attenuation and recovery and our understanding of patterns of PCB concentrations in tissue and sediment. Interpretation of these data may result in improved ways of expressing TMDL targets or of evaluating them using monitoring data.

Second, there are ongoing efforts to improve understanding of the fate and transport of PCBs in the Bay and to model the relevant biological, physical and chemical processes. Improved modeling capabilities combined with bathymetric and sediment core data allow us to better predict how the Bay will respond to management actions and changing conditions. This will, in turn, inform the need to adapt implementation schedules.

Third, we will continue to pursue clean-up of in-Bay contaminated sites. By evaluating the degree to which in-Bay contaminated sites can be remediated and evaluating the resultant impact on PCB levels in the Bay and its biota, we will gain valuable insights relevant to determining the pace at which the beneficial uses of the Bay will be restored.

Last, the success of the TMDL depends in large part on concerted efforts to locate and evaluate opportunities to control on-land PCB sources and the PCB load conveyed to the Bay via urban stormwater runoff. The progressive approach for addressing this challenge is described in the stormwater runoff implementation section above in more detail.

We will be assessing progress in each of these four areas on a continuing basis to determine if the quantity and quality of emerging information are sufficient to warrant adaptation of the TMDL.

The Water Board will adapt the TMDL and implementation plan to incorporate new and relevant scientific information such that effective and efficient measures can be taken to achieve the

TMDL allocations and numeric fish tissue target. The Water Board, via an annual report by Water Board staff on TMDL implementation progress, will evaluate new and relevant information from implementation actions, monitoring, special studies, and scientific literature. Within ten years of the effective date of the TMDL, any necessary modifications to the targets, allocations, or implementation plan will be incorporated into the Basin Plan. The Water Board will make new information available to the public and will allow opportunities for public participation regarding the results of the periodic review of the TMDL, attainment of load allocations, attenuation of PCBs, or revised TMDL derivations.

The Water Board will adapt the TMDL and implementation plan to incorporate new and relevant scientific information such that effective and efficient measures can be taken to achieve the allocations and numeric fish tissue target. The Water Board staff will present an annual progress report to the Water Board on implementation of the TMDL that includes evaluation of new and relevant information that becomes available through implementation actions, monitoring, special studies, and scientific literature, and within ten years of the effective date of the TMDL, the Water Board will consider amending the PCBs TMDL and implementation plan as necessary to ensure attainment of water quality standards in a timely manner while considering the financial and environmental consequences of new control measures.

In particular, achievement of the allocations for stormwater runoff, which is projected to take 20 years, will be challenging. Consequently, the Water Board will consider modifying the schedule for achievement of the load allocations for stormwater runoff provided that dischargers have complied with all applicable permit requirements and all of the following have been accomplished relative to that source category or discharger:

- A diligent effort has been made to quantify PCBs loads and the sources of PCBs in the discharge;
- Documentation has been prepared that demonstrates that all technically and economically feasible and cost effective control measures recognized by the Water Board as applicable for that source category or discharger have been fully implemented, and evaluates and quantifies the comprehensive water quality benefit of such measures;
- A demonstration has been made that achievement of the allocation will require more than the remaining ten years originally envisioned; and
- A plan has been prepared that includes a schedule for evaluating the effectiveness and feasibility of additional control measures and implementing additional controls as appropriate.

12. Regulatory Analyses

This section provides the regulatory analyses required to adopt the Basin Plan amendment to establish the PCBs TMDL. It includes a discussion of the results of an environmental impact analysis and a discussion of economic considerations. The environmental impact analysis is required under the California Environmental Quality Act (CEQA) when the Water Board adopts a Basin Plan amendment under the Water Board's certified regulatory program (California Public Resources Code § 15251 [g]). The environmental analysis also satisfies Public Resources Code § 21159 which applies when adopting rules or regulations requiring installation of pollution control equipment, compliance with a performance standard, or treatment requirement. It evaluates the reasonably foreseeable environmental impacts of the methods of compliance with the implementation plan in Section 11, and describes the reasonably foreseeable and feasible mitigation measures that could be used to reduce significant environmental impacts. The discussion of economic considerations is provided in accordance with Public Resources Code § 21159 [a] [3] [c] which requires an analysis of economic factors related to costs of implementation of the new rules or regulations. This Staff Report, including the CEQA checklist and these analyses, constitute a substitute environmental document.

The results of the assessment of environmental impacts and economic considerations show that the Basin Plan amendment is not likely to result in long-term, significant impacts and will not cause immediate, large scale expenditures by the entities required to implement the PCBs TMDL. Many of the actions identified in the Basin Plan amendment to implement the PCBs TMDL are built on existing efforts to improve management of urban runoff, treatment of wastewater, and to remediate upland and in-Bay PCBs-contaminated sites. Many of the actions will be implemented in a phased manner after pilot studies are conducted to evaluate those specific BMPs or control measures that are effective both from a load reduction perspective and from a cost perspective. This section analyzes environmental impacts for many of the potential individual projects that may be developed to implement the PCBs TMDL to the extent such impacts can be identified at this time. At such time as individual projects are proposed, the impacts of those individual projects will be evaluated as to location, specific technologies, size, quantity, feasibility and any mitigation necessary to address the identified environmental impacts. These project specific impacts are too speculative to evaluate at this time. We anticipate that these projects would be required to mitigate any potential environmental impacts. Mitigation measures that are both feasible and already in common use as standard industry practice, are discussed in this analysis of environmental impacts and are expected to reduce all potentially significant impacts to less than significant levels.

12.1. Environmental Impact Analysis: CEQA Compliance

The Water Board is the lead agency responsible for evaluating the potential environmental impacts of the proposed Basin Plan amendment to establish the PCBs TMDL and implementation plan for San Francisco Bay. To accomplish this evaluation, a standard CEQA checklist was prepared (Appendix A) along with an explanation of the results of the analysis. It includes a discussion of the potential environmental impacts as well as mitigation measures that would be used to eliminate or reduce the impacts. Because the Water Board cannot mandate adoption of any specific compliance method, the analysis provided here should be viewed as comparable to a Tier 1 environmental impact review. It does not and cannot present detailed analysis of project-specific

impacts at specific locations in the San Francisco Bay watershed, since such projects have yet to be defined, and thus, any analysis would be speculative at this time. Our assessment evaluates likely impacts of reasonably foreseeable means of compliance and the reasonably foreseeable mitigation measures that would reduce any potentially significant impacts.

12.2. Project Description

Sections 2.2 and 3. of this Staff Report present the project definition, objectives and environmental setting that provide the basis for the CEQA evaluation. The project is composed of a Basin Plan Amendment that includes a TMDL of 10 kg/yr for San Francisco Bay based on a numeric target for fish tissue (10 ug/kg) protective of human health and wildlife beneficial uses and allocates the TMDL among the various external sources. This target is based on evaluating the lifetime incremental cancer risk of one in a 100,000 for an adult recreational sport fisher. It is derived from assuming a 70 kilogram person, consuming on average 32 grams of fish caught in San Francisco Bay per day, over a lifetime of 70 years. The fish consumption rate of 32 g/day is based on a San Francisco Bay survey (SFEI 2000a). This consumption rate represents the 95th percentile upper bound estimate of consumption for local sport fish consumers based on their four-week recall of eating Bay caught fish.

The Basin Plan amendment includes a plan to implement the TMDL using a phased approach, a monitoring program to evaluate progress towards achievement of the target, and a plan and schedule for additional studies to improve the technical understanding relevant to the PCBs TMDL and implementation plan. It also requires reviewing progress toward meeting targets, implementing actions, and evaluating continued appropriateness and effectiveness of actions. The phasing of the implementation plan involves conducting pilot studies and/or feasibility studies for some actions, prior to requiring those actions to be undertaken. The proposed implementation schedule also provides a realistic timeframe in which to complete the tasks required by the TMDL and a timeframe to evaluate the need for modifications to the TMDL and the implementation plan.

12.3. Project Objectives

The primary objective of the project is to achieve the PCBs fish tissue target specified by the TMDL in order to restore the currently impaired beneficial use of commercial and sport fishing in the Bay.

The objectives of the project with respect to PCBs, which are most relevant to the analyses of environmental impacts and alternatives, are listed below (the entire list is found in Section 2.2):

- Attain numeric PCBs water quality criteria and the bioaccumulative narrative water quality objective established for the Bay in as short a time frame as feasible.
- Protect beneficial uses of the Bay related to sport fishing and wildlife.
- Provide interim risk management programs to protect recreational sport fishing anglers.
- Set target(s) to attain relevant water quality objectives in all parts of the Bay.
- Avoid imposing regulatory requirements more stringent than necessary to meet the targets designed to attain water quality standards.

- Reduce loading of PCBs to the Bay from external sources.
- Comply with the Clean Water Act requirement to adopt a TMDL for a 303 (d) listed impaired water body.
- Initiate actions to reduce PCBs discharges, while continuing to accommodate new information on PCBs fate in the environment.

12.4. Reasonably Foreseeable Methods of Compliance

Implementation Plan requirements not evaluated in this CEQA analysis
Some of the TMDL implementation plan requirements of the Basin Plan amendment are not evaluated in this Section of the Report because they are requirements that do not cause a direct physical change in the environment or a reasonably foreseeable indirect physical change in the environment. Those requirements include evaluations of potential actions, monitoring, participation in additional research to fill critical data needs, and development of public outreach and human health risk management programs.

Implementation Plan requirements evaluated in this CEQA analysis
Implementation measures that are reasonably foreseeable methods of compliance that result in a physical change in the environment are reviewed in this analysis. An explanation of what is evaluated in this analysis is provided below and organized by source category.

External Sources

Wastewater and Stormwater Implementation
The implementation plan for the TMDL is considered a phased plan because many of the actions necessary to achieve the TMDL allocations will require an evaluation as part of a pilot study or feasibility study prior to implementation. Many of the actions that are required to achieve reductions in PCBs loading to the Bay will be required as part of an NPDES permit for municipal and industrial wastewater dischargers or stormwater runoff management agencies.

The NPDES permit requirements for urban stormwater runoff would be implemented in a phased approach. The first five years of TMDL implementation are anticipated to include pilot studies that will test a variety of control measures in order to implement measures that will achieve load allocations in the most effective and cost-efficient manner. The second five-year permitting period will feature strategic implementation of those measures found to be effective through pilot testing conducted in the first permit term. In 10 years, it is expected that the permit would require a schedule for full implementation of the technically practicable, effective and cost efficient BMPs and control measures to the maximum extent practicable. It is speculative at this time to identify specific individual projects that will be implemented based on the results of the pilot studies. Instead we have has compiled a general list of reasonably foreseeable compliance measures that may be considered as part of a pilot study or may eventually be implemented to attain the load allocations identified in the Basin Plan amendment for the external sources of municipal and industrial wastewater, and urban stormwater runoff.

The general list of reasonably foreseeable means of compliance evaluated in this environmental impact analysis for these source categories include the following:

- Removal and disposal of PCBs-containing equipment
- Removal and disposal of PCBs from building materials
- Removal and disposal of PCBs residuals in sewer lines
- Survey and remediation of contaminated soil or sediment in public rights-of-way, wastewater conveyances, and private properties
- Increased street cleaning (includes sweeping or washing)
- Storm drain and inlet maintenance (above and beyond normal practices)
- Construction, operation, and maintainance of facilities/units to intercept, divert and treat storm water (e.g., on-site system retrofits including detention basins, infiltration basins, sand filters, bioretention drainage areas etc.)
- Strategically routing/diverting stormwater to POTWs (i.e., municipal wastewater treatment plants) for treatment

These measures are evaluated in this environmental analysis without much detail as to location, size or number, or location-specific feasibility, since they will be evaluated in the future as part of the pilot projects undertaken by the dischargers. BMPs and control measures to be evaluated as part of a pilot study include both potentially new activities as well as augmentation of existing actions. For example, the number and extent of projects to remove and dispose of PCBs-containing equipment and building materials containing PCBs is currently unknown. Storm drain maintenance and street cleaning are all conducted as part of normal municipal stormwater programs. They are included in this analysis because adoption of the PCBs TMDL may increase their frequency.

Pilot studies will be required under a future NPDES stormwater permit to evaluate the feasibility of the construction, operation, and maintenance of new facilities to intercept, divert, and treat stormwater. Therefore, the number and locations of these projects are uncertain. No specific type of project is required, rather this is an implementation measure that could be selected if strategically feasible in some locations. The pilot studies are intended to analyze the environmental impacts of implementing these types of measures.

No specific project to route stormwater to a wastewaster treatment plant is currently required. Studies are underway by the San Francisco Estuary Institute under funding from the State Water Resources Control Board to investigate opportunities, i.e., locations of PCB-contaminated stormwater runoff occurring in the vicinity of pump stations. Based on the results of these studies, pilot projects could be pursued by the stormwater management agencies or municipal wastewater treatment facilities.

Central Valley

No actions for the Central Valley watershed load allocations are required other than monitoring, and thus, there are no reasonably foreseeable compliance measures to evaluate here.

Internal Sources

In-Bay Contaminated Hot Spots

There are no load allocations to internal sources, therefore no new actions are explicitly required of any regulated party by this TMDL for in-Bay PCB-contaminated hot spots.

Projects to remediate in-Bay PCB-contaminated sediments have been completed in some locations, are in-progress at others, and may occur in the future for sites identified in Table 23 of this Report.

The environmental impacts of cleanup activities at some of the sites that were identified as part of the Bay Protection Toxic Cleanup Program were analyzed in a programmatic level environmental evaluation by the State Water Resources Control Board during development of the Consolidated Toxic Hot Spots Clean Up Plan (SWRCB, 2003) The environmental evaluation concluded that the action of adoption of the Consolidated Cleanup Plan by the SWRCB will not result in significant adverse impacts. Any adverse environmental effects that may occur due to remediation under the proposed Plan would be substantially the same as environmental effects of remediation if the Plan is not adopted. This is because the regulatory framework requiring remediation and the regulatory framework protecting the environment against adverse affects of remediation, are unchanged by the adoption of the proposed Plan. In other words, the Plan will neither affect the requirements for remediation nor the way in which the environment is protected against adverse effects through permitting, CEQA, Waste Discharge Requirements, Cleanup Orders, etc. This is also true in the case of this PCBs TMDL.

Remediation of PCBs-contaminated hot spots may support attainment of the fish tissue target and TMDL, based on decreases in the mass of PCBs in localized in-Bay surface sediments. Despite the fact that these actions are not required by this Basin Plan amendment, there may be a fair argument that such actions may occur due to the project or may receive greater attention and resources from state, federal or local agencies and thus the number of projects in an active stage at any given time may be accelerated, thus the environmental impacts of selected potential remedial alternatives that involve a potential physical change in the environment are evaluated in this section. This analysis is a general evaluation of environmental impacts that could occur due to remediation of PCBs contaminated sediment. A feasibility study is anticipated to be required prior to implementing any remedial alternative. Some potential remedial alternatives, such as monitored natural recovery, are not evaluated here because they do not involve a physical change in the environment. The fact that they are not evaluated in this report has no bearing on their potential effectiveness as a remedial alternative.

Detailed clean-up plans would also require an assessment of environmental impacts that would be conducted by the lead agency at time of review and approval. These projects could be carried out under the authority of the Water Board, DTSC, US EPA, or in some cases local agencies. In each case, the lead agency is responsible for ensuring environmental impacts are avoided, minimized, and mitigated.

The reasonably foreseeable means of compliance evaluated in this environmental impact analysis for this source category include the following:

- Remediation of contaminated sediment with dredging and appropriate disposal

- Remediation of contaminated sediment with dredging, appropriate disposal, and capping of residual contamination in-situ

Navigational Dredging

There is no load allocated to navigational dredging, instead the TMDL implementation plan establishes a methodology to determine whether sediments dredged to support navigation could be disposed of in-Bay. Application of the methodology to navigational dredging project could result in less material being allowed to be disposed of in-Bay over time if the ambient concentration of PCBs in sediments decreases. A Basin Plan amendment adopted by the Water Board, and approved by State Board on November 6, 2007, sets a long-term overall goal for in-Bay disposal of dredged material at designated in-Bay disposal sites at one mcy (or less) per year to be attained step-wise over a 12-year period. This goal requires a reduction of in-Bay disposal. The environmental impacts of reductions in-Bay disposal were evaluated in the Long Term Management Strategy for Dredged Material Environmental Impact Statement/Programmatic Environmental Impact Report (US EPA 1996) and was identified as being more environmentally beneficial than allowing in-Bay disposal. Navigation dredged material not disposed of in-Bay is likely to be taken to the deep ocean disposal site. The environmental impacts of the implementation plan actions for navigational dredging are therefore not further evaluated in this analysis.

12.5. Regulatory Framework

Agencies with permit review or approval authority over the implementation of reasonably foreseeable means of compliance include the following:

San Francisco Bay Water Board

Issues Clean Water Act Section 401 Water Quality Certifications required to conduct dredging or filling of waters of the U.S., including San Francisco Bay; NPDES permits, WDRs and Cleanup and Abatement Orders for discharges that pollute or threaten to pollute surface or groundwater, and other orders as necessary to enforce the Porter Cologne Water Quality Control Act of 1969.

Bay Conservation and Development Commission

Permits actions subject to the San Francisco Bay Plan; issues consistency determinations with the Coastal Zone Act Reauthorization Amendments of 1990.

The Department of Toxic Substances Control

Issues orders in accordance with Chapter 6.8 of Division 20 of the California Health and Safety Code.

U.S. Army Corps of Engineers

Issues Clean Water Act section 404 permits for dredging and fill projects in navigable waters.

U.S. Fish and Wildlife Service

Conduct section 7 consultation for effects to listed federal species.

National Oceanic Atmospheric Administration/National Marine Fisheries Service (NOAA/NMFS)

Conduct section 7 consultation for effects to migratory and endangered fish species

California Department of Fish and Game

Provide section 2081 consultation for effects to listed species.

Municipalities/Counties

Issue building and/or grading permits; enforce of noise ordinances

12.6. Environmental Checklist

A significant impact is defined by CEQA as, "a substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by a project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historical or aesthetic significance," (14 CCR Title 14, Chapter 3, Article 20, Section 15382). Our analysis, prepared using the CEQA checklist (Appendix A), identified some potentially significant environmental impacts in the areas of air quality, biological resources, hydrology and water quality, noise and utilities and service systems.

Mitigation Measures

Although some potentially significant impacts have been identified, recommended mitigation measures, many of which are mandatory conditions of local, state, and federal regulations and permits (see Section 12.5, e.g., mitigation requirements of the Water Board's 401 Water Quality permits) will eliminate entirely or reduce these impacts to a "Less than Significant with Mitigation Incorporated" level. As used in this analysis and as defined by CEQA (Article 20, Section 15370), mitigation can be divided into four types:

1. Avoiding the impact altogether by not taking a certain action or part of an action.
2. Minimizing impacts by limiting the degree or magnitude of the action and its implementation.
3. Rectifying or eliminating the impact over time by preservation and maintenance operations during the life of the action.
4. Compensating for the impact by replacing or providing substitute resources or environments.

It is likely that all of these mitigation strategies will be used alone or in a variety of combinations to address specific impacts associated with individual projects developed as means of compliance with the Basin Plan amendment.

It should be noted that the Water Board will not require any actions or projects to implement the PCBs TMDL that would lead to significant, permanent, negative impacts on the environment. Furthermore, we anticipate that all potentially significant environmental impacts will be mitigated to less-than-significant levels either through the Water Board's regulatory and permitting authorities or under those of other agencies

with jurisdiction in relevant areas, such as U.S. Environmental Protection Agency (U.S. EPA), U.S. Fish and Wildlife Service (USFWS), NOAA/NMFS, Occupational Health and Safety Administration (OSHA), U.S. Army Corps of Engineers (USACE), California Department of Fish and Game (CDFG), California Department of Toxic Substances Control (DTSC), and San Francisco Bay Conservation and Development Commission (BCDC).

Results of the Environmental Analysis

The CEQA checklist (Appendix A) summarizes the results of the analysis of potential environmental impacts associated with the reasonably foreseeable means of compliance with the PCBs TMDL as proposed in the Basin Plan amendment. The standard CEQA rating system, which was used here, includes four designations of the level of significance. They are: Potentially Significant (PS), Less than Significant (LTS), Less than Significant with Mitigation Incorporated (LTSM), and No Impact (NI). Table 24 presents those environmental impacts determined to be potentially significant before mitigation and the associated mitigation measures. A discussion of the environmental impact categories on the checklist, level of significance, and recommended mitigation measures follows the summary table.

Table 24-Summary of Potentially Significant Environmental Impacts and Mitigation Measures

Reasonably Foreseeable Compliance Measures Evaluated	**Environmental Impacts**	**Level of Significance Before Mitigation**	**Mitigation Measures**	**Level of Significance With Mitigation**
3. AIR QUALITY 3-B Contribute to Air Quality Violation				
On-Land • Construct, operate, and maintain facilities/units to intercept, divert, and treat stormwater • Remediation of PCBs-contaminated soil or sediment from public rights-of-way, storm water conveyances, and private property • Increased Street Cleaning (washing and/or sweeping) • Storm drain and inlet maintenance • Strategically route stormwater to POTWs for treatment	Impacts: • Short-term increase in particulates (PM-10) from vehicle exhaust • Short-term increase in photo-chemical smog constituents from vehicle exhaust • Construction-related dust • Diesel exhaust (nuisance odors)	PS	On-Land Implementation of established BMPs and site-control measures to control and minimize dust include, but not limited to: • Spray down construction sites with water or soil stabilizers • Cover all hauling trucks • Maintain adequate freeboard on haul trucks • Limit vehicle speed in unpaved work areas • Suspend work during periods of high wind or air quality restrictions • Install temporary windbreaks • Use of low sulfur or emulsified diesel fuel to reduce constituents of photo-chemical smog • Use of soot traps on diesel equipment to reduce particulates Additional BMPs for removal of PCBs-containing equipment/building materials: • Use covered dust chutes for removal of material • Create a Soil Management Plan • Test and monitor on-site air quality	LTSM

Reasonably Foreseeable Compliance Measures Evaluated	Environmental Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance With Mitigation
In-Bay • Dredge contaminated sediment with offsite disposal (all methods)	Impacts: • Short-term increase in airborne particulates (PM-10) from barge and equipment exhaust • Short-term increase in photo-chemical smog constituents from barge and equipment exhaust	PS	In-Bay • Use of electric-powered excavating equipment and barges in place of diesel-fueled equipment and barges • Use of low sulfur or emulsified diesel fuel to reduce constituents of photo-chemical smog • Use of soot traps on diesel equipment to reduce particulates	LTSM
4. BIOLOGICAL RESOURCES 4-A, C and D Substantial adverse effect on special status species, federally protected wetlands and substantially interfere with migratory fish				
In Bay • Dredge contaminated sediment (all methods)	Impacts: • Disturbance of near-shore tidal wetlands • Short-term habitat disturbances such as vegetation removal, noise, presence of humans	PS	In-Bay Mitigation measures include: • Use of electric dredging equipment (noise reduction) • Use of clamshell buckets and silt screens to minimize re-suspension of sediment • Vibration dampening material on equipment • Adherence to established state and federal policies for "No Net Loss" of wetlands • Adherence to policy to avoid, minimize, mitigate for projects involving wetlands • Adherence to Water Board permit requirements, USFWS, NOAA/NMFS, CDFG consultation requirements • BMPs to minimize project footprint • Pre-construction survey for endangered or sensitive species • Presence of trained on-site biological monitors • Training for construction personnel to	LTSM

Reasonably Foreseeable Compliance Measures Evaluated	**Environmental Impacts**	**Level of Significance Before Mitigation**	**Mitigation Measures**	**Level of Significance With Mitigation**
			recognize and avoid sensitive species	
8. HYDROLOGY AND WATER QUALITY 8-A Violate any water quality standards or waste discharge requirements				
In-Bay • Dredge PCBs-contaminated sediment with off-site disposal • Dredge (partial) and cap remainder in situ	Impacts: • Short term violations of water quality objectives due to sediment resuspension or creation of decant water	PS	In-Bay • Mitigation measures include: • Comply with requirements of water quality certification or waste discharge requirements • Installation of temporary sheet pile enclosure or silt curtains • Treatment or proper disposal of decant water	LTSM
11. NOISE 11-A and B Expose people to noise or groundborne vibration in excess of local ordinances or other standards				
On Land • Removal and disposal of PCBs-containing equipment • Removal and disposal of PCBs-containing building materials • Removal and disposal of PCBs residuals in sewer lines • Remediation of contaminated soil or sediment from public rights-of-way, storm water conveyances, and private property • Construct, operate, and maintain facilities/units	Impacts: • Short-term noise related to construction activities and use of heavy equipment for all projects involving construction and removal and hauling of equipment/material from buildings	PS	On Land Mitigation measures include: • Compliance with local noise ordinances (typical standards include blackouts prohibiting use of heavy equipment on Sundays, early morning hours and evenings all week, and on holidays) • Use of noise dampening material or barriers around equipment • Engine and pneumatic exhaust controls • Locating equipment as far as practical from noise-sensitive areas • Selecting haul routes that affect the lowest number of people	LTSM

Reasonably Foreseeable Compliance Measures Evaluated	Environmental Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance With Mitigation
to intercept, divert, and treat storm water • Strategically Route Stormwater to POTWs In-Bay • Dredge PCBs-contaminated sediment with off-site disposal • Dredge (partial) and cap remainder in situ	Impacts: • Use of heavy equipment during dredging and hauling activities could cause short-term, localized noise	PS	In-Bay Mitigation measures include: • Compliance with local noise ordinances (typical standards include blackouts prohibiting use of heavy equipment on Sundays, early morning hours and evenings all week, and on holidays) • Use of noise dampening material or barriers around equipment • Engine and pneumatic exhaust controls • Locating equipment as far as practical from noise-sensitive areas • Selecting haul routes that affect the lowest number of people	LTSM
11. NOISE 11-D Substantial temporary or periodic increase in ambient noise in vicinity of project				
On Land • Removal and disposal of PCBs-containing equipment • Removal and disposal of PCBs-containing building materials • Removal and disposal of PCBs residuals in sewer lines	Impacts: • Short-term, intermittent noise from use of heavy equipment during construction or remediation activities	PS	On Land Mitigation measures include: • Compliance with local noise ordinances (typical standards include blackouts prohibiting use of heavy equipment on Sundays, early morning hours and evenings all week, and on holidays) • Use of noise dampening material or barriers around equipment • Engine and pneumatic exhaust controls	LTSM

Reasonably Foreseeable Compliance Measures Evaluated	Environmental Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance With Mitigation
• Remediation of contaminated soil or sediment from public rights-of-way, storm water conveyances, and private property • Construct, operate, and maintain facilities/units to intercept, divert, and treat storm water • Strategically Route Stormwater to POTWs In-Bay • Dredge contaminated sediment (all methods)			• Locating equipment as far as practical from noise-sensitive areas • Selecting haul routes that affect the lowest number of people • Compliance with work window restrictions In-Bay Mitigation measures include: • Compliance with local noise ordinances (typical standards include blackouts prohibiting use of heavy equipment on Sundays, early morning hours and evenings all week, and on holidays) • Use of noise dampening material or barriers around equipment • Engine and pneumatic exhaust controls • Locating equipment as far as practical from noise-sensitive areas	
16. UTILITIES AND SERVICE SYSTEMS 16-B Require or result in construction of new water or wastewater treatment facilities or expansion of facilities, construction of which could cause significant environmental effects				
On-Land • Removal and disposal of PCBs residuals in sewer lines	Impacts: • Projects to remove PCBs residuals from sewer lines	PS	On Land Mitigation measures include: • Compliance with existing, applicable zoning, land-use, permitting requirements of all	LTSM

Reasonably Foreseeable Compliance Measures Evaluated	Environmental Impacts	Level of Significance Before Mitigation	Mitigation Measures	Level of Significance With Mitigation
• Construct facilities/units to intercept, divert, and treat storm water • Strategically Route Stormwater to POTWs	may, in a limited number of cases, include replacement of some sections of the line • Some dischargers may strategically select sites where feasible to intercept and divert storm water to POTWs. Construction is likely to be limited to interception devices and pipelines		agencies (local, state, and federal) • Use of standard construction BMPs to avoid and minimize environmental impacts	
16. Utilities and Service Systems 16-C Require or result in construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects				
On Land • Construction of facilities to intercept and divert urban stormwater runoff • Strategically Route Stormwater to POTWs	Impacts: • Impacts related to construction activities as described above	PS	On Land Mitigation measures include: • Compliance with existing, applicable zoning, land-use, permitting requirements of all agencies (local, state, and federal) • Use of standard construction BMPs to avoid and minimize environmental impacts	LTSM

Discussion of Environmental Impacts and Mitigation by Checklist Category
In this section, we present the rationale for the ratings of environmental impacts listed in the CEQA checklist (Appendix A) and Table 24-Summary of Potentially Significant Environmental Impacts and Mitigation Measures.
The following sections are numbered to match the checklist.

1. Aesthetics

There are no known or reasonably foreseeable impacts to aesthetic values as a result of compliance with the proposed Basin Plan amendment. Significant impacts to aesthetics would involve introduction of new elements that are substantially out of character with existing land uses or would obscure or alter scenic vistas or occur within a designated scenic area. There are no impacts of this type associated with the reasonably foreseeable means of compliance with the Basin Plan amendment as projects will be implemented in urban industrial areas. Some projects may occur adjacent to the San Francisco Bay. Construction impacts associated with activities along the shoreline may include sheet pile installation, removal of vegetation, sediment stabilization or pipeline installation; these impacts are all short-term activities with no long-term impacts to aesthetic resources.

2. Agricultural Resources

There are no known or reasonably foreseeable impacts to agricultural resources as a result of compliance with the proposed Basin Plan amendment. Significant impacts would occur if a project substantially affected agricultural lands or production processes. The reasonably foreseeable methods of compliance with Basin Plan amendment will be implemented in urban, industrial areas where there are essentially no agricultural land uses.

3. Air Quality

The impacts of a project to air quality in the Bay Area are assessed in relation to guidelines set by the Bay Area Air Quality Management District (BAAQMD 1999) as well as in relation to federal standards established by the Clean Air Act. The air pollutants of greatest concern in the Bay area include ozone and inhalable particulate matter less than 10 microns in diameter (PM_{10}). The San Francisco Bay Area Air Basin is currently classified as a nonattainment area for both the state and federal ozone standards, and for state PM_{10} standards.

In the case of implementation activities related to the PCBs TMDL, emissions of air pollutants are primarily associated with construction activities. Given the temporal aspect of such projects, all reasonably foreseeable impacts would be short-term. Construction activities emissions are included in the emission inventory that is the basis for regional air quality plans and are not expected to impede attainment or maintenance of ozone or carbon monoxide standards in the Bay Area (BAAQMD 1999). Even if emissions are greater than anticipated they would be mitigated as discussed below.

The other pollutant of greatest concern related to construction and possible remediation work is fine particulate matter ($<PM_{10}$), which is related to activities such as excavation, grading, vehicle travel on paved and unpaved surfaces, and vehicle and equipment emissions. Construction-related emissions of PM_{10} vary depending on a variety of factors including the level of activity, specific operations taking placing, equipment being used, and local soil and weather conditions. Although particulate matter is closely associated with diesel exhaust, it is also formed from tire wear and road dust. However, despite the variability of these influences, the BAAQMD has identified numerous BMPs that are feasible control measures to significantly reduce emissions

of PM_{10} from construction projects. In addition, as of mid-2006, California law requires that all highway diesel fuel sold in the state be Ultra Low Sulfur Diesel (ULSD), which is compatible with existing, in-use vehicles. This formulation also contributes to significant reductions in particulate matter emissions. We anticipate use of this fuel and implementation of BMPs would be required as necessary for projects associated with implementation of the PCBs TMDL. Specific areas of impact and mitigation are described below.

Implementation measures for the PCBs TMDL could lead to projects or other activities with impacts to air quality in the following area as listed on the CEQA checklist:

Would the project:

Impact 3- B Violate any air quality standard or contribute substantially to an existing or projected air quality violation.

These impacts are rated as potentially significant, but less than significant with mitigation incorporated.

On Land

Impacts: Implementation measures for the PCBs TMDL may include removal of PCB-containing equipment from buildings or other industrial facilities and disposal at appropriate offsite locations. Remediation projects may also be implemented to remove contaminated soils or sediments from public rights-of-way, private property, and sewer lines. Such projects would involve the use of heavy equipment during remediation or hauling and disposal of materials.

Some dischargers responsible for urban runoff/stormwater may decide to conduct additional street cleaning, including street sweeping and washing, or installation of new filtration systems for storm drains. Activities of this type could require more frequent operation of street cleaning machinery than under current maintenance schedules. This increase in maintenance could impact air quality on a short-term, periodic basis. Impacts from construction of other possible control measures, e.g., facilities/units to intercept, divert and treat stormwater may also occur but are expected to be short term in nature and the number and locations of such projects would be speculative, as the feasibility and specific nature of these projects will be evaluated by dischargers through pilot studies.

In addition, in a limited number of instances, dischargers may opt to construct facilities to divert stormwater to municipal wastewater treatment facilities. This is only likely to be undertaken where strategically feasible, such as in locations where municipal wastewater treatment facilities are proximate to areas with significant amounts of PCBs in urban runoff. These efforts would involve construction of pipelines connecting the storm collection system to municipal wastewater treatment facilities.

The implementation measures for the PCBs TMDL described above could contribute to two main types of air quality impacts: increased input of PM_{10} (as described above) from dust (in construction areas) and diesel exhaust emissions as well as an increase in vehicle exhaust emissions that contain air pollutants known to contribute to photo-chemical smog, i.e., ozone, cause annoyance odors, and potentially irritate respiratory systems (particularly in sensitive individuals). The impacts would result from use of heavy equipment during construction and construction activities and from increases in street cleaning, as well. Construction-related

impacts would be short-term; impacts associated with increases in street cleaning would also be short-term and minimal, but would occur on a regular basis.

Mitigation: Use of standard BMPs should reduce these impacts to less than significant levels. For particulate matter, the BMPs include, but are not limited to: spraying of construction and staging areas to control dust; covering all hauling trucks and maintaining adequate freeboard; using electric equipment when possible; ceasing construction activities during periods of high wind or episodes of poor air quality as identified by BAAQMD; using covered dust chutes for removal of building materials or equipment; developing and implementing soil management plans at all construction sites, and ongoing testing and monitoring to detect and eliminate airborne release of PCBs during remediation activities. Measures to mitigate vehicle exhaust emissions include use of construction and maintenance equipment with lower emission engines, use of soot traps or diesel particulate filters, and use of emulsified or low sulfur diesel fuel. Over time, vacuum-assisted street sweepers could be incorporated into municipal maintenance vehicle fleets, which generate less dust during operation than conventional street sweeping equipment.

In-Bay

Impacts: Remediation of PCBs-contaminated hot spots located along the margins of the Bay may result in short term impacts to air quality. These activities may involve the use of diesel-powered dredging equipment and barges to transport the dredged material. On a localized, short-term basis, this equipment could contribute particulate matter as well as some of the ozone precursors. In addition, disposal of material from remediation of in-Bay contaminated hot spots would most likely be disposed of at upland facilities. Upland disposal could also result in increased use of diesel-fueled trucks, which would increase the release of exhaust emissions with particulates (including PM_{10}) and the constituents of photo-chemical smog.

Mitigation: It is anticipated that standard BMPs would reduce these impacts to less than significant levels. Measures to mitigate vehicle exhaust and equipment emissions include use of construction and maintenance equipment with lower emission engines, use of soot traps or diesel particulate filters, and use of emulsified or low sulfur diesel fuel. For large-scale dredging project near-shore, use of electric-powered excavating equipment and barges would significantly reduce equipment and vehicle emissions of both particulates and pollutants without a consequent loss of performance.

4. Biological Resources

Impacts to biological resources would be considered significant if the project caused substantial adverse effects directly or indirectly on a special status species (e.g., listed threatened or endangered) or candidate species. Similarly, substantial adverse impacts to sensitive natural communities, including wetlands, are considered significant impacts due to the potential presence of endangered species. Conflicts with various resource policies and plans, such as Natural Community Conservation Plans, Habitat Conservation Plans, or local tree protection ordinances, if substantial, could also be considered significant impacts.

Implementation of the TMDL for PCBs could lead to projects or activities with impacts to biological resources in three areas as listed on the CEQA checklist:

Would the project:

Impact 4-A Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local, regional plans, policies, regulations or by California Department of Fish and Game or U.S. Fish and Wildlife Service.

Impact 4-B Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Game or the U.S. Fish and Wildlife Service.

Impact 4-C Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including. but not limited to, marsh, vernal pool, coastal, etc) through direct removal, filling, hydrological interruption, or other means.

These impacts are rated potentially significant for in-Bay projects as explained below. There are no known reasonably foreseeable impacts to biological resources from on-land projects; this rating is also explained below.

On Land

There are no reasonably foreseeable impacts to biological resources from implementation of the PCBs TMDL at on-land sites. Although removal of soil and sediment could occur as part of land-based implementation activities, PCBs are normally found in highly urbanized, industrial areas where the presence of sensitive native species and habitats such as wetlands is improbable. As a result, removal of soil and sediment, PCBs-contaminated equipment and building materials, or other remediation activities at on-land sites are unlikely to disturb any rare or sensitive species or habitats. Implementation measures developed to intercept, and treat stormwater or to divert, urban stormwater runoff to municipal wastewater treatment systems are only likely to occur at strategic locations in highly urbanized areas where urban runoff is identified as a source of PCBs or wastewater treatment facilities are in close proximity, which is most likely to be in urban industrial areas. Given these factors, on-land projects have no reasonably foreseeable impacts to biological resources.

In-Bay

Impacts: Implementation of the PCBs TMDL at in-Bay locations could include remediation of sites with PCBs-contaminated sediments. One approach to site remediation dredging is to remove contaminated sediment with offsite disposal or partial dredging combined with capping the remainder in-situ. In-Bay projects to remove PCBs-contaminated sediment would occur in near-shore areas, in sub-tidal or intertidal habitats or in some cases may include sensitive tidal marsh habitat. The size of these projects vary but are generally limited to less than 10 acres. Benthic macroinvertebrate community impacts in sub-tidal or intertidal habitats are generally short-lived. These communities are not considered to be a sensitive natural community. In marine environments, recolonization of stable benthic communities occurs in 3-5 years. In the San Francisco Bay, benthic communities are subject to perturbations due to the effects of salinity changes, wind-wave action and other Bay phenomenon. Changes in community structure occur naturally and therefore remedial dredging small areas of the Bay is not considered a significant environmental impact on biological resources. In addition, one of the reasons some of these sites are on the list of contaminated hot spots, other than because of PCBs, is because toxicity was identified as a concern for the benthic community.

Dredging for remediation of in-Bay contaminated sediment could cause potential impacts to sensitive anadromous fish species such as sturgeon and coho salmon. Impacts are also possible from removal of tidal marsh vegetation and disrupting waterfowl and other wildlife, including endangered species that inhabit such ecosystems through short-term noise and disturbance caused by the presence of humans.

Mitigation: Use of BMPs, and compliance with resource agency requirements, including USFWS, NOAA/NMFS and CDFG as part of formal or informal consultations required prior to issuance of Clean Water Act 401 water quality certifications by the Water Board and 404 dredging and filling permits should mitigate potentially significant impacts related to dredging of sediment contaminated by PCBs to less than significant levels. Specific mitigation measures include adherence to established work windows to time of dredging activities to avoid key seasonal activity of anadromous fish and bird species that inhabit near shore areas either seasonally or year round; use of electric dredge equipment; use of environmental (closed) clamshell buckets on dredges; and noise dampening material on equipment. Electric-powered dredging equipment has been used for San Francisco Bay dredging projects, such as in the Oakland Harbor. However, this technology is only feasible if the amount of material to be removed is very large and the site is close to shore. Projects that disrupt tidal marshes would be required to mitigate for the temporal and any long-term potential losses.

Any or all of these mitigation measures could be imposed on projects through the regulatory authority of the Water Board, under the Clean Water Act 401 water quality certification requirements. Therefore impacts to biological resources from in-Bay dredging projects would be mitigated to less than significant levels with mitigation incorporated.

5. Cultural Resources

Cultural resources encompass archeological, traditional, and built environment resources including, buildings, other structures, objects, districts, and sites. Significant impacts to cultural resources would occur if a project caused substantial adverse changes or destroyed cultural, historical, or archeological resources or disturbed human remains.

Implementation of the PCBs TMDL could lead to projects or activities with impacts to cultural resources in two areas as listed on the CEQA checklist:

Would the project:

Impact 5-B Cause a substantial adverse change in the significance of an archaeological resource pursuant to §15064.5.

Impact 5-D Disturb any human remains, including those interred outside of formal cemeteries.

These impacts are rated as less than significant as explained below.

<u>On Land</u>

Impacts: Implementation measures for the PCBs TMDL could include construction of facilities/units to intercept, divert and treat urban stormwater runoff; strategic routing of stormwater to POTWs, and removal of soil and sediment from PCBs-contaminated sites. Grading and excavation would affect near-surface soils in previously disturbed soils or artificial fill. Activities would not affect native soil or areas of high archeological sensitivity. Therefore these impacts are rated as less-than-significant.

In Bay

Impacts: Implementation of the PCBs TMDL could include dredging with offsite disposal and dredging combined with capping the remainder in-situ at sites identified as contaminated by PCBs. Such activities are most likely to be located in Bay-margin or near-shore areas adjacent to former industrial areas. It is possible, though unlikely, that dredging activities to remove PCBs-contaminated sediment in near-shore locations could uncover previously unmapped cultural resources, such as archeological sites.

6. Geology and Soils

Significant impacts to geology and soils would occur if a project exposed people or structures to potential, substantial adverse effects related to rupture of a known earthquake fault, other seismic events, or landslides. Significant impacts would also occur is a project caused substantial erosion or was located in areas with unsuitable soils or landslide-prone conditions. There are no known or reasonably foreseeable impacts to geology and soils as a result of reasonably feasible compliance measures to implement the PCBs TMDL. It is unlikely that agencies or other entities responsible for implementing this TMDL would select projects or project locations that would place people or structures at risk from seismic hazards or landslides or would develop projects requiring construction at sites with unsuitable soils.

7. Hazards and Hazardous Materials

This category refers to chemicals that have been discharged to the environment that may adversely impact the environment or human health and safety. Soil and groundwater impacted by such chemicals are also included classification. Significant impacts would occur if a project led to increased hazards to the public or environment from transport, handling, or emissions of such materials or if projects are located near airports and listed hazardous materials sites.

Implementation of the TMDL for PCBs could lead to projects or activities with impacts related to hazards and hazardous materials in the following three areas as listed on the CEQA checklist:

Would the project:

Impact 7-B Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment.

Impact 7-C Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.

Impact 7-D Be located on a site with is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.

These impacts are rated as less than significant as explained below.

On Land

Impacts: Actions to implement the PCBs TMDL would include handling and transport of equipment, building materials, soil and sediment containing PCBs or other potentially hazardous material. To protect people and the environment from potential impacts from PCBs-containing material they would be handled, transported, and stored in accordance with applicable laws and regulations.

Project workers and supervisors are required to comply with applicable Occupational of Health and Safety Administration (OSHA) training requirements for site clean-up personnel. In addition, site-specific health and safety plans would be prepared in accordance with Title 8, California Code of Regulations, §5L92 and Title 29, § 1910.120 of the Federal Code of Regulations, which govern site clean-up.

In-Bay

Impacts: There are also potential remediation projects at numerous sites within the Bay that have been identified as 'hot-spots' containing PCBs-contaminated sediment. These are also under the regulatory oversight of the Water Board, ACOE, U.S. EPA, DTSC, and BCDC. These sites were listed as toxic hot spots; the sediments are contaminated, but the available data indicate they are not at hazardous levels. Most of the available data for PCBs contaminant levels in bay sediments indicate levels below the hazardous waste designation level of >50 ppm. Many of these sites have other contaminants identified as co-occurring in the sediment; these other contaminants are also generally at levels that are not considered hazardous. Additional site investigation activities are necessary to better understand some of these sites, and feasibility studies would also be required, thus analyzing for the potential that some hazardous materials may be associated with these sites is speculative at this time.

To protect people and the environment from potential impacts from PCBs-contaminated sediment, the sediment would be handled, transported, and stored in accordance with applicable laws and regulations.

Project workers and supervisors are required to comply with applicable Occupational of Health and Safety Administration (OSHA) training requirements for site clean-up personnel. In addition, site-specific health and safety plans would be prepared in accordance with Title 8, California Code of Regulations, §5L92 and Title 29, § 1910.120 of the Federal Code of Regulations, which govern site clean-up.

8. Hydrology and Water Quality

Significant impacts to hydrology and water quality would occur if a project substantially alters existing drainage patterns, alters the course of a river or steam, violates water quality standards, or creates or contributes to runoff that would exceed local stormwater drainage systems. Significant impacts would also occur if a project placed housing or other structures within the 100-year flood plain, or exposed people or structures to significant risks from flooding, seiches, or tsunamis. There are no known, reasonably foreseeable impacts to hydrology and water quality from the PCBs TMDL as explained below.

Would the project:

Impact 8 – B Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would

drop to a level which would not support existing land uses or planned uses for which permits have been granted?

On Land

Implementation of the PCBs TMDL may include remediation projects involving removal of PCBs-contaminated soil and sediment. These projects could include activities such as excavation and backfill. They would not result in permanent changes to drainage patterns. In addition, because PCBs-contamination is most closely associated with their use in equipment such as transformers and building materials in older, highly urbanized, industrial areas, they are unlikely to occur in areas where hydrological changes or proximity to streams is of concern. Furthermore, the purpose of the PCBs TMDL and implementation plan is to attain water quality standards.

In-Bay

Remediation projects to remove PCBs-contaminated sediment through dredging are on-going in a number of locations along the Bay margin; sites are the subject of feasibility studies and others are at different stages of remediation. These projects are being undertaken under regulatory programs other than the PCBs TMDL and are not required by this TMDL. To the extent that the existing pace of cleanup is affected by this TMDL, it is anticipated that any new remediation activities for sites not currently being worked on could result in potentially significant impacts to water quality due to resuspension of contaminated sediments in the water column.

Mitigation: projects to remediate PCBs-contaminated sediment in hot spot sites through dredging or partial dredging and capping, would require a water quality certification under Section 401 of the Clean Water Act or waste discharge requirements issued by the Water Board and permit conditions to ensure that there are no violations of water quality. Examples of mitigation measures include the use of temporary sheet pile enclosures to prevent tidal action or deployment of silt curtains to protect water quality. In addition decant water resulting from hydraulic dredging activities would need to be treated prior to discharge into the environment or properly disposed of. Potentially localized short term impacts would be mitigated by these actions. In addition, these types of remediation activities are expected to result in improved water quality in the long-term. Therefore, impacts to hydrology and water quality from in-Bay dredging projects would be mitigated to less than significant levels with mitigation incorporated.

9. Land Use and Planning

Significant impacts to land use and planning would occur if a project physically divided a community, conflicted with a land use plan, policy or regulation, or caused conflict with a habitat conservation plan. There are no projects related to the PCBs TMDL that would be of a type or scale to cause any impacts in this category. Projects anticipated by the PCBs TMDL implementation plan would occur in urban or industrial areas or on the Bay margin and are not expected to result in substantial changes to established communities or land use patterns. Impacts to land use and planning are expected to be less than significant. Pilot studies to evaluate stormwater control measures, such as use of detention basins, will be conducted by land use agencies, i.e., municipalities and counties, and compatibility with land use will be evaluated as part of those pilot/feasibility studies. It is not reasonably foreseeable that large scale implementation of stormwater detention basins will occur as a result of this TMDL as it not feasible in a densely populated urban areas. The locations of such control measures are not specifically required by this project, and therefore, analyzing the impacts would be speculative at this time.

10. Mineral Resources

Significant impacts to mineral resources would occur if a project resulted in the loss of a mineral resource of value locally, regionally, or statewide. There are no projects related to the PCBs TMDL that would be of a type or scale to cause any impacts in this category. None of the PCBs-contaminated sites are known to occur on land identified as a mineral resource of local, regional, or statewide significance. There are no known or reasonably foreseeable impacts to mineral resources as a result of compliance with the PCBs TMDL.

11. Noise

Significant impacts from noise would occur if a project exposed people to noise or groundborne vibration in excess of excess of established standards in a local general plan or noise ordinance or resulted in substantial permanent increase to ambient noise levels. Significant impacts can also occur if a project causes substantial temporary or periodic increases in noise or if a project is located in the vicinity of an airport and would expose people residing or working in the project area to excessive noise levels.

Reasonably foreseeable means of compliance with the PCBs TMDL at on land locations include projects for removal and disposal of PCBs-containing equipment and building materials; remediation of PCBs-contaminated soil or sediment in public rights-of-way; storm water conveyances; and private property; increased street cleaning (sweeping and washing); storm drain and inlet maintenance above what is currently done. Other possible means of compliance include projects to construct, operate, and maintain facilities/units to intercept, divert, and treat stormwater (e.g., pipelines, detention basins, underground sand filters). For in-Bay control of sources of PCBs, potential means of compliance include projects to dredge PCBs-contaminated sediment. These projects could employ a variety of methods including dredging combined with capping. A small percentage of material removed by these projects may require disposal at approve facilities at upland sites. Noise impacts related to the TMDL are primarily short-term and related to construction activities.

According to the Federal Transit Administration's guidelines for evaluation of noise and groundborne vibration associated with construction activities, assessments of noise and vibration during construction are dependent upon a number of factors. These include proximity to sensitive receptors (schools, museums, some types of parks), characteristics of the soil and rock substrate to transmit vibration, sound-proofing characteristics of buildings, and the degree of noise already present in an area. It is difficult to determine the extent of noise impacts since site-specific factors are not currently known. In addition, impacts also vary based on the type of equipment used and the number of pieces of equipment operated simultaneously. The discussion below is, therefore, general in nature. However, with implementation of industry standard mitigation, we anticipate that all noise impacts could be mitigated to less than significant levels.

Implementation of the PCBs TMDL could lead to projects or activities with impacts related to noise in three areas as listed on the CEQA checklist:

Would the project result in:

Impact 11-A Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Impact 11-B Exposure of persons to or generation of excessive groundborne vibration or groundborne noise?

Impact 11-D A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Impacts 11-A and 11-D are rated as potentially significant, but less than significant with mitigation incorporated as explained below. Impact 11-B is less than significant and is also explained below.

On Land:

Impacts: Projects involving remediation of PCBs-contaminated sites, including removal of equipment or building materials; construction of facilities to treat or intercept and divert stormwater; and clean PCBs-contaminated sewer lines could cause short-term, localized noise impacts.

Mitigation: Individual projects with noise impacts would be subject to applicable local permitting requirements and noise ordinances. Local agencies require implementation of standard construction BMPs to reduce noise impacts, and include, but are not limited to practices such as restrictions on operating hours and use buffer materials around/on machinery. In some cases, use of hydraulic or electric equipment could be substituted for noisier diesel equipment. Newer equipment, which emits less noise, could also be used. For particularly loud or lengthy activities, temporary noise buffers could be installed.

In-Bay:

Impacts: Dredging activities to remove PCBs-contaminated sediment from near shore or Bay margin locations could produce potentially significant noise-related impacts because they may involve the use of sheet pile to dewater work areas. Installation of sheet pile may produce short-term, potentially significant noise impacts.

Mitigation: Individual projects with noise impacts would be subject to applicable local permitting requirements and noise ordinances. Local agencies require implementation of standard construction BMPs to reduce noise impacts, such as restrictions on operating hours, for example, typical standards include blackouts prohibiting use of heavy equipment on Sundays, early mornings and evenings all week, and on holidays). Buffer materials around/on machinery and engine and pneumatic exhaust controls could be used to control noise. In some cases, use of electric powered dredging equipment may be possible as a substitute for noisier diesel machinery.

12. Population and Housing

Significant impacts to population and housing would occur if a project substantially encouraged population growth, displaced substantial numbers of people from existing housing necessitating construction of replacement housing elsewhere. There are no projects related to the PCBs TMDL that would involve construction or removal of housing or bring large numbers of people to the Bay Area. There are no known or reasonably foreseeable impacts to population and housing as a result of compliance with the PCBs TMDL.

13. Public Services

Significant impacts to public services would occur if a project resulted in substantial physical impacts as a result of requirements for increased public services such as police, fire protection, schools, or other public facilities. There are no projects related to the PCBs TMDL of a type that would increase the need for police or fire services. There are no known impacts to public services as a result of the PCBs TMDL.

14. Recreation

Significant impacts to recreation would occur if a project increased the use of existing park facilities such that physical impacts occurred of if a project included construction or expansion of park facilities leading to physical impacts. Actions to implement the PCBs TMDL would not affect use of parks or other recreational facilities or lead to physical impacts to them. There are no known impacts to recreation as a result of the PCBs TMDL.

15. Transportation and Traffic

Significant impacts to transportation and traffic would occur if a project caused a substantial increase in traffic in relation to existing traffic load/capacity of the existing street system, exceeded established level of service standards, resulted in change in air traffic patterns, lead to increases in road-related hazards, resulted in inadequate emergency access or parking.

Assessment of transportation and traffic impacts normally requires extensive study of the project area, existing traffic patterns, loads, and level of service standards. In this programmatic review, such detailed analyses are not possible, since specific projects have not yet been developed. However, Water Board staff anticipates that some reasonably foreseeable means of compliance with the PCBs TMDL could result in impacts to as identified below.

Implementation of the PCBs TMDL could lead to projects or activities with impacts to transportation and traffic in two areas as listed on the CEQA checklist:

Impact 15-A Cause an increase in traffic substantial in relation to the existing traffic load and capacity of the street system.

Impact 15-B Exceed either individually or cumulatively a level of service standard established by county congestion management agency for designated roads and highways.

These impacts are rated as less than significant as explained below.

<u>On Land</u>

Impacts: Projects to implement the TMDL could include construction of facilities to treat stormwater or to strategically divert, stormwater to municipal wastewater treatment facilities for treatment. It could also result in projects for remediation or removal of PCBs-containing equipment and building materials. Remediation projects could be developed to remove soils and sediments from public rights of way, wastewater conveyances (in some limited locations), and private property. Finally, some dischargers may increase the frequency of maintenance of storm drain inlets and filtration systems as well as street cleaning (sweeping and washing).

Movement of personnel to and from work sites and hauling of equipment and materials to or from such construction or remediation sites as well as hauling of contaminated in-Bay sediments to upland disposal facilities, could potentially result in short-term impacts to traffic.

Increases in the frequency of street cleaning and maintenance activities at storm drain inlets or filters could result in a minor increase in traffic.

The location, routes, and scale of such projects and activities are currently unknown and thus the impacts of any individual project would be speculative. However, standard industry practices require a traffic management plan, which includes measures such as strategic route selection and carefully planned timing for haul-truck traffic, traffic impacts would be minimized. Other traffic, such as from street cleaning, would add only very small volumes of traffic that would not affect levels of service, roadway networks, or parking capacity. We anticipate that impacts to traffic and transportation would be less than significant levels.

In-Bay

As described above, site remediation at in-Bay locations may produce some material that does not meet new standards for in-Bay disposal. In that case, this material is most likely to be transported to appropriate on-land sites, possibly increasing traffic. However, given the small percentage of material likely to be involved and the ability to control timing and route to minimize effects, this is impacts is considered less than significant.

16. Utilities and Service Systems

Significant impacts to utilities and service systems would occur if a project exceeded wastewater treatment standards, required construction of new water or wastewater treatment facilities, new or expanded storm water drainage facilities, or a project's water needs exceeded existing resources or entitlements. Significant impacts would also occur if a project was not served by a landfill with sufficient capacity or the project failed to comply with federal, state, or local regulations for solid waste.

Implementation of the PCBs TMDL could lead to projects or activities with impacts to utilities and service systems in three areas as listed on the CEQA checklist:

Would the project:

Impact 16-B Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

Impact 16-C Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.

These impacts are rated as potentially significant, but less than significant with mitigation incorporated as explained below.

On Land

Impacts: Projects to implement the PCBs TMDL could include construction of new facilities to intercept or treat stormwater or to divert stormwater runoff to municipal wastewater facilities for treatment. While it is not anticipated that retrofits to stormwater drainage systems, construction of new stormwater treatment control measures, or diversion to POTWs, would be significant, construction of any of these facilities could be viewed as potentially significant. The number and location of projects of this type is currently unknown. Pilot studies to evaluate stormwater control

measures will be conducted by stormwater management agencies. In addition, the implementation plan calls for pilot studies to evaluate the feasibility of routing stormwater to POTWs, and this would be conducted by individual stormwater agencies or municipal wastewater districts.

Mitigation: Mitigation for these projects is linked to careful site selection. The implementation plan notes that interception and diversion of stormwater is an option that could be employed where strategically feasible, such as areas where stormwater systems and municipal treatment facilities or conveyances are close together. The benefits of this are lowered cost and lowered potential environmental impacts.

The specific mitigation measures could include, but are not limited to, pre-construction BMPS, such as appropriate site selection and environmentally-friendly design; during construction, the use of standard construction BMPs appropriate to the conditions at a site; and for the project as a whole, measures appropriate to offset impacts, such as habitat restoration or enhancement, contributions to mitigation banks, etc.

In-Bay

This category is not applicable to in-Bay projects.

12.7. Mandatory Findings of Significance

The results of this analysis demonstrate that the means of compliance with TMDL for PCBs in San Francisco Bay and its Implementation Plan will not have any reasonably foreseeable potentially significant impacts on the environment that cannot be mitigated to less-than-significant levels.

With implementation of mitigation measures identified in the environmental checklist and required by federal, state, and local laws and regulations, impacts having a potential to degrade the environment would be reduced to less than significant levels.

Pursuant to Section 13360 of the Water Code, the Water Board cannot mandate which compliance measures responsible agencies may choose to adopt or which mitigation measures they would employ for projects to implement the PCBs TMDL that do have potentially significant impacts. However, the Water Board anticipates that appropriate mitigation measures, which are already widely in use and considered consistent with industry standards, be applied as necessary, in order to avoid and reduce as well as mitigate potential environmental impacts. These measures should ensure that impacts are reduced to less than significant levels. Since the decision to perform these measures is strictly within the responsibility and jurisdiction of the individual implementing agencies, such measures can and should be adopted by these agencies (Title 14, California Code of Regulations, Section 15091 (a) (2)).

12.8. Cumulative Impacts and Other Analyses

Cumulative Impact Analysis

This section provides an analysis of the significant cumulative impacts of the proposed Basin Plan amendment (CEQA Guidelines Section 15130). Cumulative impacts refers to “two or more

individual effects which, when considered together, are considerable or which compound or increase other environmental impacts."

The cumulative impact that results from several closely related projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present and reasonably foreseeable probable future projects. In this case, these are the impacts from non-TMDL required municipal and private projects to reduce PCBs that would occur in the watershed during the period of implementation of the TMDL.

Approach to Cumulative Impact Analysis

The areas of cumulative impacts analyzed in this section include: 1) the program level cumulative impacts and 2) the project level cumulative impacts. On the program level, the PCBs TMDL is one of several TMDLs planned or already adopted to address impairment in the San Francisco Bay. Other adopted or planned future TMDLs for San Francisco are considered in this program cumulative analysis. On the project level, the full environmental analysis of individual projects is the purview of the implementing counties/municipalities, POTWs or other agencies with approval authority. The cumulative impact analysis included here entails consideration of other stormwater control measures implemented in the past and present, planned future upgrades of wastewater treatment plants, and past, present and future cleanup actions for in-Bay contaminated hot spots.

Adoption of the Basin Plan amendment is intended to facilitate implementation of the TMDL. However the requirements identified in the TMDL implementation plan are generally implemented through NPDES permits, waste discharge requirements or other regulatory tools. Agencies other than the Water Board will likely use regulatory and non-regulatory tools in implementing the PCBs TMDL. The Basin Plan amendment would be cumulatively beneficial to the environment in terms of some resource areas. Conceptually, the impacts associated with improving water quality through the TMDL, if occurring with other construction projects, could contribute to temporary cumulative effects to air quality, noise or traffic impacts that would not occur with only one project.

Overall the cumulative effect is to provide an environmental benefit to the San Francisco Bay and achieve compliance with existing adopted water quality standards established by the U.S. EPA and this Water Board.

Program Cumulative Impacts

The Water Board has adopted one TMDL for San Francisco Bay. The Mercury TMDL for San Francisco Bay (adopted by the Water Board on August 9, 2006 and by the State Board on July 17, 2007) was developed due to impairments from mercury. Many of the reasonably foreseeable methods of compliance for one TMDL are the same as or similar to those that will be used to address other pollutants through the implementation of other TMDLs. In terms of stormwater, best management practices and control measures that are applicable to PCBs are likely to be similar measures to those being implemented for mercury in the urban watershed. On-land control measures for mercury also target mine sites in the watershed and would therefore be conducted in addition to on-land control measures for PCBs. The potential implementation strategies discussed in this document for the PCBs TMDL are likely relevant to the implementation of other TMDLs for the San Francisco Bay.

In addition, TMDLs for selenium, legacy pesticides, and dioxins other than dioxin-like PCBs, are in development for the San Francisco Bay and a TMDL for pathogens is in development for Richardson Bay.

Project Cumulative Impacts

Specific TMDL projects must be environmentally evaluated and cumulative impacts considered as the implementing municipality or agency designs and sites the project. However, as examples, TMDL projects and other construction activities may result in cumulative effects.

With regards to cleanup of PCB-contaminated hot spots, the TMDL requires only the collection of information about in-Bay contaminated hot spots; it does not require other actions at these sites and does not set cleanup standards to be achieved at these sites. Investigation and cleanup of contaminated in-Bay hot spots are already underway at many sites in the Bay without the adoption of the TMDL. The one part per billion sediment goal is not a cleanup goal or regulatory standard. Thus, the one part per billion sediment goal will not require a large-scale, bay-wide mass removal of contaminated sediments from in-Bay hot spots. Table 23 lists the sites where cleanup of contaminated in-Bay sediments sites have occurred in the past, those that are in the process of being addressed, and sites where some studies may have been completed but no plans currently exist for any actions to be taken. Since the TMDL does not call for specific actions to be taken, and it is unclear whether actions will be taken in the future at sites where work has yet to be started, an evaluation of the cumulative environmental impacts are speculative. However, to the degree enough information may be available to provide a general response, they are provide below by subject category.

Air Quality

Implementation of the PCB TMDL Program may cause additional emissions of ozone precursors, $PM_{10,}$ and slightly elevated levels of carbon monoxide during construction activities. Emissions of PM_{10} resulting from implementation of TMDL compliance measures may exceed the thresholds established by the Bay Area Air Quality Management District (BAAQMD), and therefore the TMDL, in conjunction with all other construction activity, may contribute to the region's nonattainment status. However, the BAAQMD CEQA guidelines (BAAQMD 1999) state that cumulative impacts should be determined based on an individual project’s consistency with applicable local General Plans and whether it would affect conformance of the General Plan with the regional air quality plan. The majority of the implementation measures under consideration as reasonably foreseeable means of compliance with the TMDL do not result in operational activities that would increase emissions in the areas due to an increase in population or vehicular traffic that would be sustained over time.

The control measure that might increase vehicular traffic is street sweeping/cleaning and storm drain maintenance. Past and current stormwater control measures focus on street sweeping and litter/debris removal, which results in vehicular traffic. This TMDL would increase the amount of vehicular traffic in an incidental fashion as the areas that would be subject to increased street sweeping are geographically small and limited to industrial, former industrial or small adjacent residential areas of municipalities and the cumulative impacts due to the individual impacts from this project when considered with the impacts from existing street sweeping activities are not anticipated to be significant.

The cumulative impacts to emissions of criteria pollutants and greenhouse gases are not anticipated to be significant. Cleanup actions taken at in-Bay contaminated hot spots in the past,

present, or planned for the future involve dredging for PCB contaminated sediments in sites smaller than 10 acres and the list of contaminated hot spots has only 21 sites listed (Table 23). Removal actions conducted or planned at contaminated hot spots in the bay to-date range from a few thousand cubic yards to less than 100,000 cubic yards (Battelle 2005, U.S. Navy 2006b, U.S. Navy, 2007 and URS, 2002a). Construction activities at these sites may create short-term impacts. However, these activities do not occur simultaneously and are located in different parts of San Francisco Bay. It takes a number of years to evaluate and select a remedial alternative and thus it is unlikely that multiple projects will be occurring simultaneously. Therefore, the cumulative impact of these projects are not anticipated to be significant. In addition, these types of construction activities are accounted for in the BAAQMD's emissions inventory in the regional air quality plan.

Biological Resources

Many of the compliance measures required under the TMDL are located in urban, industrial areas, do not impact sensitive habitats or biological resources. Where in-Bay contaminated hot spot cleanups conducted in the past have had the potential to impact biological resources, they have been required to mitigate by waste discharge requirements or 401 water quality certifications for the temporary impacts to sensitive wetlands and to monitor to ensure site vegetation and habitat restoration. In addition, mitigation measures for the protection of listed or endangered species are required where applicable. For example, construction is required to operate outside of nesting seasons and during migratory fish passage windows. These mitigation measures are required by any agency with approval authority for the cleanup actions.

The cumulative impacts to biological resources, i.e., destruction or damage to healthy benthic communities due to the excavation of PCBs-contaminated sediment from in-Bay PCB contaminated hot spots are not anticipated to be significant. Cleanup actions taken at in-Bay contaminated hot spots in the past have involved dredging for PCB contaminated sediments in sites smaller than 10 acres and the list of contaminated hot spots has only 21 sites listed (Table 23). Benthic macroinvertebrate community impacts in sub-tidal or intertidal habitats are generally short-lived; these communities have the ability to recolonize in a few years and are not considered to be a sensitive natural community. In San Francisco Bay, changes in benthic community structure occur naturally and therefore remedial dredging of small areas of the Bay is not considered a significant environmental impact on biological resources.

Cultural Resources

Implementation of the PCBs TMDL is not expected to contribute to a cumulative loss of cultural resources in the San Francisco Bay area. The activities related to past, present or future contol of external loading of PCBs to San Francisco Bay or remediation of In-Bay PCB-contaminated hot spots are not known, or likely, to contain cultural resources that would be lost or contribute to a cumulative loss or to impact historic districts in the Bay area.

Hazards and Hazardous Materials

Projects to cleanup on-land contamination and in-Bay contamination from PCBs in soils and sediment have been on-going in the San Francisco Bay area since the ban was enacted on PCBs. The greatest concern is in the safe transport and treatment, storage and disposal of hazardous materials. The implementation of the PCBs TMDL and all other cumulative projects must comply with the applicable laws and regulation pertaining to public safety in the transport, treatment, storage and disposal of hazardous materials. Thus, cumulative impacts would be less than significant. In addition, addressing sources of these contaminants in the environment has a cumulatively positive impact on the environment.

Hydrology and Water Quality
Implementation of the PCBs TMDL is expected to result in long-term improvement in water quality by reducing the potential for introduction of PCBs into San Francisco Bay. Other TMDLs are addressing other pollutants responsible for impairing water quality in San Francisco Bay, and thus, the cumulative impact of other program, as well as specific, projects constructed to meet Clean Water Act requirements, have resulted in long-term improvements in water quality and are expected to continue this improvement.

Land Use and Planning
The cumulative impacts to land use and planning and landfill capacity are not anticipated to be significant. Cleanup actions taken at in-Bay contaminated hot spots in the past have involved dredging for PCBs-contaminated sediments in sites smaller than 10 acres, and the list of contaminated hot spots has only 21 sites listed (Table 23). Cleanups conducted in the past or planned for the future for remediation of contaminated hot spots have occurred in the vicinity of industrial sites, brownfields, redevelopment sites and former military bases. There has been sufficient land available to process hydraulically dredged sediments prior to off-site disposal at landfills. There has also been adequate landfill capacity in the past, and in some cases, the dried sediment was clean enough to be used as alternate daily cover at landfills. In some cases, material was allowed to be managed upland at industrial sites or remain in-Bay, if properly managed, i.e., capped and isolated in place.

The TMDL does not envision the use of multiple, large detention basins capable of treating all Bay area stormwater. Much of the available land in the Bay Area has been developed for housing, industrial or commercial purposed. Stormwater management agencies are required to conduct pilot studies to evaluate the effectiveness of such control measures prior to strategically implementing them. Therefore, there is no basis to conclude that the proposed project would result in cumulative impacts to land use.

Noise
Construction activities associated with the implementation of the PCBs TMDL in combination with other noise-generating sources may exacerbate noise conditions in some locations, however, these impacts are short term in nature. Most noise is associated with traffic. Noise levels from construction activities, once completed, would return to current levels. Other activities, such as street sweeping, are expected to occur intermittently, over small geographical areas and be of short term duration. Overall, with mitigation, the activities resulting from the PCBs TMDL would not be expected to contribute considerably to a cumulative noise impact.

Transportation and Circulation
Implementation of control measures will create additional short terms increases during construction and maintenance. Implementation, after successful completion of the initial pilot studies, will likely be staggered over time and will occur in a few locations throughout the watershed. This decreases the likelihood that these projects cumulatively will cause significant impacts. The PCBs TMDL would require implementation of control measures and best management practices in locations within the watershed where existing land use indicates a historical use of PCBs. Most of the implementation measures, for example, additional street sweeping, are unlikely to create significant cumulative impacts.

Existing stormwater runoff permits currently require the installation of control measures at new developments or redevelopment projects. Some cities in the Bay area are actively requiring

construction of stormwater control measures as part of new development projects. These control measures are generally smaller elements of much larger construction projects, residential subdivisions, commercial high rises, and these larger projects require a consideration of the permanent impacts to traffic and transportation. The stormwater control measures are thus inconsequential to these projects.

Overall, it is anticipated that implementation of the TMDL is unlikely to create cumulatively permanent, significant additions to traffic or transportation.

Utilities and Service Systems
Implementation of the PCBs TMDL would not increase water use. There is the possibility that strategically routing of stormwater to wastewater treatment plants would increase the amount of wastewater processed by these plants. However, the requirement of the TMDL is to evaluate the feasibility of this type of approach with an emphasis on using currently available existing capacity at municipal treatment plants. Therefore no significant additions to wastewater treatment plants are expected. The addition to the plant facilities would be limited to construction of pipelines or pumping capacity to route the stormwater. A few wastewater treatment plants in the Bay Area are planning upgrades to their facilities, improving their capacity or collection system rehabilitation. Some of these facilities have analyzed the environmental impacts of these activities and others are still in the planning stages. All these projects are anticipated to conform with their General Plans. It is not anticipated that construction to support routing of stormwater will create a significant impact on available services.

Growth Inducement
Approval and implementation of the proposed Basin Plan amendment would have no direct effect on growth inducement. Implementation of the PCBs TMDL would not directly or indirectly foster economic or population growth or the construction of additional housing. The project does not require the construction of additional capacity at wastewater treatment plants that might be considered to indirectly foster growth.

Significant Irreversible Changes in the Environment
Approval and implementation of the proposed Basin Plan amendment would result in the irretrievable commitment of petroleum products to fuel vehicles and equipment and the creation of some greenhouse gases that might be viewed as contributing to significant irreversible environmental changes already occurring globally.

12.9. Alternatives Analysis

The discussion that follows evaluates four alternatives to the proposed Basin Plan amendment establishing the PCBs TMDL. It presents a brief evaluation of each alternative. None of the alternatives evaluated significantly lessen the environmental impacts of the proposed project. The proposed project is not expected to result in significant impacts that cannot be mitigated and thus it is not reasonable to look to other alternatives to lessen significant impacts. Some of the alternatives do meet some of project's objectives. However, they generally result in attainment of water quality objectives in a longer period of time and thus do not meet one of the primary objectives which is attainment of water quality objectives in the shortest time frame possible. In addition, there would be a longer period of time during which the environmental

impact of exposure to Bay fish contaminated with PCBs would continue. The proposed project is thus the preferred alternative.

No Project Alternative

The "No-Project" alternative means that the Water Board would not adopt the Basin Plan amendment that establishes the numeric fish tissue target and associated PCBs TMDL, allocations, implementation plan, monitoring requirements, or special studies. A "No-Project" alternative would not set targets, nor would monitoring be required to demonstrate achievement of those targets or protection of beneficial uses. The Regional Monitoring Program (RMP) may continue to collect and evaluate data on the status and trends of PCBs in San Francisco Bay.

The "No Project" alternative is anticipated to achieve some of the objectives of the proposed project, including protection of the beneficial uses for sport fishing and wildlife habitat. As seen in Figure 28, the Bay is projected to recover without the project due to natural attenuation of PCBs in the environment. However, it would take nearly 100 years to attain the desired condition, about 60 years more than if the proposed project alternative is implemented. The "No-Project" alternative would delay recovery of the Bay and attainment of beneficial uses by about 60 years, and unduly prolong the associated impacts to Bay sports fish consumers. This alternative would unnecessarily maintain human health risk to Bay sport fish consumers for a longer time than under the proposed project. Thus, it would not meet the objective of attaining water quality objectives in as short a time frame as feasible.

Finally, the "No-Project" alternative would not lessen the environmental impacts over the proposed project because 1) other regulatory programs already require many of the actions and the associated environmental impacts of the proposed project, and 2) the environmental impacts of exposure to PCBs contaminated Bay fish would continue for a longer period of time than with the proposed project and there would be no measures to address risk management of the potential health impacts of consuming PCB-contaminated Bay fish.

Alternative TMDL of 20 kg/yr

We considered doubling the TMDL to 20 kg/yr, using the same long-term mass balance model used to set the proposed TMDL. A higher TMDL of 20 kg/yr would result in higher load and wasteload allocations for each source category. This alternative will result in attainment of the TMDL target in about 70 years. This alternative would delay recovery of the Bay and attainment of beneficial uses by about 30 years, and unduly prolong the associated impacts to Bay sports fish consumers. This alternative would unnecessarily maintain human health risk to Bay sport fish consumers for a longer time than under the proposed project. Under this alternative, we could assign a higher load allocation to the Central Valley, resulting in earlier attainment of the allocations. However, wasteload allocations for industrial and municipal wastewater would remain the same, as they are set at current performance. Therefore, the proposed implementation actions for industrial and municipal wastewater dischargers would remain the same and the associated environmental impacts would remain the same. The stormwater wasteload allocations would likely increase under this alternative. However, there would still be a need for load reductions from stormwater discharges, maintaining the requirements for stormwater agencies to evaluate and implement PCBs source and treatment control BMPs through pilot studies as in the proposed project. Requirements for in-bay contaminated sites, special studies, monitoring, dredgers, and risk management would remain the same as in the proposed project under this alternative. This alternative would not significantly change

environmental impacts compared to the proposed project. As the implementation actions would remain the same under this alternative, i.e., implementation requirements for wastewater, stormwater, Central Valley, in-bay contaminated sites, special studies, monitoring, navigational dredging, and risk management in the first phase of implementation would remain the same.

Alternative Based on Equal Percentage Load Reductions

Under this alternative, we could propose load and wasteload allocations based on an equal percentage reduction from each source category to achieve the TMDL of 10kg/yr. This alternative would result in a higher wasteload allocation to stormwater, and lower allocations to all other source categories. Figure 31 below presents the proposed equal percentage load reductions.

This alternative is not acceptable for several reasons. First, this alternative allows stormwater, the highest controllable source of PCBs in the watershed, to continue to discharge PCBs in sediment at concentrations above the sediment goal. This is anticipated to delay recovery of the Bay from impairment and attainment of beneficial uses. The environmental impacts of exposure to PCBs contaminated Bay fish would continue for a longer period of time than with the proposed project. Increased stormwater load allocations would not relieve the need for implementation of source and treatment control BMPs for PCBs to the maximum extent practicable. As such, it would be speculative to contend that there would be either increased or reduced environmental impacts associated with increased stormwater load allocations. Third, this alternative would place a large financial burden on industrial and municipal wastewater treatment plants. Most treatment plants would need to upgrade to advanced treatment technology to lower PCBs loads to meet the wasteload allocations under this alternative. This would require a large capital investment for wastewater treatment plants upgrades to achieve small load reductions and potential increased environmental impacts to air quality and noise due to the facility upgrades. Requirements for in-bay contaminated sites, special studies, status and trend monitoring, navigational dredging, and risk management would remain the same as in the proposed project under this alternative and thus any relevant environmental impacts would be the same.

This alternative would not significantly change environmental impacts compared to the proposed project. Increased stormwater wasteload allocations would still require load reductions from stormwater discharges, maintaining the requirements for stormwater agencies to evaluate and implement PCBs source and treatment control BMPs through pilot studies as in the proposed project. It would be speculative to contend that there would be either increased or reduced environmental impacts associated with increased stormwater load allocations.

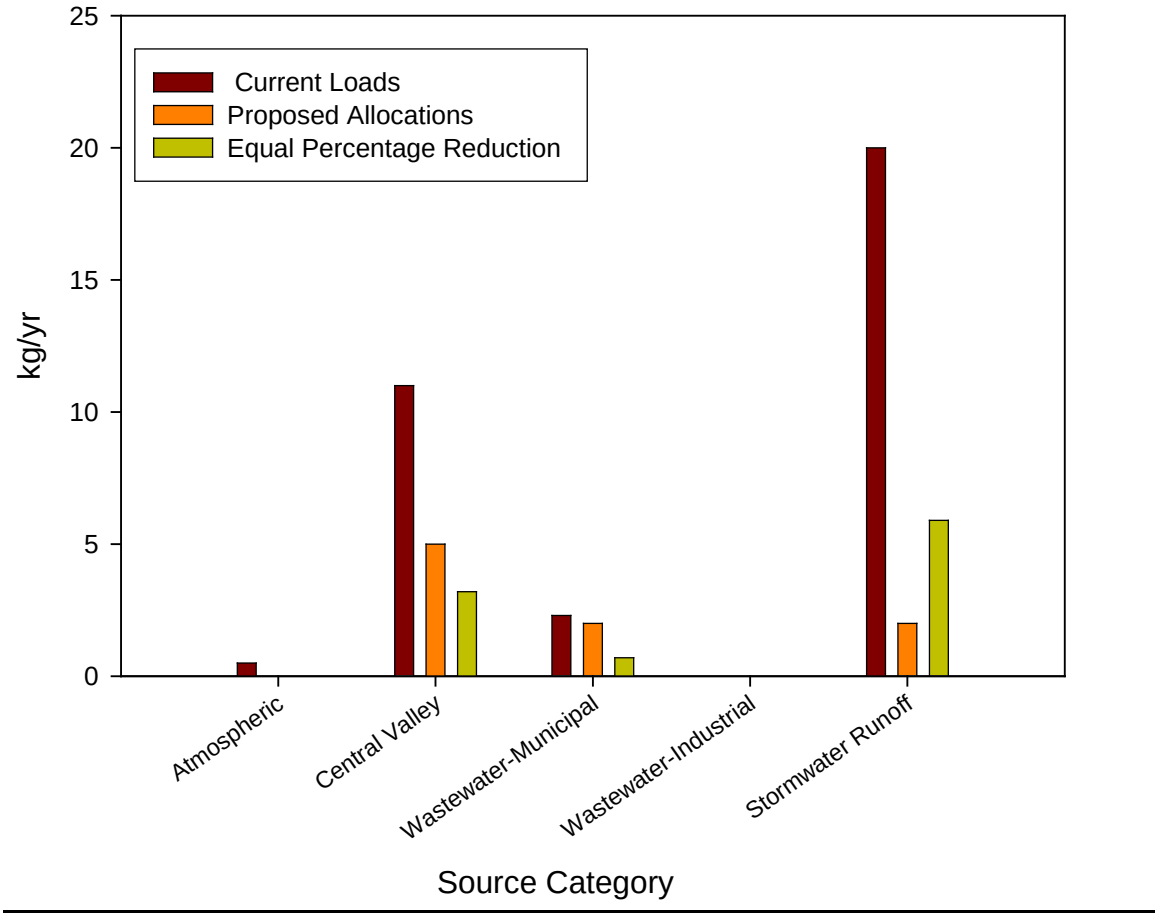


Figure 31-Current Loads, Proposed Allocations and Equal Percentage Reduction Alternative Allocation

Lowest Possible Cost Alternative

Under this alternative, we would propose a TMDL that would attain the project objectives at the lowest possible costs. This alternative would establish a TMDL and set a fish tissue target but would limit implementation to existing on-going implementation actions and monitoring requirements. No new implementation actions, special studies, or pilot studies to evaluate stormwater control measures would be required under this alternative.

As with the “No Project” alternative, the lowest possible cost alternative would achieve some of the objectives of the proposed project, including protection of the beneficial uses for sport fishing and wildlife habitat. As seen in Figure 28, the Bay is projected to recover without the project due to natural attenuation of PCBs in the environment. However, it would take nearly 100 years to attain the desired condition, about 60 years more than if the proposed project alternative is implemented. The “No-Project” alternative would delay recovery of the Bay and attainment of beneficial uses by about 60 years, and unduly prolong the associated impacts to Bay sports fish consumers. This alternative would unnecessarily maintain human health risk to

Bay sport fish consumers for a longer time than under the proposed project. Thus, it would not meet the objective of attaining water quality objectives in as short a time frame as possible.

Finally, the lowest possible cost alternative would not lessen the environmental impacts over the proposed project because: 1) other regulatory programs already require many of the actions and the associated environmental impacts of the proposed project, and 2) the environmental impacts of exposure to PCBs contaminated Bay fish would continue for a longer period of time than with the proposed project and there would be no measures to address risk management of the potential health impacts of consuming PCB-contaminated Bay fish.

12.10. Economic Considerations Related to Potential Implementation Plan Actions

The California Environmental Quality act requires that whenever a Water Board adopts a rule that requires the installation of pollution control equipment or establishes a performance standard or treatment requirement, it must conduct an environmental analysis of reasonably foreseeable means of compliance. This analysis must take into account a reasonable range of factors, including economics. This proposed Basin Plan Amendment for the PCBs TMDL includes performance standards (e.g., targets and allocations). This part of the Staff Report discusses the reasonably anticipated costs associated with implementation methods and monitoring that might result from the proposed Basin Plan amendment.

Discussion of Costs

The costs of implementation actions are difficult to estimate because the PCBs TMDL implementation plan applies to the entire nine-county, Bay-wide region and applies to numerous public agencies as well as individual dischargers all of which have a variety of ways to comply with the plan and will be guided in selecting those implementation measures by their technical needs and budgetary constraints. Thus it is difficult to anticipate which implementation measures are most likely to be adopted. Furthermore, phased pilot or feasibility studies will be used to identify and evaluate the feasibility (which includes relative costs and effectiveness) of most compliance measures. These assessments need to be completed before the dischargers select which action or combination of actions will be most effective and appropriate to their allocations. Also, as mentioned previously, many of the implementation measures are part of ongoing programs, and will only result in incremental increases to costs of existing programs.

These factors result in the likelihood that short-term costs will be modest. In the longer term, achieving the proposed allocations set by the TMDL may be more substantial for some dischargers. However, the implementation plan and schedule provide an opportunity to analyze alternative means of compliance and time to identify and secure adequate funding. Furthermore, because PCBs adhere to soil as do numerous other pollutants such as PBDEs, PAHs, chlorinated legacy pesticides, and heavy metals, efforts to reduce PCBs loads to the Bay will produce multi-pollutant reduction benefits. Thus, some of the costs to comply with this TMDL will also result in compliance with other TMDLs and regulatory requirements for those other pollutants.

This discussion provides an overview of the relative costs for each of the source categories that are required to implement new actions, or increased actions to attain allocations or implementation requirements. Cost information is based on similar work performed elsewhere and the best professional judgment of Water Board staff. All costs discussed below are rough estimates and only provide an order-of-magnitude characterization of costs. The main focus of the implementation plan is on control of PCBs in stormwater. Thus, the largest implementation

costs are anticipated to result from implementation of the stormwater runoff allocation portion of the TMDL.

The following provides an overview:

Municipal and Industrial Wastewater Dischargers

Wastewater dischargers are required to maintain optimum treatment performance for solids removal and identify and manage controllable sources, i.e., maintain their existing performance. Existing overall annual wastewater management costs exceed $500 million to control all pollutants in wastewater, including PCBs.

The costs of implementing the TMDL is considered to be incidental increases associated with identifying and managing controllable sources. For municipalities, we expect this effort would be part of existing pollution prevention and source control programs and new costs would be minimal. Industrial facilities are already required to manage their use of PCBs. Use of PCBs is allowed in enclosed containers such as in transformers and capacitors. However, as this equipment ages, it must be removed and replaced with PCBs-free products. There will be some new costs associated with conducting or causing to conduct monitoring and special studies to fill critical data gaps and to participate in risk management activities (see discussion below).

Stormwater Runoff Dischargers

The costs of attaining load reductions above and beyond natural attenuation may be substantial. Five California municipalities and one metropolitan area with stormwater programs that were demonstrating meaningful progress toward maximum extent practicable compliance were surveyed for their stormwater compliance costs in the 2002/2003 time frame (SWRCB, 2005). Annual cost per household for the six stormwater programs surveyed ranged from $18 to $46. The City of Fremont, included in this cost survey, has costs estimated at $46 per household. The majority of these program costs were for street sweeping and litter/debris removal. We estimate Bay Area municipalities currently spend approximately $100 million per year to manage urban stormwater runoff (assuming 2.5 million households and average fees of $40 per year per household). An upper bound estimate of the cost of complying with stormwater control requirements for all pollutants, including PCBs, can be thought of in terms of the costs of treating wastewater in the Bay area. The load allocations in the TMDL for stormwater and wastewater are equal. The current cost of treating wastewater, $500 million annually, results in wastewater loads which are equal to what the Basin Plan amendment allocates for stormwater. We consider $500 million to be the reasonable cost estimate to the stormwater runoff management agencies annually. The $500 million would translate into average fees of $200 per year per household.

The TMDL implementation plan calls for dischargers to conduct pilot studies of best management practices and control measures. Based on these studies the effective, cost-efficient control measures will be implemented through NPDES permits. It is anticipated that the overall costs are likely to be less than $500 million per year.

These include:

- Removal and disposal of PCBs from building materials
- Remediation of contaminated soil or sediment in public rights-of-way, wastewater conveyances, and private property

- Street cleaning (includes sweeping or washing)
- Storm drain and inlet maintenance (above and beyond normal practices)
- Construction, operation, and maintenance of facilities/units to intercept, divert, and treat urban stormwater runoff (e.g., detention basins, wetlands, underground sand filters, swales)
- Diversion of urban storm water runoff to wastewater treatment

To provide further perspective on costs, we expect that facilities which treat urban stormwater runoff will have the highest costs of these options. As discussed in the Implementation Plan section of this report, we anticipate discharger's pilot studies will include consideration of strategic runoff treatment in areas with elevated PCBs in soils/sediments, such as older industrial urban areas. Underground sand filters, such as the Austin sand filter, are likely retrofit treatment unit candidates in these areas. Typically the Austin sand filter system is designed to handle runoff from drainage areas up to 50 acres (USEPA, 1999b), and Caltrans has considered these filters for treatment of highway runoff and has estimated the cost of installing the Austin sand filter unit at around $240,000 (Caltrans, 2004). The Ettie Street pump station drainage area in Oakland, CA, which encompasses 100 acres, is one of the industrial urban areas that drain to the Bay that have high levels of PCBs in storm drain sediments. In the case of Ettie Street watershed, installing Austin sand filters to treat the entire drain area would cost less than $5 million, based on the above figures. Assuming there are about 20 Ettie Street-like watersheds that have high levels of PCBs in storm drain sediments that drain to the Bay, the cost of installing these sand filters would be around $100 million. Annual costs for maintaining sand filter systems average about 5 percent of the initial construction (USEPA, 1999b). These are rough estimates, but they likely represent the order of magnitude of costs of retrofit treatment units.

The proposed implementation plan and schedule provides opportunity to analyze alternative means of compliance and allows time for urban stormwater runoff agencies to secure reasonable funding. There will be some new costs associated with conducting or causing to conduct monitoring and special studies to fill critical data gaps and to participate in risk management activities (see discussion below.)

Navigational Dredging and Disposal

The proposed sediment dredging and disposal implementation actions are based on the Long Term Management Strategy for the Placement of Dredged Material in the San Francisco Bay Region (USACE, 1998) which is already being implemented. We estimate the current annual costs of dredging and dredged sediment disposal exceeds $50 million per year. Although the LTMS is expected to result in substantial costs over time as less dredged material is disposed of in the bay and more is disposed of in the ocean or at upland sites, little or no new costs should be incurred as a result of this PCBs TMDL and implementation plan, because the overall goal of the LTMS is to limit in-Bay disposal and to the degree the TMDL requires less in-Bay disposal it is furthering the LTMS program's overall goals. There will be some new costs associated with conducting or causing to conduct monitoring and special studies to fill critical data gaps and to participate in risk management activities (see discussion below).

In-Bay Contaminated Sediment

A number of sites within the Bay have already been cleaned-up or are currently undergoing remediation or feasibility studies to determine the type and level of clean-up required. The costs per site vary significantly; a few past and planned projects are discussed below.

In 2001, remedial actions, including dredging three feet of PCB and metal contaminated sediment and placement of an underwater isolation cap were completed for the offshore portion of the former U.S. Steel property in South San Francisco (URS, 2002b). A total of 20,100 cubic yards of sediment were removed from San Francisco Bay at this site. 14,100 cubic yards were dredged from the subtidal area and 6,000 cubic yards were removed using land-based equipment from the intertidal area. The majority of the sediments were taken to a landfill for disposal. The cost of this cleanup was estimated to be about $12 million for three acres.

A Draft Final Feasibility Study for Parcel F (offshore PCB-contaminated sediments) completed for Hunters Point Shipyard (U.S. Navy, 2007) evaluated a range of alternatives from no action, to complete removal and off-site disposal and included a number of alternatives and a mix of remedial actions, including focused removal, off-site disposal and monitored natural recovery. Other than no action, the costs of conducting some level of active remediation were from $13,060,000 to $42,630,000. The costs included base costs, including costs for remedial design and construction, as well as future costs for 30 years of operation and maintenance. The costs of monitored natural recovery, an element of multiple remedial alternatives, were considered to include the costs of deed restrictions, (documentation, posting and enforcement) baseline monitoring, (bathymetric survey and sediment core sampling using a vibracore sampler (30 samples)) and annual monitoring over a 30 year period.

A Final Feasibility Study for Seaplane Lagoon at Alameda Point (Battelle 2005) to address PCBs and cadmium and other contaminants in subtidal sediments evaluated a range of remedial alternatives, including but not limited to, no action, monitored natural recovery with institutional controls, isolation capping, dredging/dewatering and off-site disposal and focused dredging/upland confinement. Other than no action, the costs of conducting some level of active remediation were from $2,280,106 to $40,947,000. The costs included base costs, including costs for remedial design and construction, as well as future costs for 30 years of operation and maintenance. The Water Board and other regulatory agencies signed a Record of Decision in 2005 (U.S. Navy, 2006b) with the U.S. Navy, agreeing to the selected remedial alternative of dredging, dewatering, and off-site disposal at a 30-year net present value of $24,600,000. The remedy calls for dredging 63,000 cubic yards of contaminated sediment over approximately a 6-acre area. Even though there are and will be substantial costs associated with completing existing and new clean-ups, these sites will be subject to clean-up with or without this TMDL and therefore little or no new costs are anticipated as a result of this TMDL as the costs of cleanup would be driven by other regulatory programs.

Monitoring and Special Studies

The Regional Monitoring Program (RMP) conducted by the San Francisco Estuary Institute collects much of the data that are required as part of the ongoing assessment of the health of the Bay. The RMP is jointly funded by municipal and industrial wastewater dischargers. The current budget for the program is $3.4 million, which includes monitoring of PCBs and other pollutants in water, sediment, and fish throughout the Bay. Maintaining this effort should be sufficient to track attainment of the TMDL target and recovery of the Bay. In addition, the RMP also conducts regular monitoring of PCBs loads from the Central Valley and limited monitoring of PCBs loads from local tributaries. Additional monitoring will be necessary to sufficiently quantify loads from urban stormwater runoff and the loads reduced from urban stormwater runoff control actions. As with the control measures, this loads monitoring would also address

other pollutants of concern such as heavy metals, pesticides, and petroleum hydrocarbons. This additional monitoring could cost $500 thousand to $1 million per year.

There are critical data needs to improve our understanding of PCBs fate and transport, particularly PCBs in Bay sediments. Also, a better understanding of the rate of natural attenuation of PCBs in Bay environments is needed to predict with more certainty the recovery time of the Bay, and to inform on the need for more, less or different implementation actions. We estimate these costs, which would be shared by all source category dischargers, urban stormwater dischargers, and dredgers, would total approximately $1 to 3 million, some of which would be accounted for within the existing RMP. These costs include the costs of collecting information regarding pollutants other than PCBs that are the subject of study by the RMP.

Risk Management

The risk management activities range from conducting studies to support health risk assessment and risk communication associated with eating Bay fish, providing outreach and advice to the general public and regular consumers of Bay fish, and investigating and implementing direct actions that reduce the actual and potential exposure of, and mitigate health impacts to, people and communities most likely to be consuming PCBs-contaminated fish from San Francisco Bay. Responsibility and costs associated with these activities will be shared among the California Office of Environmental Health Hazard Assessment, the California Department of Toxic Substances Control, the California Department of Health Services, dischargers, community-based organizations, and the Water Board. Although the direct risk reduction, studies, outreach efforts and mitigation actions have yet to be determined, they will likely cost in the range of $100 thousand to $1 million dollars per year. Some of these costs are likely to be incurred without this TMDL as the San Francisco Bay mercury TMDL and mercury watershed NPDES permit require similar risk management activities.

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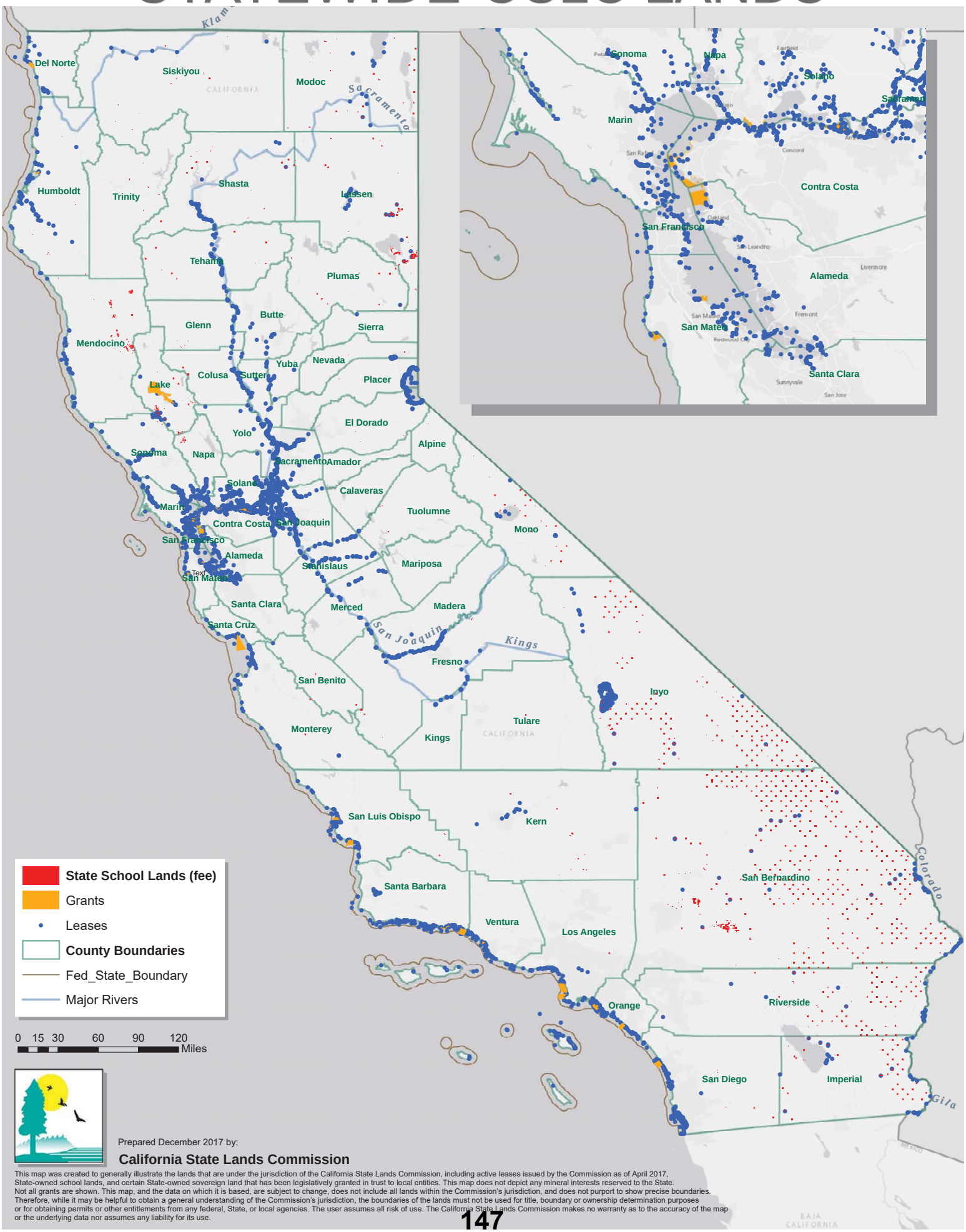
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EXHIBIT N

STATEWIDE CSLC LANDS



Prepared December 2017 by:

California State Lands Commission

This map was created to generally illustrate the lands that are under the jurisdiction of the California State Lands Commission, including active leases issued by the Commission as of April 2017, State-owned school lands, and certain State-owned sovereign land that has been legislatively granted in trust to local entities. This map does not depict any mineral interests reserved to the State. Not all grants are shown. This map, and the data on which it is based, are subject to change, does not include all lands within the Commission's jurisdiction, and does not purport to show precise boundaries. Therefore, while it may be helpful to obtain a general understanding of the Commission's jurisdiction, the boundaries of the lands must not be used for title, boundary or ownership determination purposes or for obtaining permits or other entitlements from any federal, State, or local agencies. The user assumes all risk of use. The California State Lands Commission makes no warranty as to the accuracy of the map or the underlying data nor assumes any liability for its use.

California State Lands Commission Jurisdiction

The State of California acquired sovereign ownership of all tidelands and submerged lands and the beds of navigable lakes and waterways upon its admission to the United States in 1850. The California State Lands Commission (Commission) has jurisdiction and management authority over these sovereign lands. These lands include the beds of more than 120 navigable rivers and sloughs, nearly 40 navigable lakes, and the 3-mile-wide band of tide and submerged lands adjacent to California's 1,100 mile coast and offshore islands, totaling nearly 4 million acres. The Commission also has certain residual and review authority for tidelands and submerged lands legislatively granted in trust to local jurisdictions. The protections of the common law Public Trust Doctrine apply to all these lands.

The State holds these lands in trust for the benefit of all people of the State for statewide Public Trust purposes including waterborne commerce, navigation, fisheries, water-related recreation, habitat preservation, and open space, among others. On tidal waterways, the State's sovereign fee ownership extends landward to the mean high-tide line, except for areas of fill or artificial accretion or where the boundary has been fixed by agreement or a court decision. On navigable non-tidal waterways, including lakes, the State holds fee ownership of the bed of the waterway landward to the ordinary low-water mark and a Public Trust easement landward to the ordinary high-water mark, except where the boundary has been fixed by agreement or a court decision. These boundaries may not be readily apparent from present day site inspections.

The Commission also manages State-owned school lands granted to the State in 1853 by the federal government to support public schools. Today, the Commission manages approximately 459,000 acres of school lands held in fee ownership by the State and reserved mineral interests on approximately 790,000 acres of school lands where the surface estate was sold.

EXHIBIT 3.1

KeyCite Yellow Flag - Negative Treatment
Proposed Legislation

West's Annotated California Codes
Constitution of the State of California 1879 (Refs & Annos)
Article IV. Legislative (Refs & Annos)

West's Ann.Cal.Const. Art. 4, § 8

§ 8. Bills; procedure; effective date of statutes; urgency measures

Effective: November 9, 2016

Currentness

SEC. 8. (a) At regular sessions no bill other than the budget bill may be heard or acted on by committee or either house until the 31st day after the bill is introduced unless the house dispenses with this requirement by rollcall vote entered in the journal, three fourths of the membership concurring.

(b)(1) The Legislature may make no law except by statute and may enact no statute except by bill. No bill may be passed unless it is read by title on 3 days in each house except that the house may dispense with this requirement by rollcall vote entered in the journal, two thirds of the membership concurring.

(2) No bill may be passed or ultimately become a statute unless the bill with any amendments has been printed, distributed to the members, and published on the Internet, in its final form, for at least 72 hours before the vote, except that this notice period may be waived if the Governor has submitted to the Legislature a written statement that dispensing with this notice period for that bill is necessary to address a state of emergency, as defined in paragraph (2) of subdivision (c) of Section 3 of Article XIII B, that has been declared by the Governor, and the house considering the bill thereafter dispenses with the notice period for that bill by a separate rollcall vote entered in the journal, two thirds of the membership concurring, prior to the vote on the bill.

(3) No bill may be passed unless, by rollcall vote entered in the journal, a majority of the membership of each house concurs.

(c)(1) Except as provided in paragraphs (2) and (3) of this subdivision, a statute enacted at a regular session shall go into effect on January 1 next following a 90-day period from the date of enactment of the statute and a statute enacted at a special session shall go into effect on the 91st day after adjournment of the special session at which the bill was passed.

(2) A statute, other than a statute establishing or changing boundaries of any legislative, congressional, or other election district, enacted by a bill passed by the Legislature on or before the date the Legislature adjourns for a joint recess to

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reconvene in the second calendar year of the biennium of the legislative session, and in the possession of the Governor after that date, shall go into effect on January 1 next following the enactment date of the statute unless, before January 1, a copy of a referendum petition affecting the statute is submitted to the Attorney General pursuant to subdivision (d) of Section 10 of Article II, in which event the statute shall go into effect on the 91st day after the enactment date unless the petition has been presented to the Secretary of State pursuant to subdivision (b) of Section 9 of Article II.

(3) Statutes calling elections, statutes providing for tax levies or appropriations for the usual current expenses of the State, and urgency statutes shall go into effect immediately upon their enactment.

(d) Urgency statutes are those necessary for immediate preservation of the public peace, health, or safety. A statement of facts constituting the necessity shall be set forth in one section of the bill. In each house the section and the bill shall be passed separately, each by rollcall vote entered in the journal, two thirds of the membership concurring. An urgency statute may not create or abolish any office or change the salary, term, or duties of any office, or grant any franchise or special privilege, or create any vested right or interest.

Credits

(Added Nov. 8, 1966. Amended Nov. 7, 1972. Amended by A.C.A.54 (Prop. 109), approved June 5, 1990, eff. June 6, 1990; Initiative Measure (Prop. 54, § 4.2, approved Nov. 8, 2016, eff. Nov. 9, 2016).)

Notes of Decisions (149)

West's Ann. Cal. Const. Art. 4, § 8, CA CONST Art. 4, § 8
Current with urgency legislation through Ch. 13 of 2018 Reg.Sess

End of Document

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188 Cal.App.4th 794
Court of Appeal, Third District, California.

CLOVIS UNIFIED SCHOOL DISTRICT et al.,
Plaintiffs and Appellants,
v.
John CHIANG, as State Controller, etc., Defendant and Appellant.

No. C061696.
|
Sept. 21, 2010.
|
As Modified on Denial of Rehearing Oct. 14, 2010.

Synopsis
Background: School districts and community college districts brought action against State Controller's Office for declaratory and writ relief challenging auditing rules used in reducing state-mandated reimbursement claims for employee salary and benefit costs. The Superior Court, Sacramento County, No. 06CS00748 and 07CS00263, Lloyd G. Connelly, J., invalidated the Contemporaneous Source Document Rule (CSDR) as applied to Intradistrict Attendance Program and Collective Bargaining Program, granted no relief as to CSDR as applied to the School District of Choice Program (SDC) and the Emergency Procedures, Earthquake Procedures and Disasters Program (EPEPD), and upheld the Health Fee Rule. Plaintiffs appealed.

Holdings: The Court of Appeal, Butz, J., held that:

[1] CSDR implemented, interpreted, or made specific the regulatory Parameters and Guidelines (P&Gs) applied to state-mandated reimbursement claims;

[2] declaratory and traditional mandate relief was appropriate form of relief for use of CSDR as underground regulation; and

[3] amount of optional student fee was deducted from amount reimbursed to community college districts for state-mandated costs.

Reversed in part with directions and affirmed in part.

West Headnotes (14)

[1] **Declaratory Judgment**
Limitations and laches
Mandamus
Time to Sue, Limitations, and Laches
States
State expenses and charges and statutory liabilities

School districts' and community college districts' action against State Controller's Office, for declaratory and writ relief challenging audits that reduced state-mandated reimbursement claims for employee salary and benefit costs based on an auditing rule which was an invalid underground regulation in violation of the state Administrative Procedure Act (APA), was subject to the three-year statute of limitations for lawsuits based on statutory liability, since state-mandated reimbursement was a statutory liability. West's Ann.Cal.C.C.P. § 338(a); West's Ann.Cal.Gov.Code §§ 11340 et seq., 17500 et seq.

1 Cases that cite this headnote

[2] **Administrative Law and Procedure**
Nature and Scope

An Administrative Procedure Act (APA) regulation has two principal characteristics: it must apply generally; and it must implement, interpret, or make specific the law enforced or administered by the agency, or govern the agency's procedure. West's Ann.Cal.Gov.Code § 11342.600.

Cases that cite this headnote

[3] **Administrative Law and Procedure**
Nature and Scope

For a regulation to "apply generally," as

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required to be subject to the Administrative Procedure Act (APA), the rule need not apply universally; a rule applies generally so long as it declares how a certain class of cases will be decided. West's Ann.Cal.Gov.Code § 11342.600.

Cases that cite this headnote

[4] **States**
Administration of finances in general

State Controller's Office's Contemporaneous Source Document Rule (CSDR) applied generally, as required to be a regulation subject to the Administrative Procedure Act (APA), where the CSDR was applied generally to the auditing of reimbursement claims, and the Controller's auditors had no discretion to judge on a case-by-case basis whether to apply the CSDR. West's Ann.Cal.Gov.Code § 11342.600.

Cases that cite this headnote

[5] **States**
State expenses and charges and statutory liabilities

State Controller's Office's Contemporaneous Source Document Rule (CSDR) implemented, interpreted, or made specific the regulatory Parameters and Guidelines (P&Gs) applied to state-mandated reimbursement claims for the School District of Choice (SDC) Program in effect before May 27, 2004, and thus was a regulation subject to the Administrative Procedure Act (APA), since there were substantive differences between the CSDR and the P&Gs then in effect; the CSDR barred the use of employee time declarations and certifications as source documents or equivalents even though the P&Gs had nothing to say on that subject, and the CSDR did not countenance the use of documented estimates even though such estimates were allowable under the P&Gs. West's Ann.Cal.Gov.Code §§ 11342.600, 17557, 17558.5(a); West's Ann.Cal.Educ.Code § 48209.9 (Repealed).

Cases that cite this headnote

[6] **States**
State expenses and charges and statutory liabilities

State Controller's Office's Contemporaneous Source Document Rule (CSDR) implemented, interpreted, or made specific the regulatory Parameters and Guidelines (P&Gs) applied to state-mandated reimbursement claims for the Emergency Procedures, Earthquake Procedures and Disasters Program (EPEPD), and thus was a regulation subject to the Administrative Procedure Act (APA), since there were substantive differences between the CSDR and the P&Gs then in effect; unlike the P&Gs, the CSDR barred the use of employee time declarations and certifications as source documents, and the CSDR did not countenance the use of documented estimates. West's Ann.Cal.Gov.Code §§ 11342.600, 17557, 17558.5(a); West's Ann.Cal.Educ.Code §§ 35925–35927, 40041.5, 40042 (Repealed).

Cases that cite this headnote

[7] **States**
State expenses and charges and statutory liabilities

State Controller's Office's Contemporaneous Source Document Rule (CSDR) implemented, interpreted, or made specific the regulatory Parameters and Guidelines (P&Gs) applied to state-mandated reimbursement claims for the Intradistrict Attendance Program, and thus was a regulation subject to the Administrative Procedure Act (APA), since there were substantive differences between the CSDR and the P&Gs then in effect; unlike the P&Gs, the CSDR barred the use of time studies or employee time declarations and certifications as source documents. West's Ann.Cal.Gov.Code §§ 11342.600, 17557, 17558.5(a); West's

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Ann.Cal.Educ.Code § 35160.5.

Cases that cite this headnote

[8] **States**
State expenses and charges and statutory liabilities

State Controller's Office's Contemporaneous Source Document Rule (CSDR) implemented, interpreted, or made specific the regulatory Parameters and Guidelines (P&Gs) applied to state-mandated reimbursement claims for the school district Collective Bargaining Program, and thus was a regulation subject to the Administrative Procedure Act (APA), since there were substantive differences between the CSDR and the P&Gs then in effect; unlike the P&Gs, the CSDR required source documents. West's Ann.Cal.Gov.Code §§ 3540 et seq., 11342.600, 17557, 17558.5(a).

1 Cases that cite this headnote

[9] **Declaratory Judgment**
State officers and boards
Declaratory Judgment
Education
Mandamus
Establishment, maintenance, and management of schools

Declaratory and accompanying traditional mandate relief was an appropriate form of relief, for school districts' challenge to State Controller's Office's policy of using an underground regulation to conduct audits in violation of the Administrative Procedure Act (APA), even though the underground regulation was later incorporated into valid regulations, where the dispute related to audit determinations under the invalid regulation which did not become final prior to the applicable statute of limitations, and there was no adequate administrative remedy because the Commission on State Mandates consistently refused to rule on underground regulation claims. West's Ann.Cal.Gov.Code § 11350.

2 Cases that cite this headnote

[10] **Evidence**
Administrative rules and regulations

In appeal from trial court's partial grant of declaratory and writ relief against underground regulations used by State Controller's Office in reducing state-mandated reimbursement claims for employee salary and benefit costs, Court of Appeal would not take judicial notice of a subsequent amendment of the regulatory Parameters and Guidelines (P&Gs) applied to the reimbursement claims, which brought the underground regulations into compliance with the Administrative Procedure Act (APA) after the time period at issue in the lawsuit. West's Ann.Cal.Gov.Code §§ 11340 et seq., 17500 et seq.

Cases that cite this headnote

[11] **Evidence**
Official proceedings and acts

In appeal from trial court's partial grant of declaratory and writ relief against underground regulations used by State Controller's Office in reducing school districts' and community college districts' state-mandated reimbursement claims for employee salary and benefit costs, Court of Appeal would not take judicial notice of the Commission on State Mandates Incorrect Reduction Claim caseload summary or the Controller's list of final audit reports for California school districts and community college districts. West's Ann.Cal.Gov.Code § 17558.7(a).

1 Cases that cite this headnote

[12] **States**
State expenses and charges and statutory

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liabilities

Under the statutes requiring reimbursement to local government for state-mandated costs, the amount of an optional student health fee was deducted from the amount reimbursed to community college districts for the state-mandated cost of the Health Fee Elimination Program, even when districts chose not to charge their students those fees. West's Ann.Cal.Gov.Code §§ 17514, 17556(d); West's Ann.Cal.Educ.Code § 76355(a)(1); § 72246 (Repealed).

See Cal. Jur. 3d, State of California, § 104; 9 Witkin, Summary of Cal. Law (10th ed. 2005) Taxation, § 121.

Cases that cite this headnote

[13] **States**
State expenses and charges and statutory liabilities

To the extent a local agency or school district has the authority to charge for a state-mandated program or increased level of service, that charge cannot be recovered as a state-mandated cost. West's Ann.Cal. Const. Art. 13B, § 6; West's Ann.Cal.Gov.Code §§ 17514, 17556(d).

Cases that cite this headnote

[14] **States**
State expenses and charges and statutory liabilities

State Controller's Office had the authority to rely on the Government Code, rather than only on the Parameters and Guidelines (P&Gs) adopted by the Commission on State Mandates, to uphold an audit rule excluding the amount of optional fees from the amount recoverable as state-mandated costs. West's Ann.Cal.Gov.Code §§ 17514, 17556(d).

Cases that cite this headnote

Attorneys and Law Firms

****36** Lozano Smith, Gregory A. Wedner and Sloan R. Simmons, Sacramento, for Plaintiffs and Appellants.

Richard L. Hamilton for California School Boards Association and Its Education Legal Alliance, as Amicus Curiae on behalf of Plaintiffs and Appellants Clovis Unified School District, Fremont Unified School District, Newport–Mesa Unified School District, Norwalk–La Mirada Unified School District, Riverside Unified School District, San Juan Unified School District and Sweetwater Union High School District.

Edmund G. Brown, Jr., Attorney General, Jonathan K. Renner, Assistant Attorney General, Douglas J. Woods and Kathleen A. Lynch, Deputy Attorneys General, for Defendant and Appellant.

Opinion

BUTZ, J.

***797** This declaratory relief and writ of mandate action concerns the validity of two auditing rules used by defendant State Controller's Office (Controller). The Controller used these rules in reducing state-mandated reimbursement claims for employee salary and benefit costs submitted from plaintiff school districts and community college districts (hereafter plaintiffs).

Contemporaneous Source Document Rule (CSDR)
The first auditing rule is referred to by plaintiffs as the Contemporaneous Source Document Rule (CSDR). The Controller used this rule to reduce reimbursement claims for the following four state-mandated school district programs during the challenged period straddling fiscal years 1998 to 2003: (1) the School District of Choice Program (SDC); (2) the Emergency Procedures, Earthquake Procedures and Disasters Program (EPEPD); (3) the ***798** Intradistrict Attendance Program; and (4) the Collective Bargaining Program. We conclude this rule was an invalid underground regulation under the state Administrative Procedure Act (APA) during this period. (Gov.Code, § 11340 et seq.)[1] Consequently, we overturn

the Controller's audits for these four programs during this period to the extent they were based on this rule.

[1] Undesignated statutory references are to the Government Code.

Health Fee Elimination Program: Health Fee Rule

The second auditing rule is the Health Fee Rule, which the Controller used to reduce reimbursement claims for state- ****37** mandated health services provided by the plaintiff community college districts pursuant to the Health Fee Elimination Program. We uphold the validity of this rule.

The trial court: (1) invalidated the CSDR as applied to the Intradistrict Attendance and Collective Bargaining Programs (from which the Controller appeals); (2) hinted at the CSDR's invalidity as applied to the SDC and EPEPD Programs but did not grant relief thereon, apparently deeming the administrative remedy sufficient (from which the school districts appeal); and (3) upheld the validity of the Health Fee Rule (from which the community college districts appeal). We shall affirm the judgment regarding the Intradistrict Attendance Program, the Collective Bargaining Program, and the Health Fee Rule, but reverse the judgment, with directions, regarding the SDC and EPEPD Programs.

Because the issues raised in this appeal are almost entirely legal ones subject to our independent review (see *Grier v. Kizer* (1990) 219 Cal.App.3d 422, 434, 268 Cal.Rptr. 244, disapproved on a different ground in *Tidewater Marine Western, Inc. v. Bradshaw* (1996) 14 Cal.4th 557, 577, 59 Cal.Rptr.2d 186, 927 P.2d 296 (*Tidewater*) [whether an auditing rule is an APA regulation is a question of law]), it is unnecessary to set forth a factual background at this stage. Instead, we will proceed straight to our discussion. First, we will briefly summarize the process of state-mandated reimbursement and the concept of underground regulation. Then we will turn our attention to the programs and remedies at issue, weaving in the pertinent facts as we go.

DISCUSSION

I. State-mandated Reimbursement Process

In 1979, California's voters adopted article XIII B, section 6 of the state Constitution, which specifies that if the state imposes any "new program ***799** or higher level of service" on any local government (including a school district), the state must reimburse the locality for the costs of the program or increased level of service.

In 1984, the Legislature enacted statutes to govern the state mandate process. (§ 17500 et seq.) Under these statutes, the Commission on State Mandates (the Commission) determines, pursuant to a "test claim" process, whether a state program constitutes a reimbursable state mandate. (§§ 17551, subd. (c), 17553.)

Once the Commission determines that a state mandate exists, it adopts regulatory "[P]arameters and [G]uidelines" (P & G's) to govern the state-mandated reimbursement. (§ 17557.) The Controller, in turn, then issues nonregulatory "[C]laiming [I]nstructions" for each Commission-determined mandate; these instructions must derive from the Commission's test claim decision and its adopted P & G's. (§ 17558.) Claiming Instructions may be specific to a particular mandated program, or general to all such programs.

The Controller may audit a reimbursement claim filed by a local agency or school district within three years of the claim's filing or last amendment. (§ 17558.5, subd. (a).)

If the Controller reduces a specific reimbursement claim via an audit, the claimant may file an "[I]ncorrect [R]eduction [C]laim" with the Commission. (§ 17558.7, subd. (a).)

II. The Concept of Invalid Underground Regulation

[1] In their petitions for writ of mandate and complaints for declaratory relief, the school districts (comprising Clovis, ****38** Fremont, Newport–Mesa, Norwalk–La Mirada, Riverside, Sweetwater, and San Juan; hereafter collectively, School Districts) allege that the CSDR constitutes an invalid, unenforceable underground regulation under the APA as applied by the Controller in auditing salary and benefit costs in reimbursement claims for the SDC, EPEPD, Intradistrict Attendance, and Collective Bargaining Programs during the applicable periods roughly encompassing the fiscal years 1998 to 2003.[2]

[2] Because of the large number of school districts and program audits involved, as well as the slightly varying

fiscal years at issue corresponding to these districts and program audits, we will use the general phrasing "applicable periods roughly encompassing the fiscal years 1998 to 2003" to describe the audits at issue. The parties are well aware of the particular audits being challenged for this period. Regardless, the School Districts must meet the applicable three-year statute of limitations that governs lawsuits based on statutory liability (like state-mandated reimbursement) for any audits of the four programs that have been determined on the basis of the invalidated CSDR. (Code Civ. Proc., § 338; *Union of American Physicians & Dentists v. Kizer* (1990) 223 Cal.App.3d 490, 504, fn. 5, 272 Cal.Rptr. 886.) San Juan School District filed its petition and complaint on March 2, 2007. The rest of the School Districts, together, filed their petition and complaint on May 23, 2006. The trial court consolidated these two petitions and complaints on March 27, 2007.

The School Districts made challenges to other programs as well, but these challenges are not at issue on appeal.

***800** In their petition for writ of mandate and complaint for declaratory relief (actually appended to the School Districts' petition and complaint), the community college districts (comprising San Mateo, Santa Monica, State Center, and El Camino; hereafter collectively, College Districts) allege that the Health Fee Rule constitutes an invalid, unenforceable underground regulation under the APA as applied by the Controller in auditing reimbursement claims for the Health Fee Elimination Program or, alternatively, that the Controller's auditing actions in this respect were beyond its lawful authority.

The basic legal principles that apply to these allegations are as follows:

" 'If a rule constitutes a "regulation" within the meaning of the APA (other than an "emergency regulation" ...) it may not be adopted, amended, or repealed except in conformity with "basic minimum procedural requirements" ' " which include public notice, opportunity for comment, agency response to comment, and review by the state Office of Administrative Law. (*Morning Star Co. v. State Bd. of Equalization* (2006) 38 Cal.4th 324, 333, 42 Cal.Rptr.3d 47, 132 P.3d 249 (*Morning Star*).) "These requirements promote the APA's goals of bureaucratic responsiveness and public engagement in agency rulemaking." (*Ibid.*)

Any regulation " 'that substantially fails to comply with these requirements may be judicially declared invalid' " and is deemed unenforceable. (*Morning Star, supra,* 38 Cal.4th at p. 333, 42 Cal.Rptr.3d 47, 132 P.3d 249; § 11350, subd. (a).)

[2] A "regulation" under the APA "means every rule, regulation, order, or standard of general application or the amendment, supplement, or revision of any rule, regulation, order, or standard adopted by any state agency to implement, interpret, or make specific the law enforced or administered by it, or to govern its procedure." (§ 11342.600.) As we will later explain more fully, an APA regulation has two principal characteristics: It must apply generally; and it must implement, interpret, or make specific the law enforced or administered by the agency, or govern the agency's procedure. (*Morning Star, supra,* 38 Cal.4th at pp. 333–334, 42 Cal.Rptr.3d 47, 132 P.3d 249; *Tidewater, supra,* 14 Cal.4th at p. 571, 59 Cal.Rptr.2d 186, 927 P.2d 296.)

*801 III. The CSDR as Applied to the SDC, EPEPD, Intradistrict Attendance, and Collective Bargaining Programs

We will start with the SDC Program. We do so because, of these four programs, the Commission's APA-valid, pre-May 27, 2004 P & G's for the SDC Program most closely resemble the Controller's CSDR.[3] If we conclude, nevertheless, that the CSDR is an underground regulation that violates the APA in this context, we will have to conclude similarly for these three other programs. It is undisputed that the Controller's CSDR was not enacted in compliance with APA procedure.

[3] On May 27, 2004, the Commission validly amended its SDC Program P & G's to adopt this CSDR language.

As we shall explain, we conclude that the CSDR, as applied to the (pre-May 27, 2004) SDC Program, is an underground, unenforceable regulation under the APA. Accordingly, the CSDR is invalid as applied to the School Districts' SDC Programs for the applicable periods roughly encompassing the fiscal years 1998 to 2003 (see fn. 2, *ante*), and invalid in parallel fashion to the three other programs as well.

The Commission determined, in the mid–1990's, that the SDC Program imposed a reimbursable state-mandated program on school districts by establishing the right of parents/guardians of students, who were prohibited from transferring to another school district, to appeal to the county board of education. (See former Ed.Code, § 48209.9, inoperative July 1, 2003.)

From August 24, 1995, until May 27, 2004, the Commission's P & G's for the SDC Program set forth the following two requirements for school districts seeking SDC state-mandated reimbursement for employee salary and benefit costs: (1) "Identify the employee(s) and their job classification, describe the mandated functions performed and specify the actual number of hours devoted to each function, the productive hourly rate and the related benefits. The average number of hours devoted to each function may be claimed if supported by a documented time study"; and (2) "For auditing purposes, all costs claimed must be traceable to source documents (e.g., employee time records, invoices, receipts, purchase orders, contracts, etc.) and/or worksheets that show evidence of and the validity of such claimed costs."

The Commission's SDC Program P & G's divide the subject of reimbursable costs into three categories: employee salaries and benefits; materials and supplies; and contracted services. The examples set forth in these P & G's for ***802** "source documents" align with these three categories: "employee time records" for employee salaries and benefits; "invoices," "receipts" and "purchase orders" for materials and supplies; and "contracts" for contracted services. At issue in this appeal for the SDC, EPEPD, Intradistrict Attendance, and Collective Bargaining Programs are just the cost category of employee salaries and benefits.

From the initial issuance of the Commission's SDC Program P & G's in 1995 until May 27, 2004, the Controller's SDC-specific Claiming Instructions substantively aligned with the SDC Program P & G's.

However, in September 2003, the Controller revised its general Claiming Instructions (that apply to state-mandated reimbursement claims in general) to set ****40** forth, for the first time, what has become known as the CSDR. The CSDR states:

"To be eligible for mandated cost reimbursement for any fiscal year, only actual costs may be claimed. Actual costs are those costs actually incurred to implement the mandated activities. Actual costs must be traceable and supported by source documents that show the validity of such costs, when they were incurred, and their relationship to the reimbursable activities. A source document is a document created at or near the same time the actual cost was incurred for the event or activity in question. Source documents may include, but are not limited to, employee time records or time logs, sign-in sheets, invoices, and receipts.

"Evidence corroborating the source documents may include, but is not limited to, worksheets, cost allocation reports (system generated), purchase orders, contracts, agendas, training packets, and declarations. Declarations must include a certification or declaration stating, 'I certify under penalty of perjury under the laws of the State of California that the foregoing is true and correct based upon personal knowledge.' Evidence corroborating the source documents may include data relevant to the reimbursable activities otherwise in compliance with local, state, and federal government requirements. However, corroborating documents cannot be substituted for source documents."

Substantial evidence showed that prior to the use of the CSDR in Controller audits, school districts obtained SDC state-mandated reimbursement for employee salary and benefit costs based on (1) declarations and certifications from the employees that set forth, after the fact, the time they had spent on SDC-mandated tasks; or (2) an annual accounting of time determined by the number of mandated activities and the average time for each activity. After the Controller began using the CSDR in its auditing of SDC reimbursement claims, the Controller deemed these declarations, certifications, and accounting methods insufficient, and reduced the ***803** reimbursement claims accordingly. (Substantial evidence also showed that the Controller, in 2000, began applying a CSDR requirement in field audits of SDC reimbursement claims, before the CSDR was expressed in the Controller's general Claiming Instructions in September 2003 or adopted in the Commission's SDC Program P & G's on May 27, 2004.)

The question is whether the Controller's CSDR constituted an underground, unenforceable regulation that the Controller used in auditing the School Districts' SDC Program for the fiscal years 1998 to 2003, because the CSDR constituted a state agency regulation that was not adopted in conformance with the APA prior to its valid adoption in the Commission's SDC Program P & G's on May 27, 2004. We answer this question "yes."

[3] " '*A regulation subject to the APA* ... has *two principal identifying characteristics.* [Citation.] *First,* the agency must intend its rule to apply generally, rather than in a specific case. The rule need not, however, apply universally; a rule applies generally so long as it declares how a certain class of cases will be decided. [Citation.] *Second,* the rule must "implement, interpret, or make specific the law enforced or administered by [the agency], or ... govern [the agency's] procedure." ' " (*Morning Star, supra,* 38 Cal.4th at pp. 333–334, 42 Cal.Rptr.3d 47, 132 P.3d 249, quoting *Tidewater, supra,* 14 Cal.4th at p. 571, 59 Cal.Rptr.2d 186, 927 P.2d 296, italics added.)

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[4] As to the first criterion—whether the rule is intended to apply generally—substantial evidence supports the trial ****41** court's finding that the CSDR was "applie[d] generally to the auditing of reimbursement claims ...; the Controller's auditors ha[d] no discretion to judge on a case[-]by[-]case basis whether to apply the rule." (The trial court made this finding in the context of ruling on the Intradistrict Attendance and Collective Bargaining Programs, but this finding is a general one that applies equally to the SDC Program. The trial court did not apply this general finding to the SDC Program only because the court reasoned that the CSDR was not an APA-violative underground regulation in the SDC context, as the Commission later adopted the CSDR into its SDC Program P & G's (see fn. 3, *ante*). As we shall explain later, we reject this reasoning involving subsequent adoption.)

[5] The CSDR also meets the second criterion of being a regulation: It implements, interprets, or makes specific the law enforced or administered by the Controller. The Controller argues, to the contrary, that the CSDR "merely restates" the source document requirement found in the pre-May 27, 2004 Commission P & G's for the SDC Program, and that "source documents" are, by their sourceful nature, contemporaneous. As we explain, we reject this argument.

Admittedly, the pre-May 27, 2004 SDC Program P & G's stated that, "[f]or auditing purposes, all costs claimed must be traceable to source documents ***804** (e.g., employee time records, invoices, receipts, purchase orders, contracts, etc.) and/or worksheets that show evidence of and the validity of such claimed costs." However, the Controller's CSDR, in contrast to these P & G's, did not equate "source documents" with "worksheets," but relegated "worksheets" to the second-class status of "corroborating documents" that can only serve as evidence that corroborates "source documents." This is no small matter either. This is because, prior to the Controller using the CSDR to audit reimbursement claims, the School Districts, in making these claims, had used employee declarations and certifications and average time accountings to document the employee time spent on SDC-mandated activities; and such methods can be deemed akin to worksheets.

More significantly, the CSDR expressly states that employee declarations and certifications are only corroborating documents, *not* source documents; the pre-May 27, 2004 SDC Program P & G's had nothing to say on this subject. In effect, then, the CSDR bars the use of employee time declarations and certifications as source documents or source document-equivalent worksheets, in contrast to the pre-May 27, 2004 P & G's.

Along similar lines, the pre-May 27, 2004 SDC Program P & G's also stated that the "average number of [employee] hours devoted to each [mandated] function may be claimed if supported by a documented time study"; the record showed that such a time study is a documented estimate. The CSDR, which recognizes only actual costs traceable and supported by contemporaneous source documents, does not countenance such estimation.

Nor may the Controller point to the examples of the source documents listed in the pre-May 27, 2004 SDC Program P & G's and argue they show the contemporaneous nature of source documents: "employee time records, invoices, receipts, purchase orders, contracts, etc." First, this argument ignores the source document-equivalent of "worksheets" set forth in these P & G's, as discussed above. And, second, while the CSDR lists "employee time records," "invoices," and "receipts" as source documents, it specifies that "purchase orders," "contracts" (and "worksheets") ****42** are only corroborating documents, not source documents.

Finally, the School Districts that had used employee declarations and certifications and average time accountings to document time for reimbursement claims also note that it is *now* physically impossible to comply with the CSDR's requirement of contemporaneousness that "[a] source document is a ***805** document *created at or near the same time the actual cost was incurred* for the event or activity in question."[4] (Italics added.)

[4] As a related aside, it is interesting to note that the Controller's SDC-specific Claiming Instructions that were in place during the pre–2004 P & G's stated that, "[f]or audit purposes, all supporting documents must be retained [by claimant] [only] for a period of two years after the end of the calendar year in which the reimbursement claim was filed or last amended, whichever is later"; but the Controller had three years in which to conduct a reimbursement audit "after the date that the actual reimbursement claim is filed or last amended, whichever is later." (§ 17558.5, subd. (a).)

Given these substantive differences between the Commission's pre-May 27, 2004 SDC Program P & G's and the Controller's CSDR, we conclude that the CSDR implemented, interpreted or made specific the following laws enforced or administered by the Controller: the Commission's pre-May 27, 2004 P & G's for the SDC Program (§ 17558) [the Commission submits regulatory P & G's to the Controller, who in turn issues nonregulatory

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Claiming Instructions based thereon]; and the Controller's statutory authority to audit state-mandated reimbursement claims (§ 17561, subd. (d)(2)).

Consequently, the CSDR meets the two criteria for being an APA regulation. And because the CSDR, as applied to the SDC Program, was not adopted as a regulation in compliance with the APA rule-making procedures until its May 27, 2004 incorporation into the SDC Program P & G's, this CSDR is an underground and unenforceable regulation as applied to the audits of the School Districts' SDC Programs for the applicable periods roughly encompassing the fiscal years 1998 to 2003. (See fn. 2, *ante*.) These audits are invalidated to the extent they used this CSDR.

[6] [7] [8] As we noted at the outset of this part of the opinion, if we were to conclude (as we now have done) that the CSDR is an underground regulation that violates the APA in the SDC Program context presented here, we would have to conclude similarly for the EPEPD, Intradistrict Attendance, and Collective Bargaining Programs too. This is because the Commission's P & G's for these latter three programs less resembled the Controller's CSDR than did the Commission's pre-May 27, 2004 P & G's for the SDC Program. We now turn to the EPEPD, Intradistrict Attendance, and Collective Bargaining Programs, which we will describe briefly in order.

The EPEPD Program was found to be a reimbursable state-mandated program in 1987. This program requires school districts to establish earthquake procedures for each of its school buildings, and to allow use of its buildings, grounds and equipment for mass care and welfare shelters during public disasters or emergencies. (Former Ed.Code, §§ 35925–35927, 40041.5, 40042.)

***806** From 1991 until June 2, 2003, the Commission's P & G's for the EPEPD Program required school districts seeking state-mandated reimbursement for employee salary and benefit costs: (1) to "provide a listing of each employee ... and the number of hours devoted to their [mandated] function"; and (2) "[f]or auditing purposes, all costs claimed may be ****43** traceable to source documents and/or worksheets that show evidence of the validity of such costs." The Controller's EPEPD-specific Claiming Instructions, since 1996, have stated that "Source documents required to be maintained by the [reimbursement] claimant may include, but are not limited to, employee time cards and/or cost allocation reports." (The Commission, in like fashion to what it did with the SDC Program, incorporated the CSDR into its P & G's for the EPEPD Program, effective June 2, 2003.)

These pre-June 2, 2003 P & G's for the EPEPD Program parallel the pre-May 27, 2004 P & G's for the SDC Program, but even less resemble the Controller's CSDR than did those SDC Program P & G's. For the reasons set forth above involving the SDC Program, then, we conclude that the Controller's CSDR is an underground, unenforceable regulation as applied to the audits of the School Districts' EPEPD Programs for the applicable periods roughly encompassing the fiscal years 1998 to 2003. (See fn. 2, *ante*.) These audits are invalidated to the extent they used this CSDR.

The Intradistrict Attendance Program, in 1995, was found to be a reimbursable state-mandated program. This program establishes a policy of open enrollment within a school district for district residents. (Former Ed.Code, § 35160.5.)

Since 1995, the Commission's P & G's for the Intradistrict Attendance Program have required school districts seeking state-mandated reimbursement for employee salary and benefit costs (1) to "[i]dentify the employee(s) and their job classification ... and specify the actual number of hours devoted to each [mandated] function.... The average number of hours devoted to each function may be claimed if supported by a documented time study"; and (2) "[f]or auditing purposes, all costs claimed must be traceable to source documents and/or worksheets that show evidence of the validity of such costs." For the 1998 to 2003 period of fiscal years at issue, the Controller's Intradistrict Attendance Program-specific Claiming Instructions substantively mirrored P & G's for (1) above (except for the "average number of hours" provision), and stated as to source documents: "Source documents required to be maintained by the claimant may include, but are not limited to, employee time records that show the employee's actual time spent on this mandate." (In early 2010, the Commission incorporated the Controller's CSDR into the Intradistrict Attendance Program P & G's; see fn. 5, *post*.)

***807** Applying the same reasoning we have applied above with respect to the SDC and the EPEPD Programs, we conclude that the Controller's CSDR is an underground, unenforceable regulation as applied to the audits of the School Districts' Intradistrict Attendance Programs for the applicable periods roughly encompassing the fiscal years 1998 to 2003. (See fn. 2, *ante*.) These audits are invalidated to the extent they used this CSDR.

That leaves the Collective Bargaining Program, which was found to be a reimbursable state-mandated program in 1978 (by the Commission's predecessor, the State

Board of Control). This program requires school district employers to collectively bargain with represented employees, and to publicly disclose the major provisions of their agreements prior to final adoption. (§ 3540 et seq.)

If the Commission's pre-May 27, 2004 P & G's for the SDC Program most closely resemble the Controller's CSDR, the P & G's for the Collective Bargaining Program bear the least resemblance. As pertinent, the Collective Bargaining Program P & G's require school districts seeking reimbursement ****44** for employee salary and benefit costs to simply "[s]upply workload data requested ... to support the level of costs claimed" and "[s]how the classification of the employees involved, amount of time spent, and their hourly rate"; nothing is said about "source documents." The Controller's Collective Bargaining Program-specific Claiming Instructions substantively mirror those of the Intradistrict Attendance Program, stating that source documents include employee time records that show the employee's actual time spent on the mandated function. (And as with the Intradistrict Attendance Program, the Commission, in early 2010, incorporated the Controller's CSDR into the Collective Bargaining Program P & G's; see fn. 5, *post.*)

Consequently, employing the same reasoning we have employed above, we conclude that the Controller's CSDR is an underground, unenforceable regulation as applied to the audits of the School Districts' Collective Bargaining Programs for the applicable periods roughly encompassing the fiscal years 1998 to 2003. (See fn. 2, *ante.*) These audits are invalidated to the extent they used this CSDR.

IV. Declaratory and Related Writ of Mandate Relief

The trial court declared that the Controller's CSDR, as applied to the audits of the Intradistrict Attendance and Collective Bargaining Programs for the 1998 to 2003 period of fiscal years, was an invalid and void underground regulation under the APA. Correspondingly, the trial court issued a peremptory writ of mandate (traditional mandamus) invalidating these CSDR-based audits to the extent they were not final audit determinations for more than ***808** three years before the School Districts filed their respective lawsuits on May 23, 2006 (Clovis et al.) and March 2, 2007 (San Juan). This three-year period is the applicable three-year statute of limitations under Code of Civil Procedure section 338, subdivision (a), for enforcing a statutory liability like state-mandated reimbursement. We are affirming this part of the trial court's judgment.

However, the trial court refused to provide, in parallel fashion, declaratory and writ of mandate relief for the CSDR-based audits involving the SDC and EPEPD Programs. The School Districts contend the trial court erred in this respect. We agree.

In refusing to provide this relief, the trial court reasoned that, since the Commission had incorporated the Controller's CSDR into the Commission's regulatory P & G's for the SDC and EPEPD Programs, there was no longer an actual and ongoing controversy upon which to grant declaratory and related mandate relief concerning the CSDR's invalidity as an underground regulation in this context; and the Commission could administratively determine, pursuant to the Incorrect Reduction Claim process, the past audits that had used the CSDR before its incorporation into the SDC and EPEPD Programs' P & G's. This is where we part company with the trial court.

Our departure is based on section 11350 of the APA and the legal principles set forth in *Californians for Native Salmon etc. Assn. v. Department of Forestry* (1990) 221 Cal.App.3d 1419, 271 Cal.Rptr. 270 (*Native Salmon*) and its progeny.

Section 11350 of the APA specifies that "[a]ny interested person may obtain a judicial declaration as to the validity of any regulation ... by bringing an action for declaratory relief...." (§ 11350, subd. (a).)

In *Native Salmon,* the plaintiffs sought declaratory relief against the state forestry department, alleging that it was department policy, with respect to timber harvest plans: (1) to delay responses to public comments, and (2) to not evaluate the cumulative ****45** impact of logging activities in the plans. The *Native Salmon* court concluded that declaratory relief was appropriate in this context, stating: "[Plaintiffs] ... challenge not a specific [administrative] order or decision [which is generally subject to review only pursuant to a writ of *administrative* mandate, rather than traditional mandate], or even a series thereof, but an overarching, quasi-legislative policy set by an administrative agency. Such a policy is subject to review in an action for declaratory relief.... [¶] ... [R]eview of specific, discretionary administrative decisions [must not be confused] with review of a generalized agency policy. Declaratory relief directed to *policies* of administrative agencies is not an unwarranted control of discretionary, specific agency decisions." (*Native Salmon,* ***809** *supra,* 221 Cal.App.3d at p. 1429, 271 Cal.Rptr. 270, citations omitted; accord, *Venice Town Council, Inc. v. City of Los Angeles* (1996) 47 Cal.App.4th 1547, 1566, 55

Cal.Rptr.2d 465; see also *Simi Valley Adventist Hospital v. Bontá* (2000) 81 Cal.App.4th 346, 354–355, 96 Cal.Rptr.2d 633.)

[9] [10] [11] Similarly, here, the School Districts have challenged "an overarching, quasi-legislative policy set by an administrative agency" (*Native Salmon, supra*, 221 Cal.App.3d at p. 1429, 271 Cal.Rptr. 270) rather than a specific, discretionary administrative decision: i.e., the Controller's policy of using the (underground) CSDR to conduct audits in the SDC and EPEPD Programs for the period straddling the fiscal years 1998 to 2003. Declaratory and accompanying traditional mandate relief is appropriate in this context; this is an ongoing controversy limited by the three-year statute of limitations noted above.[5]

[5] The Controller had requested that, at a minimum, we stay this appeal in light of the Commission's pending decision to incorporate the Controller's CSDR into the Commission's P & G's for the Intradistrict Attendance and Collective Bargaining Programs, as the Commission has done for the SDC and EPEPD Programs. In a subsequent request for judicial notice, the Controller has now noted that the Commission, on January 29, 2010, amended its P & G's for the Intradistrict Attendance and Collective Bargaining Programs to adopt the CSDR for each program. We deny this request for judicial notice. This is because the central issue in the present appeal concerns the Controller's policy of using the CSDR *during the 1998 to 2003 fiscal years*, when the CSDR was an underground regulation. This issue is not resolved by the Commission's *subsequent* incorporation of the CSDR into its Intradistrict Attendance and Collective Bargaining Programs' P & G's.

Also, we deny the School Districts' request for judicial notice of the Commission's Incorrect Reduction Claim caseload summary and the Controller's list of final audit reports for California school districts and community college districts.

And there is no adequate administrative remedy. The trial court made a finding—supported by substantial evidence—that the Commission "consistently refuses to rule on underground regulation claims on the basis of an opinion that it lacks jurisdiction to decide such claims." (The trial court made this finding in discussing the Intradistrict Attendance and Collective Bargaining Programs, but the finding applies equally to the SDC and EPEPD Programs.)

We conclude that declaratory and accompanying traditional mandate relief applies not only to the Intradistrict Attendance and Collective Bargaining Programs, but also to the SDC and EPEPD Programs for the fiscal years at issue.[6]

[6] In light of our resolution, we need not consider the School Districts' alternative claim that the Controller's CSDR constitutes an unlawful retroactive rule, or the School Districts' additional claim that regardless whether an actual controversy exists for purposes of declaratory relief, the requested writ relief is not moot.

*810 V. Health Fee Elimination Program

[12] In 1986, and again in 1989 (after statutory amendment), the Commission determined ****46** that the Health Fee Elimination Program imposed a reimbursable state-mandated cost on those community college districts that provide health services, by requiring those districts to maintain in the future the level of service they had provided in the 1986–1987 fiscal year (termed, the "maintenance of effort" requirement); this "maintenance of effort" had to take place even if the districts, as they were and are permitted to do under the relevant statute, eliminated their nominal statutory student health fee ($7.50 per semester maximum (former Ed.Code, § 72246, Stats.1984, 2d Ex.Sess., ch. 1, p. 6642)); $10 per semester maximum (current Ed.Code, § 76355, subd. (a)(1)).[7]

[7] As Education Code section 76355, subdivision (a)(1) states: "The governing board of a district maintaining a community college may require community college students to pay a fee in the total amount of not more than ten dollars ($10) for each semester, seven dollars ($7) for summer school, seven dollars ($7) for each intersession of at least four weeks, or seven dollars ($7) for each quarter for health supervision and services, including direct or indirect medical and hospitalization services, or the operation of a student health center or centers, or both." (An inflationary adjustment is provided for in subdivision (a)(2) of § 76355.)

The College Districts contend that the Controller's Claiming Instruction for the Health Fee Elimination Program is an underground regulation under the APA and beyond the Controller's authority. Specifically, the College Districts argue that the Controller's Health Fee Rule misapplies the Commission's Health Fee Elimination Program P & G's by automatically reducing reimbursement claims by the amount that districts are statutorily authorized to charge students for health fees, even when a district chooses not to charge its students

those fees.

Since 1989, the Commission's Health Fee Elimination Program P & G's have stated in pertinent part:

"Any offsetting savings the claimant experiences as a direct result of this statute [i.e., the health fee statutes—formerly Ed.Code, § 72246; now Ed.Code, § 76355] must be deducted from the [reimbursement] costs claimed. In addition, reimbursement for this mandate received from any source, e.g., federal, state, etc., shall be identified and deducted from this claim. This shall include the amount of $7.50 per full-time student per semester, $5.00 per full-time student for summer school, or $5.00 per full-time student per quarter, as authorized by Education Code section 72246[, subdivision] (a). This shall also include payments (fees) received from individuals other than students who are not covered by Education Code Section 72246 for health services."

***811** The Controller's Health Fee Rule (i.e., its Health Fee Elimination Program-specific Claiming Instruction) states in pertinent part:

"Eligible claimants will be reimbursed for health service costs at the level of service provided in the 1986/87 fiscal year. The reimbursement will be reduced by the amount of student health fees authorized per the Education Code [section] 76355."

The College Districts maintain that the Controller's Health Fee Rule constitutes an invalid, underground regulation—i.e., one not adopted pursuant to the APA—because it meets the two-part test of a "regulation": (1) the Controller generally applies it; and (2) the rule implements, interprets or makes specific the Commission's Health Fee Elimination Program P & G's. ****47** (*Morning Star, supra,* 38 Cal.4th at pp. 333–334, 42 Cal.Rptr.3d 47, 132 P.3d 249.)

There is no quibble with part (1)—general application. The real issue is with part (2) of the test—defining a "regulation" as implementing, interpreting, or making specific the Health Fee Elimination Program P & G's. The College Districts argue that those P & G's require that the mandate claimant have actually "experience[d]" or "received" an amount of health service money for that amount to be deducted from the reimbursement claim. That is, if a college district does not charge its students a health service fee, as the district is statutorily permitted to do, then the district has not "experienced" or "received" that fee, and that amount cannot be deducted. The College Districts note that the Health Fee Rule, by contrast, states flatly that "reimbursement will be reduced by the amount of student health fees authorized per the Education Code [section] 76355."

The College Districts' argument carries some weight, especially when viewed solely within the prism of comparing the Health Fee Elimination Program P & G's to the Health Fee Rule semantically. But the argument falters when exposed to the broader context of the nature of state-mandated costs and common sense.

As for the nature of state-mandated costs, section 17514 defines "costs mandated by the state" to mean "any *increased costs* which a local agency or school district is *required to incur* after July 1, 1980, as a result of any statute enacted on or after January 1, 1975, or any executive order implementing any statute enacted on or after January 1, 1975, which mandates a new program or higher level of service of an existing program within the meaning of Section 6 of Article XIIIB of the California Constitution." (Italics added.) And section 17556 reflects this definition by stating that costs are not deemed mandated by the state to the extent the "local agency or school district *has the authority* to levy service charges, fees, or assessments sufficient to pay for the mandated program or increased level of service." (§ 17556, subd. (d), italics added.)

[13] ***812** The College Districts point out, though, in a series of overlapping arguments, that sections 17514 and 17556 govern the *Commission's* determination of whether a program is a state-mandated program, not the *Controller's* determination as to audit reductions; and the Commission has already found the Health Fee Elimination Program to be a state-mandated program. This observation, however, does not diminish the basic principle underlying the state mandate process that sections 17514 and 17566, subdivision (d) embody: To the extent a local agency or school district "has the authority" to charge for the mandated program or increased level of service, that charge cannot be recovered as a state-mandated cost.[8] (See *Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 401, 69 Cal.Rptr.2d 231 ["the plain language of [section 17556, subdivision (d)] precludes reimbursement where the local agency has the authority, i.e., the right or the power, to levy fees sufficient to cover the costs of the state-mandated program"]; see *Connell,* at pp. 397–398, 69 Cal.Rptr.2d 231.)

8 In light of sections 17514 and 17556, subdivision (d), the Commission found the Health Fee Elimination Program to be a reimbursable state-mandated program to the extent the cost to community college districts of maintaining their level of health services at the

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> 1986–1987 level, as required by the Health Fee Elimination Program mandate, is not covered by the nominal health fee authorized by section 76355, subdivision (a)(1) ($10 maximum per semester per student).

And this basic principle flows from common sense as well. As the Controller succinctly ****48** puts it, "Claimants can choose not to require these fees, but not at the state's expense."

[14] The College Districts also argue that the Controller lacks the authority to rely on these Government Code sections to uphold its Health Fee Rule. The argument is that, since the Health Fee Rule is a claiming instruction, its validity must be determined *solely* through the Commission's P & G's. To accept this argument, though, we would have to ignore, and so would the Controller, the fundamental legal principles underlying state-mandated costs. We conclude the Health Fee Rule is valid.

DISPOSITION

We direct the trial court to issue a peremptory writ of mandate that invalidates the Controller's audits of the School Districts' SDC and EPEPD Program reimbursement claims for the applicable periods identified in footnote 2, *ante*, encompassing the fiscal years 1998 to 2003, to the extent those audits were based on the CSDR and did not become final audit determinations prior to the applicable three-year statute of limitations. If it chooses to do so, the Controller may re-audit the relevant reimbursement claims based on the documentation requirements of the P & G's and claiming ***813** instructions when the mandate costs were incurred (i.e., not using the CSDR). In all other respects, the judgment is affirmed.

The parties shall each bear their own costs on appeal. (Cal. Rules of Court, rule 8.278(a)(3).)

We concur: SCOTLAND, P.J., and NICHOLSON, J.

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Distinguished by Scott v. Alpha Beta Co., Cal.App. 2 Dist., April 8, 1980

152 Cal.App.2d 733
District Court of Appeal, Second District, Division 2, California.

Pearl OLDENBURG, Plaintiff and Respondent,
v.
SEARS, ROEBUCK & CO., a corporation, Defendant and Appellant.

Civ. 22324.
|
July 24, 1957.
|
Rehearing Denied Aug. 15, 1957.
|
Hearing Denied Sept. 18, 1957.

Synopsis
Action against storekeeper for injuries sustained when business invitee fell after stepping on piece of chalk on sidewalk which was exclusively in control of storekeeper. The Superior Court, Los Angeles County, Otto J. Emme, J., entered judgment on verdict for plaintiff and an order denying defendant's motion for judgment notwithstanding the verdict. The defendant appealed. The District Court of Appeal, Fox, J., held that evidence failed to show that storekeeper was responsible for presence of chalk on sidewalk or that storekeeper had actual or constructive notice of chalk.

Judgment and order reversed with direction.

West Headnotes (11)

[1] **Negligence**
Care Required of Store and Business Proprietors

The occupier of business property owes to invitees a duty to exercise reasonable care in keeping premises reasonably safe for such invitees.

5 Cases that cite this headnote

[2] **Negligence**
Slips and falls in general

Invitee suing occupier of business property for personal injuries sustained in a fall must establish that occupier breached duty to exercise reasonable care to keep the property reasonably safe for invitee, and this burden is not met merely by proof that invitee stepped on something and thereby was caused to fall and receive injuries.

11 Cases that cite this headnote

[3] **Negligence**
Burden of Proof

In negligence action, burden is on plaintiff to prove every essential fact on which she relies.

17 Cases that cite this headnote

[4] **Judgment**
Evidence to sustain judgment

A judgment cannot be based on guess, conjecture or speculation.

3 Cases that cite this headnote

[5] **Evidence**
Sufficiency to support verdict or finding

Substantial evidence is required to establish each essential affirmative allegation, and a scintilla of evidence is not sufficient for that

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purpose.

2 Cases that cite this headnote

[6] **Evidence**
Inferences from evidence

An inference founded on a fact legally proved is sufficient to establish a fact in issue.

Cases that cite this headnote

[7] **Appeal and Error**
Verdict, Findings, and Sufficiency of Evidence

In analyzing the testimony to determine whether there is sufficient evidence to support a particular finding, an appellate court must accept as established all facts and all inferences favorable to respondent which find substantial support in the evidence.

7 Cases that cite this headnote

[8] **Trial**
Credibility of Witnesses

Credibility of witnesses is for jury.

2 Cases that cite this headnote

[9] **Evidence**
Credibility of witnesses in general

The jury's disbelief of evidence does not create affirmative evidence to the contrary of that which is discarded.

6 Cases that cite this headnote

[10] **Negligence**
Slips and falls in general

In action against storekeeper for injuries sustained when business invitee fell after stepping on piece of chalk on sidewalk which was exclusively in control of storekeeper, evidence failed to show that storekeeper was responsible for chalk on sidewalk or that storekeeper had actual or constructive notice of the chalk.

7 Cases that cite this headnote

[11] **Evidence**
Acts or Conduct

Storekeeper did not admit liability for business invitee's injury sustained in fall on sidewalk exclusively in storekeeper's control, by paying ambulance bill and doctor bill for emergency call.

1 Cases that cite this headnote

Attorneys and Law Firms

****33 *737** Moss, Lyon & Dunn, Sidney A. Moss, John D. Wheeler and Henry F. Walker, Los Angeles, for appellant.

John P. McGinley and David M. Harney, Los Angeles, for respondent.

Opinion

****34** FOX, Justice.

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While walking on the sidewalk adjacent to one of defendant's stores, plaintiff stepped on a piece of chalk. It rolled and caused her to fall. She sued defendant for damages for the injuries thus sustained. The jury returned a verdict in her favor. Defendant appeals from the judgment and the order denying its motion for a judgment notwithstanding the verdict.

In seeking a reversal defendant (sometimes herein referred to as Sears) contends that the evidence fails to show that it was either responsible for the chalk being on the sidewalk, or that it had either actual or constructive notice of its presence there.

Sears operates a store at 12121 Victory Boulevard, in North Hollywood, California, which is known as the Valley Store. It is located on the north side of Victory, on which it has a frontage of approximately 150 feet; it has a depth of some 500 feet to Hamlin. There is a sidewalk and parking area on both the east and west sides of the store. The sidewalks are between 10 and 13 feet wide and are adjacent to the building. There are three doors opening onto the sidewalk on the east; one of these is toward the north end of the building, one toward the south, and the other about the middle. There are also three openings on the west. Only the employee's entrance, which is located near the middle, has any significance ***738** here. The stationery and drug departments are located on the first floor and generally in the southwest quadrant thereof. In the northeast corner nursery products are sold. There is a toy department on the second floor. The parking areas were not for the sole use of defendant's customers; there were other stores in the vicinity whose customers also used these parking facilities.

Plaintiff's fall occurred on the sidewalk adjacent to the east side of the store, between the southernmost and middle door-ways. It was stipulated that plaintiff was a business invitee at the time and place of the accident, and that defendant 'was exclusively in the control, operation and maintenance of the sidewalk in question.'

The piece of chalk on which plaintiff stepped was pink, round in shape, approximately 1 1/2 inches long and 5/16ths of an inch in diameter. There is no claim that anything else caused her to fall.

Plaintiff was 68 years of age at the time of the accident. She and her husband went to Sears' Valley Store for the purpose of purchasing a potted plant. They parked in the parking area on the east side near the center of the building. There were 'very few cars' on the lot and not many people around. They entered the store on the east side by the south door. It was about 9:30 in the morning; the store was 'just opening up.' Upon inquiring about garden plants, plaintiff was directed to the northeast corner of the store. There she was informed that the potted plant she desired was not in stock. She and her husband then left the store through the northerly door on the east side of the building; they proceeded in a southerly direction on the sidewalk toward their car. A short distance after passing the center door, plaintiff stepped on the piece of chalk and fell. She never saw what caused her to fall. Her husband, however, retrieved the offending object.

Plaintiff's first witness at the trial was Mrs. Worthen, who was then employed by Sears as a registered nurse at the Valley Store. She was summoned to the scene of the accident around 10:00 o'clock that morning. She called an ambulance service which, however, did not respond promptly, thus necessitating a check on it. Also, she called Dr. Goodman, a Sears approved doctor, and explained the situation to him. He advised the nurse that he would get in touch with Dr. Gamble 'because it sounds like she has a broken hip.' The nurse attended plaintiff until the ambulance took her to the hospital, where Dr. Gamble took charge.

***739** In the meantime, the nurse filled out the Customer Accident Report, in which she indicated by a checkmark that the location where the accident happened was swept daily. However, she had no personal knowledge as to how often the premises ****35** were swept. She received her information as to this matter from the personnel office.

While the nurse was at the scene, she observed two chalk marks. They were on separate but adjacent squares of the sidewalk. One was approximately 2 3/4 inches long while the other was a little more than half that length. The larger mark was near where plaintiff's 'knees would be.'

In further describing the sidewalk at the scene of the accident there was testimony indicating the presence of two or three globs of hardened gum, 'a black mark,' approximately a half dozen 'little pieces of something' that the nurse picked up and put in her pocket, and two or three places which the nurse rubbed with her foot 'as though she was trying to rub something out.' It is not claimed, however, that any of these items had anything to do with plaintiff's falling.

Charles W. Teed was defendant's operating superintendent, which included maintenance. As part of his duties, Teed inspected the sidewalks bordering the store three or four times daily. There was 'a definite schedule for constantly maintaining cleanliness.' It called, inter alia, for cleaning the sidewalks between 6:30 and 9:00 o'clock each morning. The system provided for 'constant patrol' with respect to the maintenance of the

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sidewalks and 'sweeping whenever necessary.'

Mr. Teed usually arrived at the store between 8:45 and 9:00 o'clock. After he parked, the first thing he did was to inspect the sidewalks. While he had no independent recollection of the morning of this accident, in this respect, he made such an inspection every day that he came to work and he was there that particular day, having been called to the scene of the accident before plaintiff was taken to the hospital.

Directly under Mr. Teed on the maintenance side of the store's operation was the building engineer, Mr. Schugt. Mr. Teed told him that 'he was to maintain a very high standard of cleanliness'; that the premises were 'to be maintained in a safe and clean manner at all times.' The porters and maids who did the cleaning were under the supervision of Schugt. The head porter was Mr. Clay. On his day off, Mr. Ham acted in his place.

***740** The porters' time cards disclose that on February 16, 1954, the date of plaintiff's accident, six porters reported for work on the 4:00 a.m. shift (other porters came to work at 9:30). It was Clay's day off, so Ham acted as head porter. Only the latter's testimony and that of Mr. Polley, whose duty it was to clean the sidewalks commencing at 6:30 a.m., are important.

The Valley Store had an alarm system, referred to as ADT, which operated and controlled until 7:40 a.m. If, before that time, any door was opened other than at a scheduled time an alarm would go off. Only the employees' entrance was scheduled for opening at an earlier hour. After the 4:00 a.m. opening of the employees' entrance, its next scheduled opening was 6:30; thereafter the scheduled openings were 7:00, 7:20 and 7:40 a.m.

Neither Ham nor Polley had any independent recollection of the day in question. However, every day that Polley worked he would, upon being let into the building with the other porters on the 4:00 a.m. opening, begin working on the inside. Part of his job was to clean the sidewalks. He was on a regular schedule for starting this part of his work and reported at the employees' entrance each day so as to be let out on the 6:30 ADT opening. He took with him a broom, a dustpan, pushcart and scraper. He always started his sidewalk cleaning at the employees' entrance. From there he worked south each morning to Victory and continued all the way around the building. It took about 2 1/2 hours to clean the sidewalks. When the finished this work he reported to the head porter (on this day Mr. Ham), who gave him his next assignment. Polley knew that the head porter and Schugt would inspect his work to see whether he had properly cleaned the sidewalks. Polley checked the sidewalks four or five times daily to see whether they were clean.

It was Ham's practice, in the absence of Clay, to unlock the various doors to the ****36** store between 9:00 and 9:30 each morning and at that time step out and look up and down the sidewalk, and then put the door on a hook so that no one could come in before opening time. When the store opened at 9:30 Ham would walk around the store inspecting the sidewalks.

Mr. Schugt was at work on the day of the accident. He inspected the sidewalks every day when he came to work between 8:00 and 8:30 a.m. and inspected them at frequent intervals throughout the day.

After the accident, Mr. Rowland, defendant's security ***741** supervisor, investigated to see whether chalk was sold in the store. He found that neither the stationery nor the toy departments had chalk on hand. He did not inquire at other departments.

While other employees of defendant, such as Miss Fife, personnel manager, and Mr. Carmichael, manager of the drug and cosmetic department, were at the scene of the accident after plaintiff fell, not one of them was able to throw any significant additional light on the circumstances surrounding her fall. Although plaintiff's husband was with her and attended the trial he did not testify.

[1] [2] [3] [4] [5] [6] [7] The occupier of business property owes to invitees a duty to exercise reasonable care in keeping the premises reasonably safe for such invitees. Louie v. Hagstrom's Food Stores, 81 Cal.App.2d 601, 608, 184 P.2d 708; Ahern v. S. H. Kress & Co., 97 Cal.App.2d 691, 693, 218 P.2d 108; Frank v. J. C. Penney Co., Inc., 133 Cal.App.2d 123, 125, 283 P.2d 291. As in other actions based on negligence a plaintiff, in order to recover damages, must also establish that the defendant breached that duty and that such breach was a proximate cause of injury to plaintiff. Palmer v. Crafts, 16 Cal.App.2d 370, 375, 60 P.2d 533. The burden is on the plaintiff to prove every essential fact on which she relies (McKellar v. Pendergast, 68 Cal.App.2d 485, 489, 156 P.2d 950). This burden is not met merely by proof that plaintiff invitee stepped on something while on invitor's premises and thereby was caused to fall and receive injuries, for 'no inference of negligence arises based simply upon proof of a fall upon the owner's floor. The doctrine of res ipsa loquitur is not applicable to such cases.' Vaughn v. Montgomery Ward & Co., 95 Cal.App.2d 553, 556, 213 P.2d 417, 419; Thomas v. Moore, 146 Cal.App.2d 59, 303 P.2d 624. Also, as pointed out in Reese v. Smith, 9 Cal.2d 324, at page 328, 70 P.2d 933, at page 935: 'If the existence of an essential fact upon which a party relies is

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left in doubt or uncertainty, the party upon whom the burden rests to establish that fact should suffer, and not his adversary. [Citations.] A judgment cannot be based on guesses or conjectures. [Citation.]' Nor may a verdict be upheld 'only by resort to speculation.' Gray v. Carter, 100 Cal.App.2d 642, 645, 224 P.2d 28, 30. Substantial evidence is required to establish each essential affirmative allegation—a scintilla of evidence is not sufficient for that purpose. In re Estate of Teed, 112 Cal.App.2d 638, 644, 274 P.2d 54. Of course an inference ***742** is sufficient to establish a fact in issue but such an inference must be founded on 'a fact legally proved.' Code Civ.Proc. §§ 1958, 1960. In analyzing the testimony to determine whether there is sufficient evidence to support a particular finding, an 'appeallate court must accept as established all facts and all inferences favorable to respondent which find substantial support in the evidence.' New v. New, 148 Cal.App.2d 372, 306 P.2d 987, 994.

[8] [9] It is, of course, the province of the jury to determine the credibility of the witnesses. Naturally, in the exercise of their discretion, they may reject testimony as unworthy of credence, but 'disbelief does not create affirmative evidence to the contrary of that which is discarded.' Lubin v. Lubin, 144 Cal.App.2d 781, 302 P.2d 49, 60; In re Estate of Bould, 135 Cal.App.2d 260, 264, 287 P.2d 8, 289 P.2d 15. 'The fact that a jury may disbelieve the testimony of a witness who testifies to the negative of an issue does not of itself furnish any evidence in support of the affirmative of that issue, and does not warrant a finding in the affirmative thereof unless there is other ****37** evidence in the case to support such affirmative.' Marovich v. Central California T. Co., 191 Cal. 295, 304, 216 P. 595, 600; Miller v. Stults, 143 Cal.App.2d 592, 603, 300 P.2d 312; Moore v. Chesapeake & O. Ry. Co., 340 U.S. 573, 576, 71 S.Ct. 428, 95 L.Ed. 547.

Pertinent to a determination of this case are the principles enunciated by the Supreme Court in Hatfield v. Levy Brothers, 18 Cal.2d 798, at page 806, 117 P.2d 841, at page 845. It is there stated: 'Where the dangerous or defective condition of the property which causes the injury has been created by reason of the negligence of the owner of the property or his employee acting within the scope of the employment, the owner of the property cannot be permitted to assert that he had no notice or knowledge of the defective or dangerous condition in an action by an invitee for injuries suffered by reason of the dangerous condition. Under such circumstances knowledge thereof is imputed to him. [Citation.] Where the dangerous condition is brought about by natural wear and tear, or third persons, or acts of God or by other causes which are not due to the negligence of the owner, or his employees, then to impose liability the owner must have either actual or constructive knowledge of the dangerous condition or have been able by the exercise of ordinary care to discover the condition, which if known to him, he should realize as involving an unreasonable risk to invitees on his ***743** premises. His negligence in such cases is founded upon his failure to exercise ordinary care in remedying the defect after he has discovered it or as a man of ordinary prudence should have discovered it.'

[10] Plaintiff does not contend there is any direct evidence that defendant was responsible for the piece of chalk in question being on the sidewalk. Our search of the record fails to disclose any legally proved fact (C.C.P. § 1960) from which an inference reasonably may be drawn that defendant was responsible for its presence there. There is no testimony that defendant had chalk in stock at that time. In fact, the testimony on the question is that given by Mr. Rowland to the effect that he inquired at the toy and stationery departments on the day of the accident and was informed that neither of those departments had chalk in stock, and that he did not make such inquiry at other departments. If we assume the jury did not believe this testimony, plaintiff's case is not assisted for such disbelief does not 'warrant an inference that the truth is the direct converse of the rejected testimony.' In re Estate of Bould, supra, 135 Cal.App.2d at page 265, 287 P.2d at page 10; Lubin v. Lubin, supra. The failure of the jury to accept Mr. Rowland's testimony as true would not justify an inference that defendant did have chalk in stock and that defendant was responsible for the chalk's presence on the sidewalk on the fateful morning.

Only upon the basis of conjecture, speculation or guess may it be said that defendant was responsible for the piece of chalk in question being on the sidewalk. The law is clear that a verdict and judgment cannot rest on such a basis.

Plaintiff seeks also to sustain the verdict and judgment on the theory that even if the piece of chalk that caused her to fall was deposited on the sidewalk by some third person, defendant and constructive knowledge of its presence there and failed to exercise reasonable care to remove it and that such negligence was a proximate cause of her injury. To impose liability in such circumstances the occupier of business premises '* * * must have either actual or constructive knowledge of the dangerous condition or have been able by the exercise of ordinary care to discover the condition, which if known to him, he should realize as involving an unreasonable risk to invitees on his premises. His negligence in such cases is founded upon his failure to exercise ordinary care in remedying the defect after he has discovered it or as a man of ordinary prudence should have discovered it.' ***744** Hatfield v. Levy Brothers, supra; Louie v.

Hagstrom's Food Stores, 81 Cal.App.2d 601, 606, 184 P.2d 708; Girvetz v. Boy's Market, Inc., 91 Cal.App.2d 827, 829, 206 P.2d 6, 8. In the last cited ****38** case, the court pointed out that 'The fact alone that a dangerous condition existed at the time the accident occurred will not warrant an inference that the defendant was negligent. There must be some evidence, direct or circumstantial, to support the conclusion that the condition had existed long enough for the proprietor, in the exercise of reasonable care, to have discovered and remedied it.' To the same effect are Owen v. Beauchamp, 66 Cal.App.2d 750, 752, 152 P.2d 756; McKellar v. Pendergast, 68 Cal.App.2d 485, 491, 156 P.2d 950; Louie v. Hagstrom's Food Stores, supra, 81 Cal.App.2d at page 607, 184 P.2d 708.

There is no evidence that defendant had any actual knowledge of the presence of the piece of chalk on its sidewalk. There is no direct evidence that it was there for any particular period of time—no one testified to having seen it prior to plaintiff's fall.

In her attempt at 'reconstructing the evidence' plaintiff says it appears that one of the two previously mentioned chalk marks on the sidewalk was there prior to plaintiff's fall; that 'the pre-existing chalk mark in all probability was caused when appellant's sweeper swept the sidewalk some several hours earlier;' and that the chalk on which plaintiff fell must either have had its origin with defendant (an argument already considered), 'or the chalk had been on the sidewalk for such an appreciable period of time * * * that it had created a mark on the sidwalk before respondent fell as a result of its presence.' In thus 'reconstructing the evidence' plaintiff has indulged in a bit of what might be called 'poetic license.' There is nothing in the evidence to indicate that one of the chalk marks was on the sidewalk prior to the time plaintiff and her husband came along. It is not unlikely that plaintiff was responsible for both of these chalk marks. The smaller of the two marks was to the north of the larger one. Thus, in her walk south she first came to the point where the small mark was found. The larger mark was only a step or two further south in the direction she was walking. In taking a step, plaintiff may have kicked the chalk with such force that it rolled forward a few feet (thus remaining in her pathway) but the downward pressure of her foot may have been great enough to make a small mark where the initial impact occurred. Upon stepping ***745** on it more firmly a bigger mark was made and she was caused to fall. This hypothesis may be challenged as speculative but it is no more speculative than plaintiff's assertion that the mark was there before plaintiff arrived. In support of her theory that one of the chalk marks was on the sidewalk before plaintiff fell, she surmises that 'the pre-existing chalk mark in all probability was caused when appellant's sweeper swept the sidewalk some several hours earlier.' This statement on its face discloses it is a mere guess. Furthermore, it is unlikely that such a mark would be made in sweeping the sidewalk with a broom, which is the tool Polley testified he used for that purpose.

The hypothesis that 'the chalk had been on the sidewalk for such an appreciable period of time that it had created a mark thereon before plaintiff fell' is not only speculative, as previously pointed out, but without legal significance. True, it might have been dropped there and stepped on in such fashion as to produce a mark on the sidewalk five minutes before plaintiff came along. But what would not support the conclusion that the dangerous condition had existed long enough for the defendant, in the exercise of reasonable care, to have discovered and removed it. Constructive knowledge of the presence of the chalk would thus be lacking. Girvetz v. Boys' Market, Inc., supra; Owen v. Beauchamp, supra; Louie v. Hagstrom's Food Stores, supra. Plaintiff thus fails to establish any reasonable inference in support of her theory of constructive knowledge on the hypothesis that one of the chalk marks was on the sidewalk before she fell.

Plaintiff attaches significance to the condition of the sidewalk in the area where she fell. She draws the inference that it had not been properly maintained because there ****39** were two or three globs of hardened gum and 'a black mark' on it, and the nurse picked up approximately a half dozen 'little pieces of something' and rubbed two or three places with her foot 'as though she was trying to rub something out.' It is not claimed that these items had anything to do with plaintiff's falling. Nor is it suggested that they created a dangerous condition. Defendant therefore violated no duty to plaintiff in thus maintaining the sidewalk in this area. Furthermore, the presence of these items furnishes no basis for an inference that the piece of chalk had been there for such a period of time that defendant, in the exercise of reasonable care, should have discovered it and removed it. Hence, ***746** defendant was not charged with constructive knowledge of the presence of the chalk on the sidewalk. Owen v. Beauchamp, supra; McKellar v. Pendergast, supra; Frank v. J. C. Penney Co., Inc., supra.

The cases cited by plaintiff do not sustain her position. In each of them there was evidence affirmatively proving either that the condition was created by defendant or that the condition had existed for such length of time as to charge defendant with constructive knowledge thereof.[1]

[1] The following is a brief analysis of plaintiff's cases:
In Travis v. Metropolitan Theatres Corp., 91 Cal.App.2d 664, 205 P.2d 475, 477, there was evidence that the vomit upon which the plaintiff slipped had actually remained on the floor 'long enough to form a crust on its surface.' It could thus be inferred that the

substance had been there for a substantial period of time.

In Hamilton v. Pacific Elec. Ry. Co., 12 Cal.2d 598, 86 P.2d 829, 830, defendant was a common carrier. The evidence indicated that during the thirty minute period while plaintiff was in the waiting room, no one entered or left. The puddle of oil upon which plaintiff slipped was located in the room by the exit door. It was thus a question for the jury whether this proved that the oil was there 'for such a length of time that the defendant was charged with notice of the fact of its said existence and location.'

In Lehman v. Richfield Oil Corp., 121 Cal.App.2d 261, 263 P.2d 13, 15, plaintiff slipped on a telephone booth step. There was evidence 'that the oily or greasy spot had been on the step for many hours before the accident.'

In Louie v. Hagstrom's Food Stores, 81 Cal.App.2d 601, 184 P.2d 708, 712, there was much direct and circumstantial evidence indicating that the syrup which caused plaintiff to fall had been on the floor for a substantial length of time; the cashier could see the area from her position; no employee examined the area for at least twenty minutes before the accident; the puddle of syrup was quite large; the syrup was thick and the day was cold, indicating that a substantial period of time would have to elapse before the puddle would reach such proportions. The evidence showed the 'this condition existed long enough so that defendant should, in the exercise of ordinary care, have discovered and remedied it.'

In Tuttle v. Crawford, 8 Cal.2d 126, 63 P.2d 1128, the defendants carried wet lettuce across the cement floor of their market. After plaintiff fell she had vegetable particles adhering to her stockings and dress, and there were stains on her garments showing contact with unclean water. The evidence indicated that the dangerous condition was created by the defendants themselves, and that they either did not clear the place of that condition or improperly attempted to do so.

In Van Wye v. Robbins, 48 Cal.App.2d 660, 120 P.2d 507, 509, plaintiff fell upon a heavy black grease puddle, one-eighth of an inch thick and five inches in diameter. There was evidence to support the finding that the grease had remained upon the surface of the parking lot 'for more than twenty minutes.'

In Sears, Roebuck & Co. v. Meyer, 9 Cir., 205 F.2d 321, 322, the evidence indicated that oil upon which plaintiff slipped had remained on the cement for an hour and forty-five minutes before the accident. Plaintiff testified that the oil substance was 'dusty' and 'had dirt on it' when she slipped upon it, thus indicating that it had been there for some time. Furthermore, defendant 'knowingly permitted its customers to use a driveway which occupied a part of the sidewalk, thereby creating a condition which was likely to cause harm to persons using that part of the sidewalk.'

In Ahern v. S. H. Kress & Co., 97 Cal.App.2d 691, 218 P.2d 108, 113, the puddle of liquid in which plaintiff slipped and fell was located directly under a counter which contained paints, oils, turpentine, paint remover and related substances. Therefore, it was reasonable to infer that the puddle was the result of some leakage from the counter. Moreover, 'the size, location, shape and nature of the puddle, together with the other facts and circumstances' were sufficient to sustain a finding that the condition had existed for a substantial length of time.

In Goldsmith v. Mills, 130 Cal.App.2d 493, 279 P.2d 51, the area where plaintiff fell was littered with paper. The evidence indicated not only that the condition had existed for a substantial length of time, but also that defendants' employees had created the condition.

In Hale v. Safeway Stores, Inc., 129 Cal.App.2d 124, 276 P.2d 118, 120, plaintiff slipped on a banana in the aisle of defendant's store near the fruit counter. The banana had some 'small teeth marks' on it, apparently made by a child who bit into the banana and then dropped it on the floor. Plaintiff testified that in the thirty or more minutes during which she was in the store prior to the accident, she saw no one around the fruit counter, although an employee testified that he swept the area of few minutes before the injury occurred. Plaintiff also testified that no small children were in the store during the period she was there. The court reversed a judgment of nonsuit on the ground that there was some evidence from which a jury might have found that the banana had lain on the floor for a length of time sufficient enough to charge defendant with knowledge. The court went on to state: 'Concededly a person operating a fruit and vegetable section in a store should at least, as to that portion of the premises, in the exercise of ordinary care, maintain a more vigilant outlook than would be required in the operation of some other type of business where the danger of things falling on the floor upon which a person might easily slip and fall is not so obvious.' 129 Cal.App.2d at page 132, 276 P.2d at page 123.

In Wills v. J. J. Newberry Co., 43 Cal.App.2d 595, 111 P.2d 346, there was substantial evidence that defendant's employees had actual knowledge of the existence of the vomit upon which plaintiff slipped and fell. There were several salesgirls in the immediate vicinity when a small boy had vomited. Moreover, another patron slipped and fell at that spot a few minutes before the plaintiff's injury occurred.

In Harris v. Joffe, 28 Cal.2d 418, 170 P.2d 454, a landlord-tenant case, there had been several complaints by various tenants of the apartment house concerning the slippery condition of the vestibule floor (which had no floor covering) and the unlighted condition which prevailed most of the time. Thus, defendant had actual knowledge of the dangerous condition.

In Hatfield v. Levy Brothers, 18 Cal.2d 798, 117 P.2d 841, the evidence showed that the floor where plaintiff fell was extremely slippery. A skid mark was left by plaintiff's shoe and there was wax on her coat. The floor had been waxed by defendant's employee just prior to the accident. Thus, there was substantial evidence that defendant had created the dangerous

condition.

In Granucci v. Claasen, 204 Ca. 509, 269 P. 437, 59 A.L.R. 435, there was substantial evidence that defendant had not inspected the wooden driveway where plaintiff fell for many months before the accident. Some of the spikes or nails had worked as much as three-fourths of an inch upward and the boards were somewhat loosened by the heavy vehicles which had used the driveway for many years before the accident.

In Sanders v. MacFarlane's Candies, 119 Cal.App.2d 497, 259 P.2d 1010, the evidence showed that the floor where plaintiff slipped was highly polished and was slippery by reason of an excessive amount of wax. Defendant's employee had polished the floor on the weekend before the accident, which occurred on a Monday.

In Mattox v. Isley, 111 Cal.App.2d 774, 245 P.2d 664, the evidence showed that the dangerous condition at the back of a seat in defendant's theater had not been remedied after the accident. Moreover, other seats in the theater were found to be in the same condition. The court ruled that a presumption of constructive notice could arise from factors such as these, as well as from mere lapse of time.

****40 *747** Plaintiff's next contention is that the judgment may be sustained on the basis of admissions against interest in the Customer Accident Report which was filled out by defendant's ***748** nurse and signed by Mr. Teed, who was defendant's operating superintendent. Plaintiff argues that the fact that the space following the word 'inspected' on this report was not checked justifies an inference that 'the area in question had not been inspected prior to the accident.' This is not a legitimate inference. ****41** The obvious fact is that the report contains no statement relative to inspection. It is simply silent on that question. It is not an admission that the area had not been inspected. The failure of the nurse to answer the question relative to inspection is understandable since this was a matter outside the normal scope of her activities.

In this connection, plaintiff argues that from the fact the nurse placed a checkmark in the blank space following the words 'Swept Daily' on the report it may be inferred that the area in question was only swept once a day. Plaintiff then says '[t]hat evidence of failure to sweep and inspect can establish liability in the absence of any evidence of time lapse.' The cases relied on by plaintiff do not support her position (each is briefly analyzed in the footnote, supra). Where, as in this phase of her argument, plaintiff is relying upon constructive knowledge of the dangerous condition on the part of defendant, the basis of liability is not on the failure to sweep the premises but the fact that the dangerous condition has existed for such a period of time that defendant, in the exercise of reasonable care, should have discovered it and remedied it. There must be substantial evidence, either direct or circumstantial, to support this conclusion before a judgment on this theory can be sustained. Girvetz v. Boy's Market, Inc., supra; Owen v. Beauchamp, supra; McKellar v. Pendergast, supra; Louie v. Hagstrom's Food Stores, supra.

[11] Plaintiff's final contention is that defendant admitted ***749** liability for plaintiff's injury by paying the ambulance bill and the doctor bill for the emergency call. This contention is without merit. Courts generally have held or recognized as inadmissible, evidence of payment, or offer or promise of payment, of medical, hospital and similar expenses of an injured litigant by the opposing party, in the absence of other circumstances indicating an admission of negligence. For a collection of these cases, see Annotation, 20 A.L.R.2d 291. A concomitant principle found in the cases is that, apart from the admissibility of such evidence, the act itself does not tend to imply an acknowledgment of liability. Winningham v. Travelers Inc. Co., 5 Cir., 93 F.2d 520, 521; Martin v. Burgess, 5 Cir. 82 F.2d 321, 323; Potts v. Armour & Co., 183 Md. 483, 39 A.2d 552, 556; Norman v. Porter, 197 N.C. 222, 148 S.E. 41, 42; Young v. Creegan, La.App., 23 So.2d 820, 821; Ocean Accident & Guarantee Corp. v. Missouri Engineering & Contracting Co., Mo.App., 63 S.W.2d 196, 199. See also Annotation, 20 A.L.R.2d 291, 292 note 1. Logic and reason support this view. If a contrary rule were adopted, it would tend to deter, instead of encourage, one who has injured another from giving aid. Biddix v. Rex. Mills, Inc., 237 N.C. 660, 75 S.E.2d 777. In a well known parable, the Good Samaritan placed an injured man upon his own beast, poured wine and oil into his wounds, and paid his maintenance charges at the inn. He generously promised to give evne more, if necessary. No one would suggest that by his conduct he impliedly admitted that he was liable for the injuries the unfortunate man sustained. See Brown v. Wood, 201 N.C. 309, 160 S.E. 281. This conclusion is analogous to the doctrine, now well established, that evidence of precautions taken or repairs made after an accident is not admissible to show a negligent condition at the time of the accident. Helling v. Schindler, 145 Cal. 303, 312, 78 P. 710.

The judgment and the order are reversed, and the trial court is directed to grant defendant's motion for judgment notwithstanding the verdict.

MOORE, P. J., and ASHBURN, J., concur.

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Hearing denied; CARTER, J., dissenting. 152 Cal.App.2d 733, 314 P.2d 33

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107 Cal.App.3d 475
Court of Appeal, Third District, California.

The PEOPLE, Plaintiff and Respondent,
v.
Roy Eugene HENDERSON, Defendant and Appellant.

Cr. 9939.
|
June 25, 1980.
|
Hearing Denied Aug. 28, 1980.

Synopsis
The People petitioned for extension of defendant's commitment as a mentally disordered sex offender. The Superior Court, Sacramento County, William H. Lally, J., extended the commitment, and defendant appealed. The Court of Appeal, Puglia, P. J., held that (1) an estimate of an individual's dangerousness is a proper subject for expert psychiatric evaluation and testimony and may be considered by the fact finder; (2) application to defendant of the statutory procedure for extending the maximum term of commitment for certain mentally disordered sex offenders did not violate the prohibition against ex post facto laws; (3) singling out for extended commitment "treatable" mentally disordered sex offenders did not violate equal protection; (4) the extended commitment procedure comported with due process requirements; (5) the commitment provision was not void for vagueness; (6) the trial court did not commit error by refusing to give a proffered jury instruction; and (7) it was within the trial court's discretion to conclude that a statement made by a prospective juror during jury selection was not prejudicial and did not warrant dismissal of the entire jury panel.

Affirmed.

Blease, J., concurred in the result and filed opinion.

Vacating, Cal.App., 162 Cal.Rptr. 886.

West Headnotes (19)

[1] **Mental Health**
Appeal

Although it appeared that one-year extended commitment to state hospital as mentally disordered sex offender had expired, the challenge to the commitment was not moot where the records of the court, of which judicial notice was taken, disclosed that prior to the expiration of the extended one-year commitment, a second proceeding extended the defendant's commitment for another year and where a separate appeal from the second extension was pending before the court and any defect which would invalidate the first extension of commitment would necessarily render all subsequent extension orders invalid. West's Ann.Welfare & Inst.Code, § 6316.2.

Cases that cite this headnote

[2] **Mental Health**
Discharge or Continued Commitment

Both the prior criterion for extension of commitment as a mentally disordered sex offender, which demanded that the person present a serious threat of substantial harm to the health or safety of others, and the amended requirement of "a substantial danger of bodily harm to others" referred not only to existing mental state but also to the probability of certain types of future behavior. West's Ann.Welfare & Inst.Code, § 6316.2.

1 Cases that cite this headnote

[3] **Evidence**
Mental Condition or Capacity

In proceeding on state petition to extend defendant's commitment as mentally disordered sex offender, the trial court properly admitted psychiatric opinion as to whether defendant presented a threat of substantial harm to the

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health and safety of others over objection that such psychiatric opinions did not meet minimal standards for admissibility, i. e., proven reliability and general acceptance in the relevant professional community. West's Ann.Welfare & Inst.Code, §§ 6302, 6307, 6316.2.

1 Cases that cite this headnote

[4] **Mental Health**
Discharge or Continued Commitment

An estimate of an individual's dangerousness is a proper subject for expert psychiatric evaluation and testimony and must be considered by the finder of fact in a proceeding to extend the commencement of a mentally disordered sex offender. West's Ann.Welfare & Inst.Code, § 6316.2.

Cases that cite this headnote

[5] **Mental Health**
Discharge or Continued Commitment

Mere fact that lay person might be able rationally to draw the same inferences as to dangerousness from the same facts without assistance of expert testimony does not deprive expert testimony as to dangerousness of all value where the testimony is relatively illuminating on the issue whether the commitment of a mentally disordered sex offender should be extended. West's Ann.Welfare & Inst.Code, § 6316.2.

3 Cases that cite this headnote

[6] **Mental Health**
Experts

Though techniques utilized by psychiatric experts to determine the dangerousness of an individual may not produce certainty, the significance of such failure to meet an ideal of perfection is a consideration for the trier of fact in weighing the effect of the testimony and does not render the testimony inadmissible in a mentally disordered sex offender proceeding. West's Ann.Welfare & Inst.Code, §§ 6302, 6307, 6316.2.

4 Cases that cite this headnote

[7] **Evidence**
Determination of Question of Competency

The qualification of an expert is a matter addressed to the sound discretion of the trial judge whose determination will be upheld unless a clear abuse of discretion is shown.

Cases that cite this headnote

[8] **Evidence**
Bodily and Mental Condition

In proceeding to extend commitment of mentally disordered sex offender, trial court did not abuse discretion when it admitted expert testimony that defendant constituted a substantial threat of harm to the health and safety of others. West's Ann.Welfare & Inst.Code, § 6316.2.

Cases that cite this headnote

[9] **Constitutional Law**
Involuntary Commitment
Mental Health
Sex Offenders

Statute providing for extension of commitment as a mentally disordered sex offender was not ex post facto legislation as applied to defendant where the operative date of the determinate sentencing law, which reduced the maximum penalty for defendant's underlying offense to

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three years, was the same as the effective date of the procedure to extend the maximum term of confinement for certain MDSO's notwithstanding fact that the determinate sentencing law became technically effective six months prior to its operative date. West's Ann.Welfare & Inst.Code, §§ 6316, 6316.2; West's Ann.Pen.Code, § 273a(1); West's Ann.Const. Art. 1, § 9; U.S.C.A.Const. Art. 1, § 9, cl. 3.

19 Cases that cite this headnote

[10] **Constitutional Law**
Penal Laws in General
Constitutional Law
Punishment in General

An "ex post facto law" is one which, in its operation, makes that criminal or penal which was not so at the time the action was performed or which increases the punishment or which, in relation to the offense or consequences, alters the situation of a party to his disadvantage. U.S.C.A.Const. Art. 1, § 9, cl. 3; West's Ann.Const. Art. 1, § 9.

1 Cases that cite this headnote

[11] **Mental Health**
Sex Offenders

The section which singles out certain mentally disordered sex offenders for extended commitment does not create an unconstitutional classification. West's Ann.Welfare & Inst.Code, § 6316.2; U.S.C.A.Const. Amend. 14.

1 Cases that cite this headnote

[12] **Mental Health**
Sex Offenders

Legislative finding, implicit in statutory scheme relating to mentally disordered sex offenders, that certain mentally disordered sex offenders shall be committed to state mental health facility because they are in need of and will benefit from the special treatment afforded there is an adequate constitutional ground for the differences in terms of commitment of "non-treatable" and "treatable" MDSO's. West's Ann.Welfare & Inst.Code, § 6316.2; U.S.C.A.Const. Amend. 14.

2 Cases that cite this headnote

[13] **Constitutional Law**
Commitment and Confinement
Mental Health
Sex Offenders

The section relating to commitment of mentally disordered sex offenders did not violate due process requirements by reason of fact that the standards for release from commitment were more stringent than standards for commitment. West's Ann.Welfare & Inst.Code, §§ 6316.2, 6325, 6325.1, 6327; West's Ann.Const. Art. 1, § 7; U.S.C.A.Const. Amends. 5, 14.

2 Cases that cite this headnote

[14] **Habeas Corpus**
Convicts and Insanity Acquittees; Incompetent Defendants

A mentally disordered sex offender who claims that he no longer fits the commitment criteria may obtain judicial relief by a writ of habeas corpus.

Cases that cite this headnote

[15] **Mental Health**
Evidence

Conceding, for the sake of argument, that due

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process requires proof of a recent overt act indicating a serious threat of substantial harm to the health and safety of others before a person may be committed as a mentally disordered sex offender, such requirement was met by testimony that defendant committed acts of verbal and physical aggression after being committed to a state hospital and by fact that the underlying offense of which defendant stood convicted occurred only three years before petition for extension of his commitment was filed. West's Ann.Welfare & Inst. Code, § 6316.2; U.S.C.A.Const. Amend. 14.

1 Cases that cite this headnote

[16] **Constitutional Law**
Commitment and Confinement
Mental Health
Sex Offenders

Fact that statute relating to commitment of mentally disordered sex offenders contained terms "mental disorder," "predisposed," and "serious threat of substantial harm" did not render the statute so vague as to violate due process. West's Ann.Welfare & Inst.Code, § 6316.2; U.S.C.A.Const. Amend. 14.

1 Cases that cite this headnote

[17] **Criminal Law**
Terms in Common Use

A court need not instruct the jury on terms which are well understood by all persons of average intelligence.

Cases that cite this headnote

[18] **Mental Health**
Discharge or Continued Commitment

In proceeding on petition to extend commitment of defendant as a mentally disordered sex offender wherein one issue was whether the offense for which defendant was convicted was committed primarily for the purpose of sexual arousal or gratification, it was not error for the trial court to refuse to instruct the jury that the relevant purpose was the defendant's principal or primary conscious intent at time the crime was committed. West's Ann.Welfare & Inst.Code, § 6302(a); West's Ann.Pen.Code, § 273a(1).

Cases that cite this headnote

[19] **Jury**
Grounds

In proceeding on petition to extend defendant's commitment as a mentally disordered sex offender, it was within the trial court's sound discretion to conclude that a statement by a prospective juror was not prejudicial and to refuse to dismiss the entire jury panel even though, during jury selection, a prospective juror was excused for cause after she revealed that the victim of defendant's underlying offense had been her client in psychotherapy "this year."

15 Cases that cite this headnote

Attorneys and Law Firms

***479 **23** Quin Denvir, State Public Defender, and Stephen Berlin, Deputy State Public Defender under appointment by the Court of Appeal, for defendant and appellant.

George Deukmejian, Atty. Gen., Robert H. Philibosian, Chief Asst. Atty. Gen., Arnold O. Overoye, Asst. Atty. ***480** Gen., Joel E. Carey, and Arthur E. Scotland, Deputy Attys. Gen., for plaintiff and respondent.

OPINION ON REHEARING

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PUGLIA, Presiding Justice.

We deal here with recently enacted legislation providing the mechanism to extend the commitments of certain mentally disordered sex offenders (MDSO). The defendant, committed as an MDSO, challenges the constitutionality of Welfare and Institutions Code section 6316.2 (Stats.1977, ch. 164, s 3; all further statutory references are to sections of the Welfare and Institutions Code unless otherwise indicated); he aims his major thrust, however, at the permitted scope of expert testimony received at his trial conducted pursuant to section 6316.2. The trial resulted in a one-year extension of defendant's MDSO commitment. We shall affirm the judgment.

Defendant was charged by felony complaint filed August 11, 1975, with (1) forcing a minor to copulate him orally (Pen.Code, s 288a), (2) willfully causing a child to suffer unjustifiable physical pain and mental suffering under circumstances likely to produce great bodily injury and death (Pen.Code, s 273a, subd. (1)), and (3) assault with force likely to produce great bodily injury (Pen.Code, s 245, subd. (a)). These offenses were alleged to have been committed August 6, 1975, upon a four-year-old boy. Defendant entered a plea of guilty before the magistrate to the felony charge of violation of Penal Code section 273a, subdivision (1), and was certified thereon to the superior court for further proceedings (Pen.Code, s 859a).

On December 9, 1975, the superior court adjourned criminal proceedings and certified defendant for hearing and examination to determine if he was an MDSO (s 6302). Thereafter, defendant was found to be an MDSO and, on January 6, 1976, was committed to the Department of Mental Health for confinement in Atascadero State Hospital.

[1] On March 28, 1978, the People timely filed a petition in superior court to extend defendant's commitment as an MDSO ****24** under section 6316.2. The court appointed psychiatrists to examine defendant. (ss 6316.2, subd. (e), 6307.) Thereafter a trial was held before a jury which sustained the petition. As a result, on July 26, 1978, defendant ***481** was recommitted to the Department of Mental Health for confinement in Atascadero State Hospital for the extended term of one year. Defendant timely filed notice of appeal.[1]

[1] On its face, the present appeal appears moot because defendant's one-year extended commitment has now expired. However, the records of this court, of which we take judicial notice (Evid.Code, s 452, subd. (d)(1)), disclose that prior to the expiration of the extended one-year commitment with which this appeal is concerned, a second proceeding extended defendant's commitment for another year to end on August 7, 1980; a separate appeal from the second extension is now pending before this court. Since any defects which would invalidate the first extension of commitment would necessarily render all subsequent extension orders invalid (s 6316.2, subd. (h); In re Acosta (1971) 21 Cal.App.3d 51, 54, 98 Cal.Rptr. 208; People v. Thomas (1968) 260 Cal.App.2d 196, 199-201, 67 Cal.Rptr. 234), the present appeal is not moot.

I.

Admissibility of Expert Testimony That Defendant Constituted a Serious Threat of Substantial Harm to Others.

At trial it was shown that defendant had committed the underlying criminal offense upon Alex P., the four-year-old son of the family with whom defendant was then staying. While defendant was babysitting the child, he became furious with him for repeated bedwetting and beat him severely. During the beating, defendant became sexually aroused and forced the boy to copulate him orally. The child suffered severe injuries, including wounds to his genitals, all of which required his hospitalization for three days.

During his initial commitment, defendant told a psychiatric technician at Atascadero that he had several times before spanked another child and become sexually aroused. While at Atascadero, defendant repeatedly broke the rules; his behavior there was marked by anger, acts of verbal and physical aggression and resistance to therapy. In the past, defendant had also habitually made obscene telephone calls.

[2] Several mental health experts testified at defendant's extended commitment hearing. The significance of their testimony to this appeal can best be understood in relationship to the relevant terms of section 6316.2, the extended commitment statute, which at the time of defendant's trial provided in part:

"(a) A person may be committed beyond the term prescribed by Section 6316.1 only under the procedure set forth in this section and only if such person meets all of the following:

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***482** "(1) The 'sex offense' as defined in subdivision (a) of Section 6302 of which the person has been convicted is a felony, . . .[2]

[2] The definition of "sex offense" in section 6302, subdivision (a), includes ". . . any felony . . . which is shown by clear proof . . . to have been committed primarily for purposes of sexual arousal or gratification."

"(2) Suffers from a mental . . . disorder, and as a result of such mental disorder, is predisposed to the commission of sexual offenses to such a degree that he presents a serious threat of substantial harm to the health and safety of others." (Emphasis added.)[3]

[3] The criterion that the person present "a serious threat of substantial harm to the health and safety of others" has been changed to require now that he present "a substantial danger of bodily harm to others" (Stats.1979, chs. 991, 992). Both criteria refer not only to existing mental state but also to the probability of a certain type of future behavior. Whether such predicted behavior constitutes "a serious threat of substantial harm" or "a substantial danger of bodily harm" to others is, we think, a distinction of no significance to the resolution of defendant's challenge to the permitted scope of expert testimony.

An earlier amendment to section 6316.2 substituted "disease, defect or disorder" for "disorder" in subdivision (a)(2) (Stats.1978, ch. 1036, s 1; Stats.1978, ch. 1039, s 2).

Each of the People's experts testified in detail that defendant met the statutory criteria ****25** for extended commitment. Their conclusions were based on somewhat different theories.

Dr. Wilcox, a psychiatrist with 12 years of experience, diagnosed defendant as having a character disorder of a nonspecific nature. He ruled out pedophilia. Dr. Wilcox believed that because defendant had not developed sufficient psychological insight, he remained predisposed to the commission of sexual offenses and constitutes a serious threat of substantial harm to others.

Dr. Bennett, a psychiatrist with 25 years of experience, ascribed to defendant the specific character disorders of aggressive sexuality and male pedophilia. Dr. Bennett based his diagnosis on defendant's history including the commitment offense, obscene telephone calls, and reported sexual fantasies. Because of the seriousness of the commitment offense and the lack of perceived change in defendant's pattern of rule-breaking and aggressiveness, Dr. Bennett believed defendant predisposed to the commission of sexual offenses to the extent he constituted a serious threat of substantial harm to others.

***483** Dr. Bitter, a psychologist, diagnosed defendant as a sociopath, a psychopathic character disorder manifested in impulsive behavior and lying. Based on the nature of the commitment offense, defendant's history and reported sexual fantasies, including a preoccupation with sexual dominance, Dr. Bitter also believed defendant predisposed to the commission of sexual offenses and a serious threat to do substantial harm to others.

Dr. Whippel, a psychiatrist with 16 years of experience, testified for the defense that in his opinion the commitment offense and defendant's past history provided an insufficient basis to establish defendant's predisposition to commit a sexual offense such that he would present a serious threat of substantial harm to others.

[3] Prior to the testimony of each of the People's expert witnesses, defendant challenged their qualifications to render an opinion whether defendant constituted a serious threat of substantial harm to the health and safety of others. After hearing, the court denied each such challenge and ruled each witness qualified to render an opinion on the subject.

At trial, defendant conceded the qualifications of the experts to render their opinions on his mental state. He reiterates that concession here. Defendant contends, however, that psychiatric opinions to the effect that he presents a threat of substantial harm to the health and safety of others were erroneously admitted because such testimony does not meet the minimal standards for admissibility, i. e., proven reliability and general acceptance in the relevant, professional community of the clinical method of examination as a mode for extrapolating predictions of future behavior. Defendant contests the qualifications of psychiatrists, psychologists and other mental health professionals to render expert opinions on such questions, arguing that the state of the art is not sufficiently advanced to enable such professionals to make "predictive judgments" about a person's future behavior with sufficient reliability to be accepted as evidence.

By framing the question in this way, defendant seeks to foreordain the answer. Indeed, if the lack of confidence within the psychiatric community concerning the capacity of its practitioners to predict future behavior is as general

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as defendant contends, the question as posed by defendant assumes the rhetorical form.[4]

[4] The following articles were cited by defendant to the trial court to indicate the extent of psychiatric skepticism concerning the predictive powers of mental health professionals: Diamond, The Psychiatric Prediction of Dangerousness (1975) 123 U.Pa.L.Rev. 439; Ennis & Litwack, Psychiatry and the Presumption of Expertise: Flipping Coins in the Courtroom (1974) 62 Cal.L.Rev. 693; Hunt & Wiley, Operation Baxstrom After One Year (1968) 124 Am.J.Psych. 974; Rappeport, Lassen & Gruenwald, Evaluation and Follow-up of State Hospital Patients Who Had Sanity Hearings (1962) 118 Am.J.Psych. 1078; Steadman, Follow-Up on Baxstrom Patients Returned to Hospitals for the Criminally Insane (1973) 130 Am.J.Psych. 317; Steadman & Keveles, The Community Adjustment and Criminal Activity of the Baxstrom Patients: 1966-1970 (1972) 129 Am.J.Psych. 304; Task Force Report, Clinical Aspects of the Violent Individual (Am.Psych.Assn., 1974) p. 25; Wenk, Robison & Smith, Can Violence Be Predicted? (1972) 18 Crime & Del. 393.

***484 **26** It is obvious that an opinion that an individual poses a serious threat of substantial harm to others constitutes at least in part a prediction as to that person's future conduct. But in the context of MDSO proceedings, such an opinion also includes a significant contemporary component. It speaks as well to the present proclivities of the individual; it says that he is at this moment fully capable of conduct dangerous to the health and safety of others, and that the acting out of these aggressive propensities can be anticipated upon the unfortunate convergence of stimulus and opportunity. Thus whether the predictive component of the expert's opinion is ever validated by future events will likely depend on circumstances beyond the control of the actor. However, the very real statistical possibility that the prediction may never be fulfilled does not detract from the validity of the expert's opinion as to the present threat of substantial harm posed by the defendant.

In its present dimension, the expert's opinion is merely one way of characterizing defendant's existing mental condition, a subject relevant to these proceedings in which the expert is called upon to examine for and diagnose mental disorders which predispose to the commission of sexual offenses. Courts of this state have long recognized that a psychiatric expert's appraisal of an individual's dangerousness (serious threat to do substantial harm) is directly related to the expert's evaluation of that person's existing mental state. (People v. Hines (1967) 66 Cal.2d 348, 355, 57 Cal.Rptr. 757, 425 P.2d 557; People v. Hines (1964) 61 Cal.2d 164, 173, 37 Cal.Rptr. 622, 390 P.2d 398; People v. Bickley (1962) 57 Cal.2d 788, 793, 22 Cal.Rptr. 340, 372 P.2d 100.) As we have noted, defendant concedes the competence of the People's experts to testify to their opinion of defendant's present mental state.

[4] [5] Recently the United States Supreme Court has pointed out that "Whether the individual is mentally ill and dangerous to either himself or others . . . turns on the meaning of the facts which must be interpreted ***485** by expert psychiatrists and psychologists." (Emphasis added; Addington v. Texas (1979) 441 U.S. 418, 429, 99 S.Ct. 1804, 1811, 60 L.Ed.2d 323, 333.) "Psychiatric diagnosis . . . is to a large extent based on medical 'impressions' drawn from subjective analysis and filtered through the experience of the diagnostician." (Ibid.) "The subtleties and nuances of psychiatric diagnosis render certainties virtually beyond reach in most situations." (Ibid.) Even so, an estimate of an individual's dangerousness is a proper subject for expert psychiatric evaluation and testimony and must be considered by the finder of fact. (Ibid.) The mere fact that lay persons may be able rationally to draw the same inferences as to dangerousness from the same facts without the assistance of expert testimony does not deprive that testimony of all value where it is nonetheless "relatively illuminating" (Ballard v. Superior Court (1966) 64 Cal.2d 159, 174-175, 49 Cal.Rptr. 302, 410 P.2d 838). At least that much may be said for the predictive judgment of a mental health professional whose opinion of an individual's dangerous propensities is a "judgment which doctors and professionals must regularly render under accepted rules of responsibility." (Tarasoff v. Regents of University of California (1976) 17 Cal.3d 425, 438, 131 Cal.Rptr. 14, 25, 551 P.2d 334, 345.)

In proceedings under the MDSO statute, the court is required "with the assistance of psychiatrists" to identify those who come within the reach of the statute. (People v. Allen (1973) 29 Cal.App.3d 932, 935, 106 Cal.Rptr. 43; In re Perkins (1958) 165 Cal.App.2d 73, 78, 331 P.2d 712.) In proceedings under section 6316.2, the court is required to appoint the necessary psychologists or psychiatrists "in accordance with this article . . . ." (s 6316.2, subd. (e).) Section 6307 provides that the court shall appoint "not less than two nor more than ****27** three certified clinical psychologists . . . or psychiatrists . . . to make a personal examination of the alleged mentally disordered sex offender, directed toward ascertaining whether the person is a mentally disordered sex offender " (emphasis added). What then is the precise scope of the expert's inquiry under section 6307? The answer is provided in section 6300: ". . . 'mentally disordered sex

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offender' means any person who by reason of mental defect, disease, or disorder, is predisposed to the commission of sexual offenses to such a degree that he is dangerous to the health and safety of others." (Emphasis added.)

[6] Thus appointed psychological and psychiatric experts have long been required by statute in original MDSO commitment proceedings to bring to bear on the question of an individual's future conduct, i. e., his dangerousness, ***486** their admittedly imprecise diagnostic techniques. Viewed in this perspective, the techniques employed by the experts herein are neither new nor experimental (cf. People v. Kelly (1976) 17 Cal.3d 24, 130 Cal.Rptr. 144, 549 P.2d 1240). Although admittedly those techniques do not produce certainty, the significance of this failure to meet an ideal of perfection is a consideration for the trier of fact in weighing the effect of the testimony. (Schnear v. Boldrey (1971) 22 Cal.App.3d 478, 484, 99 Cal.Rptr. 404; People v. Stuller (1970) 10 Cal.App.3d 582, 597, 89 Cal.Rptr. 158; People v. Brekke (1967) 250 Cal.App.2d 651, 661-662, 58 Cal.Rptr. 854.)

The People's experts all acknowledged that there is disagreement within the psychiatric profession concerning the predictive ability of its practitioners. However, they all implicitly share the opinion that, given certain facts, predictions of future dangerousness may rationally be projected, and that the drawing of such inferences is properly within the expertise of qualified mental health professionals.

[7] [8] The qualification of an expert is a matter addressed to the sound discretion of the trial judge whose determination will be upheld unless a clear abuse of discretion is shown (Evans v. Ohanesian (1974) 39 Cal.App.3d 121, 127, 112 Cal.Rptr. 236). The trial court acted within its discretion in admitting expert testimony that defendant constituted a substantial threat of harm to the health and safety of others.

II.

Constitutional Challenges to Section 6316.2

A. Ex Post Facto Issue.

[9] Defendant argues that section 6316.2 as applied to him is an ex post facto law, prohibited by both the federal and state Constitutions. U.S.Const. art. I, s 9, cl. 3; Cal.Const. art. I, s 9.) We disagree.

At the time of defendant's offense in 1975 and his MDSO commitment in January 1976, a violation of Penal Code section 273a, subdivision (1), was punishable by a maximum term of 10 years in prison (Stats.1965, ch. 697, s 1). However, under section 6316, defendant's MDSO commitment was of indefinite duration, up to life. (Stats.1971, ch. 1593, s 418.) Effective and operative January 1, 1977, section 6316 was amended to provide an indeterminate term of confinement ***487** under an MDSO commitment not to exceed, however, the aggregate maximum term of imprisonment which a defendant could receive if sentenced for the commitment offense. (Stats.1976, ch. 1101, s 9.) This amendment reduced defendant's maximum term of confinement as an MDSO from life to 10 years in conformance with the maximum term provided for violation of Penal Code section 273a, subdivision (1), at the time of defendant's offense and MDSO commitment.

In 1976, the Legislature enacted the Uniform Determinate Sentencing Law (DSL) which reduced the maximum penalty for violation of Penal Code section 273a, subdivision (1), to three years in state prison. (Stats.1976, ch. 1139, ss 165, 273.) While the DSL was enacted in 1976, and became effective on January 1, 1977, it expressly did not become operative until July 1, 1977. (Stats.1976, ch. 1139, s 351.5.)

Shortly after the passage of the DSL, the Legislature added ****28** Welfare and Institutions Code section 6316.2 to provide a procedure to extend the maximum term of confinement for certain MDSO's; section 6316.2 was effective June 29, 1977, and operative on July 1, 1977, the same date as the DSL. (Stats.1977, ch. 164, ss 3, 6, 7; Stats.1976, ch. 1139, s 351.5.)

Because defendant was incarcerated as an MDSO during the period from January 1, 1977, until July 1, 1977, he argues that the application of the extended commitment provision of section 6316.2, which was effective and operative subsequent to the January 1, 1977, effective date of the DSL, would constitute an ex post facto punishment. He claims that for ex post facto purposes he obtained a "vested interest" in the maximum three-year term fixed by the DSL as of its effective date rather than its operative date and cites as authority Rose v. Board of Retirement (1949) 92 Cal.App.2d 188, 193, 206 P.2d 903.

Defendant's reliance on Ross is misplaced. The Ross court was concerned with the limited question of whether an individual attained a vested interest in retirement privileges as of the effective date of a local ordinance,

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rather than at the time of its operative date. In order to give effect to the manifest legislative intent, the court held that the effective date of the ordinance controlled (see People v. Hinojosa (1980) 103 Cal.App.3d 57, 62, 162 Cal.Rptr. 793). By contrast, we confront here statewide legislation which, in an abrupt break with time-honored practice, discards the hoary indeterminate sentencing law (ISL) and replaces it with a comprehensive system of determinate sentencing. Orderly ***488** transition required the Legislature to enact and render operative at one time all the components of the DSL and the many related changes required thereby. It was obviously necessary therefore to make the passage of certain provisions contingent on the passage of other interrelated provisions. (E. g., Stats.1976, ch. 1139, s 349.5.)

Under the California Constitution, a statute enacted at a regular session of the Legislature generally becomes effective on January 1 of the year following its enactment except where the statute is passed as an urgency measure and becomes effective sooner. (Cal.Const., art. IV, s 8, cl. (c)(1).) In the usual situation, the "effective" and "operative" dates are one and the same, and with regard to ex post facto restrictions, a statute has no force and effect until such effective-operative date. (DeWoody v. Superior Court (1970) 8 Cal.App.3d 52, 56, 87 Cal.Rptr. 210.) Yet, as here, the Legislature may deem it necessary to postpone the operation of certain statutes until a later time. (See 26 Ops.Cal.Atty.Gen. 141, 143 (1955).) Just as the Legislature may provide for an operative date subsequent to an effective date of a statute to allow persons affected to become acquainted with and implement its provisions (see op. cit. supra, at p. 144; 2 Sutherland, Statutory Construction (rev. 3d ed. 1973) s 33.07, p. 12), the Legislature may also wish to postpone the operative date to provide time for emergency clean-up amendments and the passage of interrelated legislation.

Thus, in the context of the comprehensive determinate-sentence legislation involving extensive statutory revision, where the Legislature specifically provides for uniform postponement in the operative date of the entire legislative scheme, we do not think the Legislature intended that a criminal defendant would accrue a vested interest in the application of only a small part of the whole on its effective date. (People v. Hinojosa, supra, 103 Cal.App.3d at pp. 65, 66, 162 Cal.Rptr. 793.)[5] An enactment is a law on its effective date only in the sense that it cannot be changed except by legislative process; the rights of individuals under its provisions are not substantially affected until the provision operates as law.

[5] Retroactive application of a punishment-mitigating statute is not a question of constitutional right but of legislative intent. (In re Estrada (1965) 63 Cal.2d 740, 744, 48 Cal.Rptr. 172, 408 P.2d 948.)

[10] "(A)n ex post facto law is ' "one which, in its operation, makes that criminal or penal which was not so at the time the ****29** action was performed; or which increases the punishment; or, in short, which, in ***489** relation to the offense or its consequences, alters the situation of a party to his disadvantage." ' " (People v. Benefield (1977) 67 Cal.App.3d 51, 58, 136 Cal.Rptr. 465, 468, quoting Thompson v. Missouri (1898) 171 U.S. 380, 383, 18 S.Ct. 922, 923, 43 L.Ed. 204, 206.) Since defendant could not have acquired a vested right in the ameliorative provisions of the DSL prior to its operative date (see In re Harper (1979) 96 Cal.App.3d 138, 139-140, 157 Cal.Rptr. 759; In re Bray (1979) 97 Cal.App.3d 506, 510, 516, 158 Cal.Rptr. 745), the application to him of section 6316.2, operative at the same time as the DSL, could not constitute an ex post facto penalty.

B. Equal Protection Issue.

[11] Defendant contends that section 6316.2, by singling out for extended commitment what he calls "amenable MDSO's" creates an unconstitutional classification in violation of equal protection of the laws guaranteed by both the federal and state Constitutions.

To the contrary, the California Supreme Court has recently indicated that MDSO's may be subjected to a period of extended commitment once the maximum term of punishment has expired without violating equal protection of the laws if the People establish that the person committed remains a danger to the health and safety of himself or others. (In re Moye (1978) 22 Cal.3d 457, 467, 149 Cal.Rptr. 491, 584 P.2d 1097.)

[12] Commitment of MDSO's to a state hospital is for the purposes of treatment not punishment. (22 Cal.3d at p. 466, 149 Cal.Rptr. 491, 584 P.2d 1097; s 6316.2, subd. (i).) Implicit in the MDSO statutory scheme is the legislative finding that certain MDSO's shall be committed to a state mental health facility because of their mental status, i. e., because they are in need of and will benefit by the special treatment afforded there. This difference in mental condition between the classes of ordinary offenders, "non-treatable" MDSO's and "treatable" MDSO's is an adequate constitutional ground for the difference in the terms of commitment of the classes, applying the requisite "compelling interest"

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standard since personal liberty is at stake. (People v. Superior Court (Rigg) (1978) 80 Cal.App.3d 407, 414, 145 Cal.Rptr. 711; see also In re Moye, supra, 22 Cal.3d at pp. 462, 465, 149 Cal.Rptr. 491, 584 P.2d 1097; In re Franklin (1972) 7 Cal.3d 126, 146, 101 Cal.Rptr. 553, 496 P.2d 465; cf. People v. Saffell (1979) 25 Cal.3d 223, 157 Cal.Rptr. 897, 599 P.2d 92.)

***490** C. Due Process of Law Issue.

[13] Defendant contends that section 6316.2 violates due process of law because the standards for release from commitment as set forth in other statutes (ss 6325, 6325.1, 6327) are more "difficult" to meet than the standards for commitment in section 6316.2.[6]

[6] The standards for commitment are set forth and discussed in part I, ante. The standards for release from commitment are that the person will not benefit from further care and treatment and that he is no longer a danger to the health and safety of others. (ss 6325, 6325.1, 6327.)

Defendant argues that in order for any civil commitment statute to "pass constitutional muster," the standards for release must "equate with the absence of the requirements for commitment." Otherwise, he argues, a person "might" remain involuntarily confined in a mental institution after he has improved to the point where he could not be committed. We reject this contention and its supporting arguments.

Defendant relies upon the case of O'Connor v. Donaldson (1975) 422 U.S. 563, 95 S.Ct. 2486, 45 L.Ed.2d 396, which held that Florida cannot constitutionally confine in a mental hospital a nondangerous individual who is capable of surviving safely in freedom by himself or with the help of willing and responsible family members or friends. In so holding, the court stated that "The fact that state law may have authorized confinement of the harmless mentally ill ****30** does not itself establish a constitutionally adequate purpose for the confinement. (Citations.) Nor is it enough that Donaldson's original confinement was founded upon a constitutionally adequate basis, if in fact it was, because even if his involuntary confinement was initially permissible, it could not constitutionally continue after that basis no longer existed." (422 U.S. at pp. 574-575, 95 S.Ct. at pp. 2493, 45 L.Ed.2d at p. 406.

O'Connor was a civil suit for money damages against the superintendent of a state hospital who, in reliance on a state law, had allegedly held a mental patient in a hospital for nearly 15 years when the patient was dangerous to no one. The case did not involve statutes of the nature with which we are here concerned. As pointed out by the Supreme Court, the Florida commitment statutes provided "no judicial procedure whereby one still incompetent could secure his release on the ground that he was no longer dangerous to himself or others." (Emphasis added; 422 U.S. at pp. 566-567, fn. 2, 95 S.Ct. at pp. 2489, fn. 2, 45 L.Ed.2d at pp. 401-402, fn. 2.)

[14] ***491** The O'Connor opinion has no applicability to the California statutory pattern. (Cf. Suzuki v. Quisenberry (D.Haw.1976) 411 F.Supp. 1113.) The California statutes provide a comprehensive scheme for the release of MDSO's under appropriate circumstances. (ss 6325, 6325.1, 6327.) The statutes incorporate all the fundamental aspects of fair play by providing the MDSO with abundant safeguards and means for continuous review of his mental state. The statutes may logically be interpreted to require the patient's discharge when the basis for the original commitment no longer exists. (See People v. Youngs (1972) 23 Cal.App.3d 180, 183-184, 99 Cal.Rptr. 901; Suzuki v. Quisenberry, supra, 411 F.Supp. at p. 1134.) We note, finally, that an MDSO who claims he no longer fits the commitment criteria is entitled to judicial relief via a writ of habeas corpus. (See In re Gary W. (1971) 5 Cal.3d 296, 303, 96 Cal.Rptr. 1, 486 P.2d 1201.)

[15] Defendant also contends that section 6316.2 is in violation of due process of law since it does not require proof that he committed a recent overt act indicating that he presents a serious threat of substantial harm to the health and safety of others. This contention is based on federal district court decisions which have used language indicating under various circumstances that in order constitutionally to confine a person because he might in the future be dangerous, it must be shown he has actually been dangerous in the "recent" past. (See, e. g., Lynch v. Baxley (N.D.Ala.1974) 386 F.Supp. 378, 391; Lessard v. Schmidt (E.D.Wis.1972) 349 F.Supp. 1078, 1093; Bell v. Wayne County General Hospital at Eloise (S.D.Mich.1974) 384 F.Supp. 1085, 1096.) These cases do not require, as a matter of constitutional law, that the statute specifically provide for "recent" acts; the evidence is the significant thing.

In the instant case in 1975 defendant committed the offense of which he was convicted. Testimony indicated defendant committed acts of verbal and physical aggression thereafter at Atascadero. Conceding, arguendo, the constitutional requirement of a "recent" overt act, the evidence is present in this case.

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[16] Defendant contends section 6316.2 violates due process of law in that it is "vague" and therefore void. He argues that to make the findings required by the section, the court must interpret and apply the terms "mental disorder," "predisposed," and "serious threat of substantial harm," all of which, according to defendant, are terms so vague that men of common intelligence must necessarily guess at their meaning ***492** and differ as to their application. This being so, defendant argues, it follows the statute is unconstitutional. (See Lanzetta v. New Jersey (1939) 306 U.S. 451, 453, 59 S.Ct. 618, 619, 83 L.Ed. 888, 890; In re Newbern (1960) 53 Cal.2d 786, 792, 3 Cal.Rptr. 364, 350 P.2d 116.)

As a general principle of law the definition of vagueness enunciated by the cases cited by defendant is sound. However, applied to the statute here in question, the ****31** principle does not call for invalidating this legislative enactment. Indeed, the principle recently was invoked unsuccessfully to challenge another portion of the MDSO statute. In the case of People v. Kirk (1975) 49 Cal.App.3d 765, 122 Cal.Rptr. 653, it was asserted the use of the word "dangerous" in the definition of an MDSO in section 6300 was unconstitutionally ambiguous and vague. The court, applying Lanzetta and Newbern, held such words were subject to dictionary definition and that as used in MDSO cases, juries (or judges) will have to be convinced on a case-to-case basis that a person "does pose a danger to the health and safety of others." (People v. Kirk, supra, 49 Cal.App.3d at p. 771, 122 Cal.Rptr. at p. 657). We apply the reasoning of the Kirk case to the phrases here challenged and hold that those terms can be understood by reference to "demonstrably established technical or common law meaning," and thus may be comprehended by men of ordinary intelligence. (Id., at p. 769, 122 Cal.Rptr. at p. 655.)

III.

Commitment as an MDSO requires antecedent conviction of a "sex offense." Sex offenses within the statute include any crime "committed primarily for purposes of sexual arousal or gratification." (s 6302, subd. (a).) At issue in the commitment extension proceedings was the question whether the offense for which defendant was convicted, child beating (Pen.Code, s 273a, subd. (1)), was committed primarily for the purposes of sexual arousal or gratification.

Defendant contends that the court erred in refusing to read to the jury his proffered instruction which stated, "such purposes (refer) to the defendant's princip(al) or primary conscious intent at the time the crime was committed." Defendant claims that the instruction defining "purpose" as "conscious intent" was important since the expert witnesses who testified often ascribed subconscious motivation to defendant's actions. Defendant concedes, however, that the usual, ordinary, and common import of the term "purpose" is conscious intent.

[17] [18] ***493** It is axiomatic that a court need not instruct a jury on terms which are well understood by all persons of average intelligence. (People v. Burke (1962) 208 Cal.App.2d 149, 164, 24 Cal.Rptr. 912.) Furthermore, the trial court properly instructed the jury on the statutory requirement and definition of a "sex offense" and the necessity that it find defendant had the required mental state at the time of the beating in order for the offense to constitute a sex offense under section 6302. There was no instructional error.

IV.

[19] During jury selection, a prospective juror was excused for cause after she revealed that the victim had been her client in psychotherapy "this year." The trial court denied defendant's motion to dismiss the entire panel of prospective jurors. It was within the sound discretion of the court to conclude the prospective juror's statement was nonprejudicial and to refuse to dismiss the entire jury panel. (People v. Vernon (1978) 89 Cal.App.3d 853, 865, 152 Cal.Rptr. 765.)

The judgment is affirmed.

EVANS, J., concur.

BLEASE, Associate Justice, concurring.

I concur in the result.

The majority opinion labors to resolve issues concerning provisions of a statute not now in effect. Its precedential value must be discounted by its inapplicability to the legislation which now governs.

The opinion interprets criteria for extended commitment which have been significantly amended by legislation effective January 1, 1980. The opinion also rejects constitutional challenges to the MDSO statute on the basis

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of a standard of amenability for treatment which the Legislature intended to reject by the same legislation. In this posture the case lacks not only the concreteness of facts considered in the light of operative legislation, but also the " 'reasonable probability that the same questions **32 will again be litigated and appealed, . . .' " (6 Witkin, Cal. Procedure (2d ed. 1971) Appeal, s 470, p. 4427, citing to People v. West Coast Shows (1970) 10 Cal.App.3d 462, 468, 89 Cal.Rptr. 290.)

The opinion interprets and considers the constitutionality of Welfare and Institutions Code section 6316.2, as added by Statutes 1977, chapter *494 164, section 3. The section, subsequently amended by Statutes 1978, chapter 1039, section 2, was to have expired by its own terms on January 1, 1980. On September 22, 1979, the Legislature enacted two measures amending section 6316.2: Assembly Bill 1332 (A.B. 1332) and Senate Bill 898 (S.B. 898). The measures are contained in chapters 991 and 992 of the statutes of 1979.

Both chapters contain revisions of section 6316.2 intended to take effect on January 1, 1980. They are double-joined, a legislative device to order the priority of conflicting enactments. (In re Thierry S. (1977) 19 Cal.3d 727, 739-740, 139 Cal.Rptr. 708, 566 P.2d 610.) However, a flaw in the double-joining procedure leaves unresolved the issue of priority.[1] The issue of priority may affect the constitutionality of the MDSO law, as shown below. It does not affect the amended criteria for extended commitment since both chapters contain identical amendments. The amendments provide:

[1] The flaw in the double-joining procedure arises from its attempted application to chapters having different operative dates. The double-joining procedure is designed to provide a method of choosing which of two measures is to be operative if both "go into effect on the same day . . . ." (Emphasis added.) (Note, Statutory Construction: Conflicting Acts Passed at the Same Session: Higher Chapter Number Prevails (1956) 3 UCLA L.Rev. 417; and see Gov. Code, s 9605; In re Thierry S. (1977) 19 Cal.3d 727, 739-740, 139 Cal.Rptr. 708, 566 P.2d 610.) However, if it is applied, as here, to chapters, one of which has an urgency clause (and takes immediate effect) and the other does not (and takes effect by law on January 1 following its enactment) the premise upon which double-joining is based is destroyed and confusion engendered. That is what happened to chapters 991 and 992.

The measures were double-joined such that section 2 of the bill given the higher chapter number was to be given effect on January 1, 1980. The sections numbered as 2 in each measure are identical. However, S.B. 898, given the higher chapter number (992) actually took effect on the date of its enactment, September 22, 1979, because of an urgency clause. That is, the higher numbered chapter took effect before the lower numbered chapter. Since chapter 992 had an urgency clause, it took effect before chapter 991, making the later effective chapter 991 supersede chapter 992. But the double-joining clause of A.B. 1332 directed that its section 2 take effect only if A.B. 1332 were given a higher chapter number. That not being the case, only section 1 of A.B. 1332 (chapter 991) remains operative on January 1, 1980. A contingency note to chapter 991 in No. 5 Deering's Advance Legislative Service, page 1026, concludes that section 1 of A.B. 1332 (i. e., chapter 991) is operative.

However, the legislative intent seems clear that section 2 of either measure take effect (they are identical) despite the linguistic flaw. To square this with the urgency clause would require that section 2 of chapter 991 take effect.

"(a) A person may be committed beyond the term prescribed by section 6316.1 . . . only if such person meets all of the following:

". . .

*495 "(2) Suffers from a mental disease, defect, or disorder and as a result of such mental disease, defect, or disorder, is predisposed to the commission of sexual offenses to such a degree that he or she presents a substantial danger of bodily harm to others." (Welf. & Inst. Code, s 6316.2, subd. (a).)

It is apparent that amended section 6316.2 makes the predictive (or causal) link between mental disorder and effect much stronger than in the statute before this court by substituting "danger" for "threat" and "bodily" harm for "health and safety." These amendments, affecting "the most basic personal liberty interest" (People v. Saffell (1979) 25 Cal.3d 223, 228, 157 Cal.Rptr. 897, 900, 599 P.2d 92, 94), require the closest judicial scrutiny, a task not accomplished by the majority opinion's offhand assertions that the legislative changes are of "no significance . . . to the permitted scope of expert testimony" (majority opn., ante, fn. 3), a position which renders without meaning the Legislature's change in language.

**33 The majority opinion also upholds the constitutionality of the MDSO statute on the basis inter alia that "the difference in mental condition between ordinary offender, 'non-treatable' MDSO's and 'treatable' " MDSO's is an adequate constitutional ground for the difference in the commitment of the classes. (Majority opn., ante, p. 29.)

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But if section 2 of chapter 991 is operative, as the Legislature intended (see ante, fn. 1), "(a)menability to treatment is not required for a finding" justifying an extended commitment of an MDSO beyond that served by an ordinary offender for the same offense. The removal of the amenability requirement renders the MDSO statute of doubtful constitutionality. (People v. Compelleebee (1979) 99 Cal.App.3d 296, 160 Cal.Rptr. 233; People v. Lakey (1980) 102 Cal.App.3d 962, 970-972, 162 Cal.Rptr. 653; People v. Feagley (1975) 14 Cal.3d 338, 121 Cal.Rptr. 509, 535 P.2d 373.)

Hearing denied: MOSK and NEWMAN, JJ., dissenting.

All Citations

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KeyCite Yellow Flag - Negative Treatment
Unconstitutional or PreemptedPrior Version Held Invalid Natural Resources Defense Council v. U.S. E.P.A., 9th Cir., May 23, 2008

40 C.F.R. § 122.26

§ 122.26 Storm water discharges (applicable to State NPDES programs, see § 123.25).

Effective: December 21, 2015

Currentness

<For statute(s) affecting validity, see: The Clean Water Act, 33 USCA § 1251 et seq.>

(a) Permit requirement.

(1) Prior to October 1, 1994, discharges composed entirely of storm water shall not be required to obtain a NPDES permit except:

(i) A discharge with respect to which a permit has been issued prior to February 4, 1987;

(ii) A discharge associated with industrial activity (see § 122.26(a)(4));

(iii) A discharge from a large municipal separate storm sewer system;

(iv) A discharge from a medium municipal separate storm sewer system;

(v) A discharge which the Director, or in States with approved NPDES programs, either the Director or the EPA Regional Administrator, determines to contribute to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States. This designation may include a discharge from any conveyance or system of conveyances used for collecting and conveying storm water runoff or a system of discharges from municipal separate

storm sewers, except for those discharges from conveyances which do not require a permit under paragraph (a)(2) of this section or agricultural storm water runoff which is exempted from the definition of point source at § 122.2.

The Director may designate discharges from municipal separate storm sewers on a system-wide or jurisdiction-wide basis. In making this determination the Director may consider the following factors:

(A) The location of the discharge with respect to waters of the United States as defined at 40 CFR 122.2.

(B) The size of the discharge;

(C) The quantity and nature of the pollutants discharged to waters of the United States; and

(D) Other relevant factors.

(2) The Director may not require a permit for discharges of storm water runoff from the following:

(i) Mining operations composed entirely of flows which are from conveyances or systems of conveyances (including but not limited to pipes, conduits, ditches, and channels) used for collecting and conveying precipitation runoff and which are not contaminated by contact with or that have not come into contact with, any overburden, raw material, intermediate products, finished product, byproduct, or waste products located on the site of such operations, except in accordance with paragraph (c)(1)(iv) of this section.

(ii) All field activities or operations associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities, including activities necessary to prepare a site for drilling and for the movement and placement of drilling equipment, whether or not such field activities or operations may be considered to be construction activities, except in accordance with paragraph (c)(1)(iii) of this section. Discharges of sediment from construction activities associated with oil and gas exploration, production, processing, or treatment operations or transmission facilities are not subject to the provisions of paragraph (c)(1)(iii)(C) of this section.

Note to paragraph (a)(2)(ii): EPA encourages operators of oil and gas field activities or operations to implement and maintain Best Management Practices (BMPs) to minimize discharges of pollutants, including sediment, in storm water both during and after construction activities to help ensure protection of surface water quality during storm events. Appropriate controls would be those suitable to the site conditions and consistent with generally accepted engineering design criteria and manufacturer specifications. Selection of BMPs could also be affected by seasonal or climate conditions.

(3) Large and medium municipal separate storm sewer systems.

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(i) Permits must be obtained for all discharges from large and medium municipal separate storm sewer systems.

(ii) The Director may either issue one system-wide permit covering all discharges from municipal separate storm sewers within a large or medium municipal storm sewer system or issue distinct permits for appropriate categories of discharges within a large or medium municipal separate storm sewer system including, but not limited to: all discharges owned or operated by the same municipality; located within the same jurisdiction; all discharges within a system that discharge to the same watershed; discharges within a system that are similar in nature; or for individual discharges from municipal separate storm sewers within the system.

(iii) The operator of a discharge from a municipal separate storm sewer which is part of a large or medium municipal separate storm sewer system must either:

(A) Participate in a permit application (to be a permittee or a co-permittee) with one or more other operators of discharges from the large or medium municipal storm sewer system which covers all, or a portion of all, discharges from the municipal separate storm sewer system;

(B) Submit a distinct permit application which only covers discharges from the municipal separate storm sewers for which the operator is responsible; or

(C) A regional authority may be responsible for submitting a permit application under the following guidelines:

(1) The regional authority together with co-applicants shall have authority over a storm water management program that is in existence, or shall be in existence at the time part 1 of the application is due;

(2) The permit applicant or co-applicants shall establish their ability to make a timely submission of part 1 and part 2 of the municipal application;

(3) Each of the operators of municipal separate storm sewers within the systems described in paragraphs (b)(4)(i), (ii), and (iii) or (b)(7)(i), (ii), and (iii) of this section, that are under the purview of the designated regional authority, shall comply with the application requirements of paragraph (d) of this section.

(iv) One permit application may be submitted for all or a portion of all municipal separate storm sewers within adjacent or interconnected large or medium municipal separate storm sewer systems. The Director may issue one system-wide permit covering all, or a portion of all municipal separate storm sewers in adjacent or interconnected large or medium municipal separate storm sewer systems.

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(v) Permits for all or a portion of all discharges from large or medium municipal separate storm sewer systems that are issued on a system-wide, jurisdiction-wide, watershed or other basis may specify different conditions relating to different discharges covered by the permit, including different management programs for different drainage areas which contribute storm water to the system.

(vi) Co-permittees need only comply with permit conditions relating to discharges from the municipal separate storm sewers for which they are operators.

(4) Discharges through large and medium municipal separate storm sewer systems. In addition to meeting the requirements of paragraph (c) of this section, an operator of a storm water discharge associated with industrial activity which discharges through a large or medium municipal separate storm sewer system shall submit, to the operator of the municipal separate storm sewer system receiving the discharge no later than May 15, 1991, or 180 days prior to commencing such discharge: the name of the facility; a contact person and phone number; the location of the discharge; a description, including Standard Industrial Classification, which best reflects the principal products or services provided by each facility; and any existing NPDES permit number.

(5) Other municipal separate storm sewers. The Director may issue permits for municipal separate storm sewers that are designated under paragraph (a)(1)(v) of this section on a system-wide basis, jurisdiction-wide basis, watershed basis or other appropriate basis, or may issue permits for individual discharges.

(6) Non-municipal separate storm sewers. For storm water discharges associated with industrial activity from point sources which discharge through a non-municipal or non-publicly owned separate storm sewer system, the Director, in his discretion, may issue: a single NPDES permit, with each discharger a co-permittee to a permit issued to the operator of the portion of the system that discharges into waters of the United States; or, individual permits to each discharger of storm water associated with industrial activity through the non-municipal conveyance system.

(i) All storm water discharges associated with industrial activity that discharge through a storm water discharge system that is not a municipal separate storm sewer must be covered by an individual permit, or a permit issued to the operator of the portion of the system that discharges to waters of the United States, with each discharger to the non-municipal conveyance a co-permittee to that permit.

(ii) Where there is more than one operator of a single system of such conveyances, all operators of storm water discharges associated with industrial activity must submit applications.

(iii) Any permit covering more than one operator shall identify the effluent limitations, or other permit conditions, if any, that apply to each operator.

(7) Combined sewer systems. Conveyances that discharge storm water runoff combined with municipal sewage are point sources that must obtain NPDES permits in accordance with the procedures of § 122.21 and are not subject to the provisions of this section.

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(8) Whether a discharge from a municipal separate storm sewer is or is not subject to regulation under this section shall have no bearing on whether the owner or operator of the discharge is eligible for funding under title II, title III or title VI of the Clean Water Act. See 40 CFR part 35, subpart I, appendix A(b)H.2.j.

(9)(i) On and after October 1, 1994, for discharges composed entirely of storm water, that are not required by paragraph (a)(1) of this section to obtain a permit, operators shall be required to obtain a NPDES permit only if:

(A) The discharge is from a small MS4 required to be regulated pursuant to § 122.32;

(B) The discharge is a storm water discharge associated with small construction activity pursuant to paragraph (b)(15) of this section;

(C) The Director, or in States with approved NPDES programs either the Director or the EPA Regional Administrator, determines that storm water controls are needed for the discharge based on wasteload allocations that are part of "total maximum daily loads" (TMDLs) that address the pollutant(s) of concern; or

(D) The Director, or in States with approved NPDES programs either the Director or the EPA Regional Administrator, determines that the discharge, or category of discharges within a geographic area, contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.

(ii) Operators of small MS4s designated pursuant to paragraphs (a)(9)(i)(A), (a)(9)(i)(C), and (a)(9)(i)(D) of this section shall seek coverage under an NPDES permit in accordance with §§ 122.33 through 122.35. Operators of non-municipal sources designated pursuant to paragraphs (a)(9)(i)(B), (a)(9)(i)(C), and (a)(9)(i)(D) of this section shall seek coverage under an NPDES permit in accordance with paragraph (c)(1) of this section.

(iii) Operators of storm water discharges designated pursuant to paragraphs (a)(9)(i)(C) and (a)(9)(i)(D) of this section shall apply to the Director for a permit within 180 days of receipt of notice, unless permission for a later date is granted by the Director (see § 124.52(c) of this chapter).

(b) Definitions.

(1) Co-permittee means a permittee to a NPDES permit that is only responsible for permit conditions relating to the discharge for which it is operator.

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(2) Illicit discharge means any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit (other than the NPDES permit for discharges from the municipal separate storm sewer) and discharges resulting from fire fighting activities.

(3) Incorporated place means the District of Columbia, or a city, town, township, or village that is incorporated under the laws of the State in which it is located.

(4) Large municipal separate storm sewer system means all municipal separate storm sewers that are either:

(i) Located in an incorporated place with a population of 250,000 or more as determined by the 1990 Decennial Census by the Bureau of the Census (Appendix F of this part); or

(ii) Located in the counties listed in appendix H, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties; or

(iii) Owned or operated by a municipality other than those described in paragraph (b)(4)(i) or (ii) of this section and that are designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraph (b)(4)(i) or (ii) of this section. In making this determination the Director may consider the following factors:

(A) Physical interconnections between the municipal separate storm sewers;

(B) The location of discharges from the designated municipal separate storm sewer relative to discharges from municipal separate storm sewers described in paragraph (b)(4)(i) of this section;

(C) The quantity and nature of pollutants discharged to waters of the United States;

(D) The nature of the receiving waters; and

(E) Other relevant factors; or

(iv) The Director may, upon petition, designate as a large municipal separate storm sewer system, municipal separate storm sewers located within the boundaries of a region defined by a storm water management regional authority based

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on a jurisdictional, watershed, or other appropriate basis that includes one or more of the systems described in paragraph (b)(4)(i), (ii), (iii) of this section.

(5) Major municipal separate storm sewer outfall (or "major outfall") means a municipal separate storm sewer outfall that discharges from a single pipe with an inside diameter of 36 inches or more or its equivalent (discharge from a single conveyance other than circular pipe which is associated with a drainage area of more than 50 acres); or for municipal separate storm sewers that receive storm water from lands zoned for industrial activity (based on comprehensive zoning plans or the equivalent), an outfall that discharges from a single pipe with an inside diameter of 12 inches or more or from its equivalent (discharge from other than a circular pipe associated with a drainage area of 2 acres or more).

(6) Major outfall means a major municipal separate storm sewer outfall.

(7) Medium municipal separate storm sewer system means all municipal separate storm sewers that are either:

(i) Located in an incorporated place with a population of 100,000 or more but less than 250,000, as determined by the 1990 Decennial Census by the Bureau of the Census (appendix G of this part); or

(ii) Located in the counties listed in appendix I, except municipal separate storm sewers that are located in the incorporated places, townships or towns within such counties; or

(iii) Owned or operated by a municipality other than those described in paragraph (b)(7)(i) or (ii) of this section and that are designated by the Director as part of the large or medium municipal separate storm sewer system due to the interrelationship between the discharges of the designated storm sewer and the discharges from municipal separate storm sewers described under paragraph (b)(7)(i) or (ii) of this section. In making this determination the Director may consider the following factors:

(A) Physical interconnections between the municipal separate storm sewers;

(B) The location of discharges from the designated municipal separate storm sewer relative to discharges from municipal separate storm sewers described in paragraph (b)(7)(i) of this section;

(C) The quantity and nature of pollutants discharged to waters of the United States;

(D) The nature of the receiving waters; or

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(E) Other relevant factors; or

(iv) The Director may, upon petition, designate as a medium municipal separate storm sewer system, municipal separate storm sewers located within the boundaries of a region defined by a storm water management regional authority based on a jurisdictional, watershed, or other appropriate basis that includes one or more of the systems described in paragraphs (b)(7) (i), (ii), (iii) of this section.

(8) Municipal separate storm sewer means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;

(ii) Designed or used for collecting or conveying storm water;

(iii) Which is not a combined sewer; and

(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.2.

(9) Outfall means a point source as defined by 40 CFR 122.2 at the point where a municipal separate storm sewer discharges to waters of the United States and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances which connect segments of the same stream or other waters of the United States and are used to convey waters of the United States.

(10) Overburden means any material of any nature, consolidated or unconsolidated, that overlies a mineral deposit, excluding topsoil or similar naturally-occurring surface materials that are not disturbed by mining operations.

(11) Runoff coefficient means the fraction of total rainfall that will appear at a conveyance as runoff.

(12) Significant materials includes, but is not limited to: raw materials; fuels; materials such as solvents, detergents, and plastic pellets; finished materials such as metallic products; raw materials used in food processing or production; hazardous substances designated under section 101(14) of CERCLA; any chemical the facility is required to report pursuant to section 313 of title III of SARA; fertilizers; pesticides; and waste products such as ashes, slag and sludge

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that have the potential to be released with storm water discharges.

(13) Storm water means storm water runoff, snow melt runoff, and surface runoff and drainage.

(14) Storm water discharge associated with industrial activity means the discharge from any conveyance that is used for collecting and conveying storm water and that is directly related to manufacturing, processing or raw materials storage areas at an industrial plant. The term does not include discharges from facilities or activities excluded from the NPDES program under this part 122. For the categories of industries identified in this section, the term includes, but is not limited to, storm water discharges from industrial plant yards; immediate access roads and rail lines used or traveled by carriers of raw materials, manufactured products, waste material, or by-products used or created by the facility; material handling sites; refuse sites; sites used for the application or disposal of process waste waters (as defined at part 401 of this chapter); sites used for the storage and maintenance of material handling equipment; sites used for residual treatment, storage, or disposal; shipping and receiving areas; manufacturing buildings; storage areas (including tank farms) for raw materials, and intermediate and final products; and areas where industrial activity has taken place in the past and significant materials remain and are exposed to storm water. For the purposes of this paragraph, material handling activities include storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product, by-product or waste product. The term excludes areas located on plant lands separate from the plant's industrial activities, such as office buildings and accompanying parking lots as long as the drainage from the excluded areas is not mixed with storm water drained from the above described areas. Industrial facilities (including industrial facilities that are federally, State, or municipally owned or operated that meet the description of the facilities listed in paragraphs (b)(14)(i) through (xi) of this section) include those facilities designated under the provisions of paragraph (a)(1)(v) of this section. The following categories of facilities are considered to be engaging in "industrial activity" for purposes of paragraph (b)(14):

(i) Facilities subject to storm water effluent limitations guidelines, new source performance standards, or toxic pollutant effluent standards under 40 CFR subchapter N (except facilities with toxic pollutant effluent standards which are exempted under category (xi) in paragraph (b)(14) of this section);

(ii) Facilities classified within Standard Industrial Classification 24, Industry Group 241 that are rock crushing, gravel washing, log sorting, or log storage facilities operated in connection with silvicultural activities defined in 40 CFR 122.27(b)(2)-(3) and Industry Groups 242 through 249; 26 (except 265 and 267), 28 (except 283), 29, 311, 32 (except 323), 33, 3441, 373; (not included are all other types of silviculture facilities);

(iii) Facilities classified as Standard Industrial Classifications 10 through 14 (mineral industry) including active or inactive mining operations (except for areas of coal mining operations no longer meeting the definition of a reclamation area under 40 CFR 434.11(1) because the performance bond issued to the facility by the appropriate SMCRA authority has been released, or except for areas of non-coal mining operations which have been released from applicable State or Federal reclamation requirements after December 17, 1990) and oil and gas exploration, production, processing, or treatment operations, or transmission facilities that discharge storm water contaminated by contact with or that has come into contact with, any overburden, raw material, intermediate products, finished products, byproducts or waste products located on the site of such operations; (inactive mining operations are mining sites that are not being actively mined, but which have an identifiable owner/operator; inactive mining sites do not include sites where mining claims are being maintained prior to disturbances associated with the extraction, beneficiation, or processing of mined materials, nor sites where minimal activities are undertaken for the sole purpose of maintaining a mining claim);

(iv) Hazardous waste treatment, storage, or disposal facilities, including those that are operating under interim status or a permit under subtitle C of RCRA;

(v) Landfills, land application sites, and open dumps that receive or have received any industrial wastes (waste that is received from any of the facilities described under this subsection) including those that are subject to regulation under subtitle D of RCRA;

(vi) Facilities involved in the recycling of materials, including metal scrapyards, battery reclaimers, salvage yards, and automobile junkyards, including but limited to those classified as Standard Industrial Classification 5015 and 5093;

(vii) Steam electric power generating facilities, including coal handling sites;

(viii) Transportation facilities classified as Standard Industrial Classifications 40, 41, 42 (except 4221–25), 43, 44, 45, and 5171 which have vehicle maintenance shops, equipment cleaning operations, or airport deicing operations. Only those portions of the facility that are either involved in vehicle maintenance (including vehicle rehabilitation, mechanical repairs, painting, fueling, and lubrication), equipment cleaning operations, airport deicing operations, or which are otherwise identified under paragraphs (b)(14) (i)–(vii) or (ix)–(xi) of this section are associated with industrial activity;

(ix) Treatment works treating domestic sewage or any other sewage sludge or wastewater treatment device or system, used in the storage treatment, recycling, and reclamation of municipal or domestic sewage, including land dedicated to the disposal of sewage sludge that are located within the confines of the facility, with a design flow of 1.0 mgd or more, or required to have an approved pretreatment program under 40 CFR part 403. Not included are farm lands, domestic gardens or lands used for sludge management where sludge is beneficially reused and which are not physically located in the confines of the facility, or areas that are in compliance with section 405 of the CWA;

(x) Construction activity including clearing, grading and excavation, except operations that result in the disturbance of less than five acres of total land area. Construction activity also includes the disturbance of less than five acres of total land area that is a part of a larger common plan of development or sale if the larger common plan will ultimately disturb five acres or more;

(xi) Facilities under Standard Industrial Classifications 20, 21, 22, 23, 2434, 25, 265, 267, 27, 283, 285, 30, 31 (except 311), 323, 34 (except 3441), 35, 36, 37 (except 373), 38, 39, and 4221–25;

(15) Storm water discharge associated with small construction activity means the discharge of storm water from:

(i) Construction activities including clearing, grading, and excavating that result in land disturbance of equal to or greater than one acre and less than five acres. Small construction activity also includes the disturbance of less than one

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acre of total land area that is part of a larger common plan of development or sale if the larger common plan will ultimately disturb equal to or greater than one and less than five acres. Small construction activity does not include routine maintenance that is performed to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. The Director may waive the otherwise applicable requirements in a general permit for a storm water discharge from construction activities that disturb less than five acres where:

(A) The value of the rainfall erosivity factor ("R" in the Revised Universal Soil Loss Equation) is less than five during the period of construction activity. The rainfall erosivity factor is determined in accordance with Chapter 2 of Agriculture Handbook Number 703, Predicting Soil Erosion by Water: A Guide to Conservation Planning with the Revised Universal Soil Loss Equation (RUSLE), pages 21–64, dated January 1997. The Director of the Federal Register approves this incorporation by reference in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. Copies may be obtained at EPA's Water Docket, 1200 Pennsylvania Avenue NW, Washington, DC 20460. For information on the availability of this material at National Archives and Records Administration, call 202–741–6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html. An operator must certify to the Director that the construction activity will take place during a period when the value of the rainfall erosivity factor is less than five; or

(B) Storm water controls are not needed based on a "total maximum daily load" (TMDL) approved or established by EPA that addresses the pollutant(s) of concern or, for non-impaired waters that do not require TMDLs, an equivalent analysis that determines allocations for small construction sites for the pollutant(s) of concern or that determines that such allocations are not needed to protect water quality based on consideration of existing in-stream concentrations, expected growth in pollutant contributions from all sources, and a margin of safety. For the purpose of this paragraph, the pollutant(s) of concern include sediment or a parameter that addresses sediment (such as total suspended solids, turbidity or siltation) and any other pollutant that has been identified as a cause of impairment of any water body that will receive a discharge from the construction activity. The operator must certify to the Director that the construction activity will take place, and storm water discharges will occur, within the drainage area addressed by the TMDL or equivalent analysis.

(C) As of December 21, 2020 all certifications submitted in compliance with paragraphs (b)(15)(i)(A) and (B) of this section must be submitted electronically by the owner or operator to the Director or initial recipient, as defined in 40 CFR 127.2(b), in compliance with this section and 40 CFR part 3 (including, in all cases, subpart D to part 3), § 122.22, and 40 CFR part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of part 127, owners or operators may be required to report electronically if specified by a particular permit or if required to do so by state law.

(ii) Any other construction activity designated by the Director, or in States with approved NPDES programs either the Director or the EPA Regional Administrator, based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants to waters of the United States.

Exhibit 1 to § 122.26(b)(15).—Summary of Coverage of "Storm Water Discharges Associated with Small Construction Activity" Under the NPDES Storm Water Program

Automatic Designation: Required Nationwide	· Construction activities that result in a land

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Coverage	disturbance of equal to or greater than one acre and less than five acres. · Construction activities disturbing less than one acre if part of a larger common plan of development or sale with a planned disturbance of equal to or greater than one acre and less than five acres. (see § 122.26(b)(15)(i).)
Potential Designation: Optional Evaluation and Designation by the NPDES Permitting Authority or EPA Regional Administrator.	· Construction activities that result in a land disturbance of less than one acre based on the potential for contribution to a violation of a water quality standard or for significant contribution of pollutants. (see § 122.26(b)(15)(ii).)
Potential Waiver: Waiver from Requirements as Determined by the NPDES Permitting Authority.	Any automatically designated construction activity where the operator certifies: (1) A rainfall erosivity factor of less than five, or (2) That the activity will occur within an area where controls are not needed based on a TMDL or, for non-impaired waters that do not require a TMDL, an equivalent analysis for the pollutant(s) of concern. (see § 122.26(b)(15)(i).)

(16) Small municipal separate storm sewer system means all separate storm sewers that are:

(i) Owned or operated by the United States, a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States.

(ii) Not defined as “large” or “medium” municipal separate storm sewer systems pursuant to paragraphs (b)(4) and (b)(7) of this section, or designated under paragraph (a)(1)(v) of this section.

(iii) This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings.

(17) Small MS4 means a small municipal separate storm sewer system.

(18) Municipal separate storm sewer system means all separate storm sewers that are defined as “large” or “medium” or “small” municipal separate storm sewer systems pursuant to paragraphs (b)(4), (b)(7), and (b)(16) of this section, or designated under paragraph (a)(1)(v) of this section.

(19) MS4 means a municipal separate storm sewer system.

(20) Uncontrolled sanitary landfill means a landfill or open dump, whether in operation or closed, that does not meet the requirements for runon or runoff controls established pursuant to subtitle D of the Solid Waste Disposal Act.

(c) Application requirements for storm water discharges associated with industrial activity and storm water discharges associated with small construction activity—

(1) Individual application. Dischargers of storm water associated with industrial activity and with small construction activity are required to apply for an individual permit or seek coverage under a promulgated storm water general permit. Facilities that are required to obtain an individual permit or any discharge of storm water which the Director is evaluating for designation (see 124.52(c) of this chapter) under paragraph (a)(1)(v) of this section and is not a municipal storm sewer, shall submit an NPDES application in accordance with the requirements of § 122.21 as modified and supplemented by the provisions of this paragraph.

(i) Except as provided in § 122.26(c)(1)(ii)–(iv), the operator of a storm water discharge associated with industrial activity subject to this section shall provide:

(A) A site map showing topography (or indicating the outline of drainage areas served by the outfall(s) covered in the application if a topographic map is unavailable) of the facility including: each of its drainage and discharge structures; the drainage area of each storm water outfall; paved areas and buildings within the drainage area of each storm water outfall, each past or present area used for outdoor storage or disposal of significant materials, each existing structural control measure to reduce pollutants in storm water runoff, materials loading and access areas, areas where pesticides, herbicides, soil conditioners and fertilizers are applied, each of its hazardous waste treatment, storage or disposal facilities (including each area not required to have a RCRA permit which is used for accumulating hazardous waste under 40 CFR 262.34); each well where fluids from the facility are injected underground; springs, and other surface water bodies which receive storm water discharges from the facility;

(B) An estimate of the area of impervious surfaces (including paved areas and building roofs) and the total area drained by each outfall (within a mile radius of the facility) and a narrative description of the following: Significant materials that in the three years prior to the submittal of this application have been treated, stored or disposed in a manner to allow exposure to storm water; method of treatment, storage or disposal of such materials; materials management practices employed, in the three years prior to the submittal of this application, to minimize contact by these materials with storm water runoff; materials loading and access areas; the location, manner and frequency in which pesticides, herbicides, soil conditioners and fertilizers are applied; the location and a description of existing structural and non-structural control measures to reduce pollutants in storm water runoff; and a description of the

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treatment the storm water receives, including the ultimate disposal of any solid or fluid wastes other than by discharge;

(C) A certification that all outfalls that should contain storm water discharges associated with industrial activity have been tested or evaluated for the presence of non-storm water discharges which are not covered by a NPDES permit; tests for such non-storm water discharges may include smoke tests, fluorometric dye tests, analysis of accurate schematics, as well as other appropriate tests. The certification shall include a description of the method used, the date of any testing, and the on-site drainage points that were directly observed during a test;

(D) Existing information regarding significant leaks or spills of toxic or hazardous pollutants at the facility that have taken place within the three years prior to the submittal of this application;

(E) Quantitative data based on samples collected during storm events and collected in accordance with § 122.21 of this part from all outfalls containing a storm water discharge associated with industrial activity for the following parameters:

(1) Any pollutant limited in an effluent guideline to which the facility is subject;

(2) Any pollutant listed in the facility's NPDES permit for its process wastewater (if the facility is operating under an existing NPDES permit);

(3) Oil and grease, pH, BOD5, COD, TSS, total phosphorus, total Kjeldahl nitrogen, and nitrate plus nitrite nitrogen;

(4) Any information on the discharge required under § 122.21(g)(7)(vi) and (vii);

(5) Flow measurements or estimates of the flow rate, and the total amount of discharge for the storm event(s) sampled, and the method of flow measurement or estimation; and

(6) The date and duration (in hours) of the storm event(s) sampled, rainfall measurements or estimates of the storm event (in inches) which generated the sampled runoff and the duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event (in hours);

(F) Operators of a discharge which is composed entirely of storm water are exempt from the requirements of § 122.21(g)(2), (g)(3), (g)(4), (g)(5), (g)(7)(iii), (g)(7)(iv), (g)(7)(v), and (g)(7)(viii); and

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(G) Operators of new sources or new discharges (as defined in § 122.2 of this part) which are composed in part or entirely of storm water must include estimates for the pollutants or parameters listed in paragraph (c)(1)(i)(E) of this section instead of actual sampling data, along with the source of each estimate. Operators of new sources or new discharges composed in part or entirely of storm water must provide quantitative data for the parameters listed in paragraph (c)(1)(i)(E) of this section within two years after commencement of discharge, unless such data has already been reported under the monitoring requirements of the NPDES permit for the discharge. Operators of a new source or new discharge which is composed entirely of storm water are exempt from the requirements of § 122.21 (k)(3)(ii), (k)(3)(iii), and (k)(5).

(ii) An operator of an existing or new storm water discharge that is associated with industrial activity solely under paragraph (b)(14)(x) of this section or is associated with small construction activity solely under paragraph (b)(15) of this section, is exempt from the requirements of § 122.21(g) and paragraph (c)(1)(i) of this section. Such operator shall provide a narrative description of:

(A) The location (including a map) and the nature of the construction activity;

(B) The total area of the site and the area of the site that is expected to undergo excavation during the life of the permit;

(C) Proposed measures, including best management practices, to control pollutants in storm water discharges during construction, including a brief description of applicable State and local erosion and sediment control requirements;

(D) Proposed measures to control pollutants in storm water discharges that will occur after construction operations have been completed, including a brief description of applicable State or local erosion and sediment control requirements;

(E) An estimate of the runoff coefficient of the site and the increase in impervious area after the construction addressed in the permit application is completed, the nature of fill material and existing data describing the soil or the quality of the discharge; and

(F) The name of the receiving water.

(iii) The operator of an existing or new discharge composed entirely of storm water from an oil or gas exploration, production, processing, or treatment operation, or transmission facility is not required to submit a permit application in accordance with paragraph (c)(1)(i) of this section, unless the facility:

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(A) Has had a discharge of storm water resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 117.21 or 40 CFR 302.6 at anytime since November 16, 1987; or

(B) Has had a discharge of storm water resulting in the discharge of a reportable quantity for which notification is or was required pursuant to 40 CFR 110.6 at any time since November 16, 1987; or

(C) Contributes to a violation of a water quality standard.

(iv) The operator of an existing or new discharge composed entirely of storm water from a mining operation is not required to submit a permit application unless the discharge has come into contact with, any overburden, raw material, intermediate products, finished product, byproduct or waste products located on the site of such operations.

(v) Applicants shall provide such other information the Director may reasonably require under § 122.21(g)(13) of this part to determine whether to issue a permit and may require any facility subject to paragraph (c)(1)(ii) of this section to comply with paragraph (c)(1)(i) of this section.

(2) [Reserved]

(d) Application requirements for large and medium municipal separate storm sewer discharges. The operator of a discharge from a large or medium municipal separate storm sewer or a municipal separate storm sewer that is designated by the Director under paragraph (a)(1)(v) of this section, may submit a jurisdiction-wide or system-wide permit application. Where more than one public entity owns or operates a municipal separate storm sewer within a geographic area (including adjacent or interconnected municipal separate storm sewer systems), such operators may be a coapplicant to the same application. Permit applications for discharges from large and medium municipal storm sewers or municipal storm sewers designated under paragraph (a)(1)(v) of this section shall include;

(1) Part 1. Part 1 of the application shall consist of;

(i) General information. The applicants' name, address, telephone number of contact person, ownership status and status as a State or local government entity.

(ii) Legal authority. A description of existing legal authority to control discharges to the municipal separate storm sewer system. When existing legal authority is not sufficient to meet the criteria provided in paragraph (d)(2)(i) of this section, the description shall list additional authorities as will be necessary to meet the criteria and shall include a schedule and commitment to seek such additional authority that will be needed to meet the criteria.

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(iii) Source identification.

(A) A description of the historic use of ordinances, guidance or other controls which limited the discharge of non-storm water discharges to any Publicly Owned Treatment Works serving the same area as the municipal separate storm sewer system.

(B) A USGS 7.5 minute topographic map (or equivalent topographic map with a scale between 1:10,000 and 1:24,000 if cost effective) extending one mile beyond the service boundaries of the municipal storm sewer system covered by the permit application. The following information shall be provided:

(1) The location of known municipal storm sewer system outfalls discharging to waters of the United States;

(2) A description of the land use activities (e.g. divisions indicating undeveloped, residential, commercial, agricultural and industrial uses) accompanied with estimates of population densities and projected growth for a ten year period within the drainage area served by the separate storm sewer. For each land use type, an estimate of an average runoff coefficient shall be provided;

(3) The location and a description of the activities of the facility of each currently operating or closed municipal landfill or other treatment, storage or disposal facility for municipal waste;

(4) The location and the permit number of any known discharge to the municipal storm sewer that has been issued a NPDES permit;

(5) The location of major structural controls for storm water discharge (retention basins, detention basins, major infiltration devices, etc.); and

(6) The identification of publicly owned parks, recreational areas, and other open lands.

(iv) Discharge characterization.

(A) Monthly mean rain and snow fall estimates (or summary of weather bureau data) and the monthly average number of storm events.

(B) Existing quantitative data describing the volume and quality of discharges from the municipal storm sewer,

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including a description of the outfalls sampled, sampling procedures and analytical methods used.

(C) A list of water bodies that receive discharges from the municipal separate storm sewer system, including downstream segments, lakes and estuaries, where pollutants from the system discharges may accumulate and cause water degradation and a brief description of known water quality impacts. At a minimum, the description of impacts shall include a description of whether the water bodies receiving such discharges have been:

(1) Assessed and reported in section 305(b) reports submitted by the State, the basis for the assessment (evaluated or monitored), a summary of designated use support and attainment of Clean Water Act (CWA) goals (fishable and swimmable waters), and causes of nonsupport of designated uses;

(2) Listed under section 304(l)(1)(A)(i), section 304(l)(1)(A)(ii), or section 304(l)(1)(B) of the CWA that is not expected to meet water quality standards or water quality goals;

(3) Listed in State Nonpoint Source Assessments required by section 319(a) of the CWA that, without additional action to control nonpoint sources of pollution, cannot reasonably be expected to attain or maintain water quality standards due to storm sewers, construction, highway maintenance and runoff from municipal landfills and municipal sludge adding significant pollution (or contributing to a violation of water quality standards);

(4) Identified and classified according to eutrophic condition of publicly owned lakes listed in State reports required under section 314(a) of the CWA (include the following: A description of those publicly owned lakes for which uses are known to be impaired; a description of procedures, processes and methods to control the discharge of pollutants from municipal separate storm sewers into such lakes; and a description of methods and procedures to restore the quality of such lakes);

(5) Areas of concern of the Great Lakes identified by the International Joint Commission;

(6) Designated estuaries under the National Estuary Program under section 320 of the CWA;

(7) Recognized by the applicant as highly valued or sensitive waters;

(8) Defined by the State or U.S. Fish and Wildlife Services's National Wetlands Inventory as wetlands; and

(9) Found to have pollutants in bottom sediments, fish tissue or biosurvey data.

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(D) Field screening. Results of a field screening analysis for illicit connections and illegal dumping for either selected field screening points or major outfalls covered in the permit application. At a minimum, a screening analysis shall include a narrative description, for either each field screening point or major outfall, of visual observations made during dry weather periods. If any flow is observed, two grab samples shall be collected during a 24 hour period with a minimum period of four hours between samples. For all such samples, a narrative description of the color, odor, turbidity, the presence of an oil sheen or surface scum as well as any other relevant observations regarding the potential presence of non-storm water discharges or illegal dumping shall be provided. In addition, a narrative description of the results of a field analysis using suitable methods to estimate pH, total chlorine, total copper, total phenol, and detergents (or surfactants) shall be provided along with a description of the flow rate. Where the field analysis does not involve analytical methods approved under 40 CFR part 136, the applicant shall provide a description of the method used including the name of the manufacturer of the test method along with the range and accuracy of the test. Field screening points shall be either major outfalls or other outfall points (or any other point of access such as manholes) randomly located throughout the storm sewer system by placing a grid over a drainage system map and identifying those cells of the grid which contain a segment of the storm sewer system or major outfall. The field screening points shall be established using the following guidelines and criteria:

(1) A grid system consisting of perpendicular north-south and east-west lines spaced ¼ mile apart shall be overlaid on a map of the municipal storm sewer system, creating a series of cells;

(2) All cells that contain a segment of the storm sewer system shall be identified; one field screening point shall be selected in each cell; major outfalls may be used as field screening points;

(3) Field screening points should be located downstream of any sources of suspected illegal or illicit activity;

(4) Field screening points shall be located to the degree practicable at the farthest manhole or other accessible location downstream in the system, within each cell; however, safety of personnel and accessibility of the location should be considered in making this determination;

(5) Hydrological conditions; total drainage area of the site; population density of the site; traffic density; age of the structures or buildings in the area; history of the area; and land use types;

(6) For medium municipal separate storm sewer systems, no more than 250 cells need to have identified field screening points; in large municipal separate storm sewer systems, no more than 500 cells need to have identified field screening points; cells established by the grid that contain no storm sewer segments will be eliminated from consideration; if fewer than 250 cells in medium municipal sewers are created, and fewer than 500 in large systems are created by the overlay on the municipal sewer map, then all those cells which contain a segment of the sewer system shall be subject to field screening (unless access to the separate storm sewer system is impossible); and

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(7) Large or medium municipal separate storm sewer systems which are unable to utilize the procedures described in paragraphs (d)(1)(iv)(D) (1) through (6) of this section, because a sufficiently detailed map of the separate storm sewer systems is unavailable, shall field screen no more than 500 or 250 major outfalls respectively (or all major outfalls in the system, if less); in such circumstances, the applicant shall establish a grid system consisting of north-south and east-west lines spaced ¼ mile apart as an overlay to the boundaries of the municipal storm sewer system, thereby creating a series of cells; the applicant will then select major outfalls in as many cells as possible until at least 500 major outfalls (large municipalities) or 250 major outfalls (medium municipalities) are selected; a field screening analysis shall be undertaken at these major outfalls.

(E) Characterization plan. Information and a proposed program to meet the requirements of paragraph (d)(2)(iii) of this section. Such description shall include: the location of outfalls or field screening points appropriate for representative data collection under paragraph (d)(2)(iii)(A) of this section, a description of why the outfall or field screening point is representative, the seasons during which sampling is intended, a description of the sampling equipment. The proposed location of outfalls or field screening points for such sampling should reflect water quality concerns (see paragraph (d)(1)(iv)(C) of this section) to the extent practicable.

(v) Management programs.

(A) A description of the existing management programs to control pollutants from the municipal separate storm sewer system. The description shall provide information on existing structural and source controls, including operation and maintenance measures for structural controls, that are currently being implemented. Such controls may include, but are not limited to: Procedures to control pollution resulting from construction activities; floodplain management controls; wetland protection measures; best management practices for new subdivisions; and emergency spill response programs. The description may address controls established under State law as well as local requirements.

(B) A description of the existing program to identify illicit connections to the municipal storm sewer system. The description should include inspection procedures and methods for detecting and preventing illicit discharges, and describe areas where this program has been implemented.

(vi) Fiscal resources.

(A) A description of the financial resources currently available to the municipality to complete part 2 of the permit application. A description of the municipality’s budget for existing storm water programs, including an overview of the municipality’s financial resources and budget, including overall indebtedness and assets, and sources of funds for storm water programs.

(2) Part 2. Part 2 of the application shall consist of:

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(i) Adequate legal authority. A demonstration that the applicant can operate pursuant to legal authority established by statute, ordinance or series of contracts which authorizes or enables the applicant at a minimum to:

(A) Control through ordinance, permit, contract, order or similar means, the contribution of pollutants to the municipal storm sewer by storm water discharges associated with industrial activity and the quality of storm water discharged from sites of industrial activity;

(B) Prohibit through ordinance, order or similar means, illicit discharges to the municipal separate storm sewer;

(C) Control through ordinance, order or similar means the discharge to a municipal separate storm sewer of spills, dumping or disposal of materials other than storm water;

(D) Control through interagency agreements among coapplicants the contribution of pollutants from one portion of the municipal system to another portion of the municipal system;

(E) Require compliance with conditions in ordinances, permits, contracts or orders; and

(F) Carry out all inspection, surveillance and monitoring procedures necessary to determine compliance and noncompliance with permit conditions including the prohibition on illicit discharges to the municipal separate storm sewer.

(ii) Source identification. The location of any major outfall that discharges to waters of the United States that was not reported under paragraph (d)(1)(iii)(B)(1) of this section. Provide an inventory, organized by watershed of the name and address, and a description (such as SIC codes) which best reflects the principal products or services provided by each facility which may discharge, to the municipal separate storm sewer, storm water associated with industrial activity;

(iii) Characterization data. When “quantitative data” for a pollutant are required under paragraph (d)(2)(iii)(A)(3) of this section, the applicant must collect a sample of effluent in accordance with 40 CFR 122.21(g)(7) and analyze it for the pollutant in accordance with analytical methods approved under part 136 of this chapter. When no analytical method is approved the applicant may use any suitable method but must provide a description of the method. The applicant must provide information characterizing the quality and quantity of discharges covered in the permit application, including:

(A) Quantitative data from representative outfalls designated by the Director (based on information received in part 1 of the application, the Director shall designate between five and ten outfalls or field screening points as representative of the commercial, residential and industrial land use activities of the drainage area contributing to the system or, where there are less than five outfalls covered in the application, the Director shall designate all outfalls) developed as follows:

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(1) For each outfall or field screening point designated under this subparagraph, samples shall be collected of storm water discharges from three storm events occurring at least one month apart in accordance with the requirements at § 122.21(g)(7) (the Director may allow exemptions to sampling three storm events when climatic conditions create good cause for such exemptions);

(2) A narrative description shall be provided of the date and duration of the storm event(s) sampled, rainfall estimates of the storm event which generated the sampled discharge and the duration between the storm event sampled and the end of the previous measurable (greater than 0.1 inch rainfall) storm event;

(3) For samples collected and described under paragraphs (d)(2)(iii)(A)(1) and (A)(2) of this section, quantitative data shall be provided for: the organic pollutants listed in Table II; the pollutants listed in Table III (toxic metals, cyanide, and total phenols) of appendix D of 40 CFR part 122, and for the following pollutants:

Total suspended solids (TSS)

Total dissolved solids (TDS)

COD

BOD_5

Oil and grease

Fecal coliform

Fecal streptococcus

pH

Total Kjeldahl nitrogen

Nitrate plus nitrite

Dissolved phosphorus

Total ammonia plus organic nitrogen

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Total phosphorus

(4) Additional limited quantitative data required by the Director for determining permit conditions (the Director may require that quantitative data shall be provided for additional parameters, and may establish sampling conditions such as the location, season of sample collection, form of precipitation (snow melt, rainfall) and other parameters necessary to insure representativeness);

(B) Estimates of the annual pollutant load of the cumulative discharges to waters of the United States from all identified municipal outfalls and the event mean concentration of the cumulative discharges to waters of the United States from all identified municipal outfalls during a storm event (as described under § 122.21(c)(7)) for BOD_5, COD, TSS, dissolved solids, total nitrogen, total ammonia plus organic nitrogen, total phosphorus, dissolved phosphorus, cadmium, copper, lead, and zinc. Estimates shall be accompanied by a description of the procedures for estimating constituent loads and concentrations, including any modelling, data analysis, and calculation methods;

(C) A proposed schedule to provide estimates for each major outfall identified in either paragraph (d)(2)(ii) or (d)(1)(iii)(B)(1) of this section of the seasonal pollutant load and of the event mean concentration of a representative storm for any constituent detected in any sample required under paragraph (d)(2)(iii)(A) of this section; and

(D) A proposed monitoring program for representative data collection for the term of the permit that describes the location of outfalls or field screening points to be sampled (or the location of instream stations), why the location is representative, the frequency of sampling, parameters to be sampled, and a description of sampling equipment.

(iv) Proposed management program. A proposed management program covers the duration of the permit. It shall include a comprehensive planning process which involves public participation and where necessary intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate. The program shall also include a description of staff and equipment available to implement the program. Separate proposed programs may be submitted by each coapplicant. Proposed programs may impose controls on a systemwide basis, a watershed basis, a jurisdiction basis, or on individual outfalls. Proposed programs will be considered by the Director when developing permit conditions to reduce pollutants in discharges to the maximum extent practicable. Proposed management programs shall describe priorities for implementing controls. Such programs shall be based on:

(A) A description of structural and source control measures to reduce pollutants from runoff from commercial and residential areas that are discharged from the municipal storm sewer system that are to be implemented during the life of the permit, accompanied with an estimate of the expected reduction of pollutant loads and a proposed schedule for implementing such controls. At a minimum, the description shall include:

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(1) A description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers;

(2) A description of planning procedures including a comprehensive master plan to develop, implement and enforce controls to reduce the discharge of pollutants from municipal separate storm sewers which receive discharges from areas of new development and significant redevelopment. Such plan shall address controls to reduce pollutants in discharges from municipal separate storm sewers after construction is completed. (Controls to reduce pollutants in discharges from municipal separate storm sewers containing construction site runoff are addressed in paragraph (d)(2)(iv)(D) of this section;

(3) A description of practices for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters of discharges from municipal storm sewer systems, including pollutants discharged as a result of deicing activities;

(4) A description of procedures to assure that flood management projects assess the impacts on the water quality of receiving water bodies and that existing structural flood control devices have been evaluated to determine if retrofitting the device to provide additional pollutant removal from storm water is feasible;

(5) A description of a program to monitor pollutants in runoff from operating or closed municipal landfills or other treatment, storage or disposal facilities for municipal waste, which shall identify priorities and procedures for inspections and establishing and implementing control measures for such discharges (this program can be coordinated with the program developed under paragraph (d)(2)(iv)(C) of this section); and

(6) A description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewers associated with the application of pesticides, herbicides and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities.

(B) A description of a program, including a schedule, to detect and remove (or require the discharger to the municipal separate storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer. The proposed program shall include:

(1) A description of a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal separate storm sewer system; this program description shall address all types of illicit discharges, however the following category of non-storm water discharges or flows shall be addressed where such discharges are identified by the municipality as sources of pollutants to waters of the United States: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)) to separate storm sewers, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn

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watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water (program descriptions shall address discharges or flows from fire fighting only where such discharges or flows are identified as significant sources of pollutants to waters of the United States);

(2) A description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens;

(3) A description of procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-storm water (such procedures may include: sampling procedures for constituents such as fecal coliform, fecal streptococcus, surfactants (MBAS), residual chlorine, fluorides and potassium; testing with fluorometric dyes; or conducting in storm sewer inspections where safety and other considerations allow. Such description shall include the location of storm sewers that have been identified for such evaluation);

(4) A description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer;

(5) A description of a program to promote, publicize, and facilitate public reporting of the presence of illicit discharges or water quality impacts associated with discharges from municipal separate storm sewers;

(6) A description of educational activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials; and

(7) A description of controls to limit infiltration of seepage from municipal sanitary sewers to municipal separate storm sewer systems where necessary;

(C) A description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system. The program shall:

(1) Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges;

(2) Describe a monitoring program for storm water discharges associated with the industrial facilities

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identified in paragraph (d)(2)(iv)(C) of this section, to be implemented during the term of the permit, including the submission of quantitative data on the following constituents: any pollutants limited in effluent guidelines subcategories, where applicable; any pollutant listed in an existing NPDES permit for a facility; oil and grease, COD, pH, BOD_5, TSS, total phosphorus, total Kjeldahl nitrogen, nitrate plus nitrite nitrogen, and any information on discharges required under § 122.21(g)(7)(vi) and (vii).

(D) A description of a program to implement and maintain structural and non-structural best management practices to reduce pollutants in storm water runoff from construction sites to the municipal storm sewer system, which shall include:

(1) A description of procedures for site planning which incorporate consideration of potential water quality impacts;

(2) A description of requirements for nonstructural and structural best management practices;

(3) A description of procedures for identifying priorities for inspecting sites and enforcing control measures which consider the nature of the construction activity, topography, and the characteristics of soils and receiving water quality; and

(4) A description of appropriate educational and training measures for construction site operators.

(v) Assessment of controls. Estimated reductions in loadings of pollutants from discharges of municipal storm sewer constituents from municipal storm sewer systems expected as the result of the municipal storm water quality management program. The assessment shall also identify known impacts of storm water controls on ground water.

(vi) Fiscal analysis. For each fiscal year to be covered by the permit, a fiscal analysis of the necessary capital and operation and maintenance expenditures necessary to accomplish the activities of the programs under paragraphs (d)(2)(iii) and (iv) of this section. Such analysis shall include a description of the source of funds that are proposed to meet the necessary expenditures, including legal restrictions on the use of such funds.

(vii) Where more than one legal entity submits an application, the application shall contain a description of the roles and responsibilities of each legal entity and procedures to ensure effective coordination.

(viii) Where requirements under paragraph (d)(1)(iv)(E), (d)(2)(ii), (d)(2)(iii)(B) and (d)(2)(iv) of this section are not practicable or are not applicable, the Director may exclude any operator of a discharge from a municipal separate storm sewer which is designated under paragraph (a)(1)(v), (b)(4)(ii) or (b)(7)(ii) of this section from such requirements. The Director shall not exclude the operator of a discharge from a municipal separate storm sewer identified in appendix F, G, H or I of part 122, from any of the permit application requirements under this paragraph except where authorized under

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this section.

(e) Application deadlines. Any operator of a point source required to obtain a permit under this section that does not have an effective NPDES permit authorizing discharges from its storm water outfalls shall submit an application in accordance with the following deadlines:

(1) Storm water discharges associated with industrial activity.

(i) Except as provided in paragraph (e)(1)(ii) of this section, for any storm water discharge associated with industrial activity identified in paragraphs (b)(14)(i) through (xi) of this section, that is not part of a group application as described in paragraph (c)(2) of this section or that is not authorized by a storm water general permit, a permit application made pursuant to paragraph (c) of this section must be submitted to the Director by October 1, 1992;

(ii) For any storm water discharge associated with industrial activity from a facility that is owned or operated by a municipality with a population of less than 100,000 that is not authorized by a general or individual permit, other than an airport, powerplant, or uncontrolled sanitary landfill, the permit application must be submitted to the Director by March 10, 2003.

(2) For any group application submitted in accordance with paragraph (c)(2) of this section:

(i) Part 1.

(A) Except as provided in paragraph (e)(2)(i)(B) of this section, part 1 of the application shall be submitted to the Director, Office of Wastewater Enforcement and Compliance by September 30, 1991;

(B) Any municipality with a population of less than 250,000 shall not be required to submit a part 1 application before May 18, 1992.

(C) For any storm water discharge associated with industrial activity from a facility that is owned or operated by a municipality with a population of less than 100,000 other than an airport, powerplant, or uncontrolled sanitary landfill, permit applications requirements are reserved.

(ii) Based on information in the part 1 application, the Director will approve or deny the members in the group application within 60 days after receiving part 1 of the group application.

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(iii) Part 2.

(A) Except as provided in paragraph (e)(2)(iii)(B) of this section, part 2 of the application shall be submitted to the Director, Office of Wastewater Enforcement and Compliance by October 1, 1992;

(B) Any municipality with a population of less than 250,000 shall not be required to submit a part 1 application before May 17, 1993.

(C) For any storm water discharge associated with industrial activity from a facility that is owned or operated by a municipality with a population of less than 100,000 other than an airport, powerplant, or uncontrolled sanitary landfill, permit applications requirements are reserved.

(iv) Rejected facilities.

(A) Except as provided in paragraph (e)(2)(iv)(B) of this section, facilities that are rejected as members of the group shall submit an individual application (or obtain coverage under an applicable general permit) no later than 12 months after the date of receipt of the notice of rejection or October 1, 1992, whichever comes first.

(B) Facilities that are owned or operated by a municipality and that are rejected as members of part 1 group application shall submit an individual application no later than 180 days after the date of receipt of the notice of rejection or October 1, 1992, whichever is later.

(v) A facility listed under paragraph (b)(14) (i)–(xi) of this section may add on to a group application submitted in accordance with paragraph (e)(2)(i) of this section at the discretion of the Office of Water Enforcement and Permits, and only upon a showing of good cause by the facility and the group applicant; the request for the addition of the facility shall be made no later than February 18,1992; the addition of the facility shall not cause the percentage of the facilities that are required to submit quantitative data to be less than 10%, unless there are over 100 facilities in the group that are submitting quantitative data; approval to become part of group application must be obtained from the group or the trade association representing the individual facilities.

(3) For any discharge from a large municipal separate storm sewer system;

(i) Part 1 of the application shall be submitted to the Director by November 18, 1991;

(ii) Based on information received in the part 1 application the Director will approve or deny a sampling plan under paragraph (d)(1)(iv)(E) of this section within 90 days after receiving the part 1 application;

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(iii) Part 2 of the application shall be submitted to the Director by November 16, 1992.

(4) For any discharge from a medium municipal separate storm sewer system;

(i) Part 1 of the application shall be submitted to the Director by May 18, 1992.

(ii) Based on information received in the part 1 application the Director will approve or deny a sampling plan under paragraph (d)(1)(iv)(E) of this section within 90 days after receiving the part 1 application.

(iii) Part 2 of the application shall be submitted to the Director by May 17, 1993.

(5) A permit application shall be submitted to the Director within 180 days of notice, unless permission for a later date is granted by the Director (see § 124.52(c) of this chapter), for:

(i) A storm water discharge that the Director, or in States with approved NPDES programs, either the Director or the EPA Regional Administrator, determines that the discharge contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States (see paragraphs (a)(1)(v) and (b)(15)(ii) of this section);

(ii) A storm water discharge subject to paragraph (c)(1)(v) of this section.

(6) Facilities with existing NPDES permits for storm water discharges associated with industrial activity shall maintain existing permits. Facilities with permits for storm water discharges associated with industrial activity which expire on or after May 18, 1992 shall submit a new application in accordance with the requirements of 40 CFR 122.21 and 40 CFR 122.26(c) (Form 1, Form 2F, and other applicable Forms) 180 days before the expiration of such permits.

(7) The Director shall issue or deny permits for discharges composed entirely of storm water under this section in accordance with the following schedule:

(i)(A) Except as provided in paragraph (e)(7)(i)(B) of this section, the Director shall issue or deny permits for storm water discharges associated with industrial activity no later than October 1, 1993, or, for new sources or existing sources which fail to submit a complete permit application by October 1, 1992, one year after receipt of a complete permit

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application;

(B) For any municipality with a population of less than 250,000 which submits a timely Part I group application under paragraph (e)(2)(i)(B) of this section, the Director shall issue or deny permits for storm water discharges associated with industrial activity no later than May 17, 1994, or, for any such municipality which fails to submit a complete Part II group permit application by May 17, 1993, one year after receipt of a complete permit application;

(ii) The Director shall issue or deny permits for large municipal separate storm sewer systems no later than November 16, 1993, or, for new sources or existing sources which fail to submit a complete permit application by November 16, 1992, one year after receipt of a complete permit application;

(iii) The Director shall issue or deny permits for medium municipal separate storm sewer systems no later than May 17, 1994, or, for new sources or existing sources which fail to submit a complete permit application by May 17, 1993, one year after receipt of a complete permit application.

(8) For any storm water discharge associated with small construction activities identified in paragraph (b)(15)(i) of this section, see § 122.21(c)(1). Discharges from these sources require permit authorization by March 10, 2003, unless designated for coverage before then.

(9) For any discharge from a regulated small MS4, the permit application made under § 122.33 must be submitted to the Director by:

(i) March 10, 2003 if designated under § 122.32(a)(1) unless your MS4 serves a jurisdiction with a population under 10,000 and the NPDES permitting authority has established a phasing schedule under § 123.35(d)(3) (see § 122.33(c)(1)); or

(ii) Within 180 days of notice, unless the NPDES permitting authority grants a later date, if designated under § 122.32(a)(2) (see § 122.33(c)(2)).

(f) Petitions.

(1) Any operator of a municipal separate storm sewer system may petition the Director to require a separate NPDES permit (or a permit issued under an approved NPDES State program) for any discharge into the municipal separate storm sewer system.

(2) Any person may petition the Director to require a NPDES permit for a discharge which is composed entirely of

storm water which contributes to a violation of a water quality standard or is a significant contributor of pollutants to waters of the United States.

(3) The owner or operator of a municipal separate storm sewer system may petition the Director to reduce the Census estimates of the population served by such separate system to account for storm water discharged to combined sewers as defined by 40 CFR 35.2005(b)(11) that is treated in a publicly owned treatment works. In municipalities in which combined sewers are operated, the Census estimates of population may be reduced proportional to the fraction, based on estimated lengths, of the length of combined sewers over the sum of the length of combined sewers and municipal separate storm sewers where an applicant has submitted the NPDES permit number associated with each discharge point and a map indicating areas served by combined sewers and the location of any combined sewer overflow discharge point.

(4) Any person may petition the Director for the designation of a large, medium, or small municipal separate storm sewer system as defined by paragraph (b)(4)(iv), (b)(7)(iv), or (b)(16) of this section.

(5) The Director shall make a final determination on any petition received under this section within 90 days after receiving the petition with the exception of petitions to designate a small MS4 in which case the Director shall make a final determination on the petition within 180 days after its receipt.

(g) Conditional exclusion for “no exposure” of industrial activities and materials to storm water. Discharges composed entirely of storm water are not storm water discharges associated with industrial activity if there is “no exposure” of industrial materials and activities to rain, snow, snowmelt and/or runoff, and the discharger satisfies the conditions in paragraphs (g)(1) through (g)(4) of this section. “No exposure” means that all industrial materials and activities are protected by a storm resistant shelter to prevent exposure to rain, snow, snowmelt, and/or runoff. Industrial materials or activities include, but are not limited to, material handling equipment or activities, industrial machinery, raw materials, intermediate products, by-products, final products, or waste products. Material handling activities include the storage, loading and unloading, transportation, or conveyance of any raw material, intermediate product, final product or waste product.

(1) Qualification. To qualify for this exclusion, the operator of the discharge must:

(i) Provide a storm resistant shelter to protect industrial materials and activities from exposure to rain, snow, snow melt, and runoff;

(ii) Complete and sign (according to § 122.22) a certification that there are no discharges of storm water contaminated by exposure to industrial materials and activities from the entire facility, except as provided in paragraph (g)(2) of this section;

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(iii) Submit the signed certification to the NPDES permitting authority once every five years. As of December 21, 2020 all certifications submitted in compliance with this section must be submitted electronically by the owner or operator to the Director or initial recipient, as defined in 40 CFR 127.2(b), in compliance with this section and 40 CFR part 3 (including, in all cases, subpart D to part 3), § 122.22, and 40 CFR part 127. Part 127 is not intended to undo existing requirements for electronic reporting. Prior to this date, and independent of part 127, owners or operators may be required to report electronically if specified by a particular permit or if required to do so by state law.

(iv) Allow the Director to inspect the facility to determine compliance with the "no exposure" conditions;

(v) Allow the Director to make any "no exposure" inspection reports available to the public upon request; and

(vi) For facilities that discharge through an MS4, upon request, submit a copy of the certification of "no exposure" to the MS4 operator, as well as allow inspection and public reporting by the MS4 operator.

(2) Industrial materials and activities not requiring storm resistant shelter. To qualify for this exclusion, storm resistant shelter is not required for:

(i) Drums, barrels, tanks, and similar containers that are tightly sealed, provided those containers are not deteriorated and do not leak ("Sealed" means banded or otherwise secured and without operational taps or valves);

(ii) Adequately maintained vehicles used in material handling; and

(iii) Final products, other than products that would be mobilized in storm water discharge (e.g., rock salt).

(3) Limitations.

(i) Storm water discharges from construction activities identified in paragraphs (b)(14)(x) and (b)(15) are not eligible for this conditional exclusion.

(ii) This conditional exclusion from the requirement for an NPDES permit is available on a facility-wide basis only, not for individual outfalls. If a facility has some discharges of storm water that would otherwise be "no exposure" discharges, individual permit requirements should be adjusted accordingly.

(iii) If circumstances change and industrial materials or activities become exposed to rain, snow, snow melt, and/or

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runoff, the conditions for this exclusion no longer apply. In such cases, the discharge becomes subject to enforcement for un-permitted discharge. Any conditionally exempt discharger who anticipates changes in circumstances should apply for and obtain permit authorization prior to the change of circumstances.

(iv) Notwithstanding the provisions of this paragraph, the NPDES permitting authority retains the authority to require permit authorization (and deny this exclusion) upon making a determination that the discharge causes, has a reasonable potential to cause, or contributes to an instream excursion above an applicable water quality standard, including designated uses.

(4) Certification. The no exposure certification must require the submission of the following information, at a minimum, to aid the NPDES permitting authority in determining if the facility qualifies for the no exposure exclusion:

(i) The legal name, address and phone number of the discharger (see § 122.21(b));

(ii) The facility name and address, the county name and the latitude and longitude where the facility is located;

(iii) The certification must indicate that none of the following materials or activities are, or will be in the foreseeable future, exposed to precipitation:

(A) Using, storing or cleaning industrial machinery or equipment, and areas where residuals from using, storing or cleaning industrial machinery or equipment remain and are exposed to storm water;

(B) Materials or residuals on the ground or in storm water inlets from spills/leaks;

(C) Materials or products from past industrial activity;

(D) Material handling equipment (except adequately maintained vehicles);

(E) Materials or products during loading/unloading or transporting activities;

(F) Materials or products stored outdoors (except final products intended for outside use, e.g., new cars, where exposure to storm water does not result in the discharge of pollutants);

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(G) Materials contained in open, deteriorated or leaking storage drums, barrels, tanks, and similar containers;

(H) Materials or products handled/stored on roads or railways owned or maintained by the discharger;

(I) Waste material (except waste in covered, non-leaking containers, e.g., dumpsters);

(J) Application or disposal of process wastewater (unless otherwise permitted); and

(K) Particulate matter or visible deposits of residuals from roof stacks/vents not otherwise regulated, i.e., under an air quality control permit, and evident in the storm water outflow;

(iv) All "no exposure" certifications must include the following certification statement, and be signed in accordance with the signatory requirements of § 122.22: "I certify under penalty of law that I have read and understand the eligibility requirements for claiming a condition of "no exposure" and obtaining an exclusion from NPDES storm water permitting; and that there are no discharges of storm water contaminated by exposure to industrial activities or materials from the industrial facility identified in this document (except as allowed under paragraph (g)(2)) of this section. I understand that I am obligated to submit a no exposure certification form once every five years to the NPDES permitting authority and, if requested, to the operator of the local MS4 into which this facility discharges (where applicable). I understand that I must allow the NPDES permitting authority, or MS4 operator where the discharge is into the local MS4, to perform inspections to confirm the condition of no exposure and to make such inspection reports publicly available upon request. I understand that I must obtain coverage under an NPDES permit prior to any point source discharge of storm water from the facility. I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gathered and evaluated the information submitted. Based upon my inquiry of the person or persons who manage the system, or those persons directly involved in gathering the information, the information submitted is to the best of my knowledge and belief true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

Credits

[54 FR 255, Jan. 4, 1989; 55 FR 48063, Nov. 16, 1990; 56 FR 12100. March 21, 1991; 56 FR 56554, Nov. 5, 1991; 57 FR 11412, April 2, 1992; 57 FR 60447, Dec. 18, 1992; 60 FR 17956, April 7, 1995; 60 FR 40235, Aug. 7, 1995; 64 FR 68838, Dec. 8, 1999; 65 FR 30907, May 15, 2000; 68 FR 11329, March 10, 2003; 70 FR 11563, March 9, 2005; 71 FR 33639, June 12, 2006; 77 FR 72974, Dec. 7, 2012; 80 FR 64096, Oct. 22, 2015]

SOURCE: 45 FR 33418, May 19, 1980, as amended at 48 FR 14153, Apr. 1, 1983, unless otherwise noted.

AUTHORITY: The Clean Water Act, 33 U.S.C. 1251 et seq.

Notes of Decisions (78)

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Current through May 24, 2018; 83 FR 24044.

End of Document

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DECLARATION OF SERVICE BY EMAIL

I, the undersigned, declare as follows:

I am a resident of the County of Sacramento and I am over the age of 18 years, and not a party to the within action. My place of employment is 980 Ninth Street, Suite 300, Sacramento, California 95814.

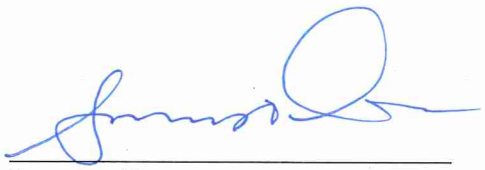
On May 30, 2018, I served the:

- **Claimant's Rebuttal Comments filed May 29, 2018**

  California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, 16-TC-03
  City of Union City, Claimant

By making it available on the Commission's website and providing notice of how to locate it to the email addresses provided on the attached mailing list.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this declaration was executed on May 30, 2018 at Sacramento, California.



Lorenzo Duran
Commission on State Mandates
980 Ninth Street, Suite 300
Sacramento, CA 95814
(916) 323-3562

COMMISSION ON STATE MANDATES

Mailing List

Last Updated: 5/15/18

Claim Number: 16-TC-03

Matter: California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049

Claimant: City of Union City

TO ALL PARTIES, INTERESTED PARTIES, AND INTERESTED PERSONS:

Each commission mailing list is continuously updated as requests are received to include or remove any party or person on the mailing list. A current mailing list is provided with commission correspondence, and a copy of the current mailing list is available upon request at any time. Except as provided otherwise by commission rule, when a party or interested party files any written material with the commission concerning a claim, it shall simultaneously serve a copy of the written material on the parties and interested parties to the claim identified on the mailing list provided by the commission. (Cal. Code Regs., tit. 2, § 1181.3.)

Antonio Acosta, City Manager, *City of Union City*
34009 Alvarado-Niles Road, Union City, CA 94587
Phone: (510) 675-5351
tonya@unioncity.org

Marni Ajello, Attorney, Office of Chief Counsel, *State Water Resources Control Board*
San Francisco Bay Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 327-4439
marnie.ajello@waterboards.ca.gov

Socorro Aquino, *State Controller's Office*
Division of Audits, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-7522
SAquino@sco.ca.gov

Tamarin Austin, Attorney, Office of Chief Counsel, *State Water Resources Control Board*
San Francisco Bay Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 341-5171
Tamarin.Austin@waterboards.ca.gov

Harmeet Barkschat, *Mandate Resource Services,LLC*
5325 Elkhorn Blvd. #307, Sacramento, CA 95842
Phone: (916) 727-1350
harmeet@calsdrc.com

Lacey Baysinger, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816

Phone: (916) 324-0254
lbaysinger@sco.ca.gov

Cindy Black, City Clerk, *City of St. Helena*
1480 Main Street, St. Helena, CA 94574
Phone: (707) 968-2742
ctzafopoulos@cityofsthelena.org

Dale Bowyer, Section Leader, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2323
Dale.Bowyer@waterboards.ca.gov

Allan Burdick,
7525 Myrtle Vista Avenue, Sacramento, CA 95831
Phone: (916) 203-3608
allanburdick@gmail.com

J. Bradley Burgess, *MGT of America*
895 La Sierra Drive, Sacramento, CA 95864
Phone: (916)595-2646
Bburgess@mgtamer.com

Evelyn Calderon-Yee, Bureau Chief, *State Controller's Office*
Local Government Programs and Services, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 324-5919
ECalderonYee@sco.ca.gov

Gwendolyn Carlos, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 323-0706
gcarlos@sco.ca.gov

Daniel Carrigg, Deputy Executive Director/Legislative Director, *League of California Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8222
Dcarrigg@cacities.org

Annette Chinn, *Cost Recovery Systems,Inc.*
705-2 East Bidwell Street, #294, Folsom, CA 95630
Phone: (916) 939-7901
achinncrs@aol.com

Carolyn Chu, Senior Fiscal and Policy Analyst, *Legal Analyst's Office*
925 L Street, Sacramento, CA 95814
Phone: (916) 319-8326
Carolyn.Chu@lao.ca.gov

Michael Coleman, *Coleman Advisory Services*
2217 Isle Royale Lane, Davis, CA 95616
Phone: (530) 758-3952
coleman@muni1.com

Anita Dagan, Manager, Local Reimbursement Section, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 324-4112
Adagan@sco.ca.gov

Marieta Delfin, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-4320
mdelfin@sco.ca.gov

Donna Ferebee, *Department of Finance*
915 L Street, Suite 1280, Sacramento, CA 95814
Phone: (916) 445-3274
donna.ferebee@dof.ca.gov

Susan Geanacou, *Department of Finance*
915 L Street, Suite 1280, Sacramento, CA 95814
Phone: (916) 445-3274
susan.geanacou@dof.ca.gov

Dillon Gibbons, Legislative Representative, *California Special Districts Association*
1112 I Street Bridge, Suite 200, Sacramento, CA 95814
Phone: (916) 442-7887
dillong@csda.net

Catherine George Hagan, Senior Staff Counsel, *State Water Resources Control Board*
c/o San Diego Regional Water Quality Control Board, 2375 Northside Drive, Suite 100, San Diego, CA 92108
Phone: (619) 521-3012
catherine.hagan@waterboards.ca.gov

Heather Halsey, Executive Director, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
heather.halsey@csm.ca.gov

Sunny Han, Project Manager, *City of Huntington Beach*
2000 Main Street, Huntington Beach, CA 92648
Phone: (714) 536-5907
Sunny.han@surfcity-hb.org

Chris Hill, Principal Program Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, Sacramento, CA 95814
Phone: (916) 445-3274
Chris.Hill@dof.ca.gov

Justyn Howard, Program Budget Manager, *Department of Finance*
915 L Street, Sacramento, CA 95814
Phone: (916) 445-1546
justyn.howard@dof.ca.gov

Edward Jewik, *County of Los Angeles*
Auditor-Controller's Office, 500 W. Temple Street, Room 603, Los Angeles, CA 90012
Phone: (213) 974-8564
ejewik@auditor.lacounty.gov

Jill Kanemasu, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-9891
jkanemasu@sco.ca.gov

Anita Kerezsi, *AK & Company*
3531 Kersey Lane, Sacramento, CA 95864

Phone: (916) 972-1666
akcompanysb90@gmail.com

Lisa Kurokawa, Bureau Chief for Audits, *State Controller's Office*
Compliance Audits Bureau, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 327-3138
lkurokawa@sco.ca.gov

Michael Lauffer, Chief Counsel, *State Water Resources Control Board*
1001 I Street, 22nd Floor, Sacramento, CA 95814-2828
Phone: (916) 341-5183
michael.lauffer@waterboards.ca.gov

Keith Lichten, Division Chief, *San Francisco Bay Regional Water Quality Control Board*
Watershed Management, 1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2380
klichten@waterboards.ca.gov

Selina Louie, Water Resource Control Engineer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2383
SLouie@waterboards.ca.gov

Jill Magee, Program Analyst, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
Jill.Magee@csm.ca.gov

Hortensia Mato, *City of Newport Beach*
100 Civic Center Drive, Newport Beach, CA 92660
Phone: (949) 644-3000
hmato@newportbeachca.gov

Michelle Mendoza, *MAXIMUS*
17310 Red Hill Avenue, Suite 340, Irvine, CA 95403
Phone: (949) 440-0845
michellemendoza@maximus.com

Meredith Miller, Director of SB90 Services, *MAXIMUS*
3130 Kilgore Road, Suite 400, Rancho Cordova, CA 95670
Phone: (972) 490-9990
meredithcmiller@maximus.com

Lourdes Morales, Senior Fiscal and Policy Analyst, *Legal Analyst's Office*
925 L Street, Sacramento, CA 95814
Phone: (916) 319-8320
Lourdes.Morales@LAO.CA.GOV

Thomas Mumley, Assistant Executive Officer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2395
thomas.mumley@waterboards.ca.gov

Gregory Newmark, *Meyers,Nave,Riback,Silver & Wilson*
Claimant Representative
555 12th Street, Suite 1500, Oakland, CA 94607

Phone: (510) 808-2000
gnewmark@meyersnave.com

Andy Nichols, *Nichols Consulting*
1857 44th Street, Sacramento, CA 95819
Phone: (916) 455-3939
andy@nichols-consulting.com

Arthur Palkowitz, *Artiano Shinoff*
2488 Historic Decatur Road, Suite 200, San Diego, CA 92106
Phone: (619) 232-3122
apalkowitz@as7law.com

Steven Pavlov, Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, Sacramento, CA 95814
Phone: (916) 445-3274
Steven.Pavlov@dof.ca.gov

Johnnie Pina, Legislative Policy Analyst, *League of Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8214
jpina@cacities.org

Jai Prasad, *County of San Bernardino*
Office of Auditor-Controller, 222 West Hospitality Lane, 4th Floor, San Bernardino, CA 92415-0018
Phone: (909) 386-8854
jai.prasad@atc.sbcounty.gov

Mark Rewolinski, *MAXIMUS*
808 Moorefield Park Drive, Suite 205, Richmond, VA 23236
Phone: (949) 440-0845
markrewolinski@maximus.com

Camille Shelton, Chief Legal Counsel, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
camille.shelton@csm.ca.gov

Carla Shelton, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
carla.shelton@csm.ca.gov

Eileen Sobeck, Executive Director, *State Water Resources Control Board*
1001 I Street, 22nd Floor, Sacramento, CA 95814-2828
Phone: (916) 341-5183
Eileen.Sobeck@waterboards.ca.gov

Jim Spano, Chief, Mandated Cost Audits Bureau, *State Controller's Office*
Division of Audits, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 323-5849
jspano@sco.ca.gov

Dennis Speciale, *State Controller's Office*
Division of Accounting and Reporting, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 324-0254
DSpeciale@sco.ca.gov

Joe Stephenshaw, Director, *Senate Budget & Fiscal Review Committee*

California State Senate, State Capitol Room 5019, Sacramento, CA 95814
Phone: (916) 651-4103
Joe.Stephenshaw@sen.ca.gov

Derk Symons, Staff Finance Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, Sacramento, CA 95814
Phone: (916) 445-3274
Derk.Symons@dof.ca.gov

Jolene Tollenaar, *MGT of America*
2251 Harvard Street, Suite 134, Sacramento, CA 95815
Phone: (916) 243-8913
jolenetollenaar@gmail.com

Evelyn Tseng, *City of Newport Beach*
100 Civic Center Drive, Newport Beach, CA 92660
Phone: (949) 644-3127
etseng@newportbeachca.gov

Brian Uhler, Principal Fiscal & Policy Analyst, *Legislative Analyst's Office*
925 L Street, Suite 1000, Sacramento, CA 95814
Phone: (916) 319-8328
Brian.Uhler@LAO.CA.GOV

Emel Wadhwani, Senior Staff Counsel, *State Water Resources Control Board*
Office of Chief Counsel, 1001 I Street, Sacramento, CA 95814
Phone: (916) 322-3622
emel.wadhwani@waterboards.ca.gov

Renee Wellhouse, *David Wellhouse & Associates, Inc.*
3609 Bradshaw Road, H-382, Sacramento, CA 95927
Phone: (916) 797-4883
dwa-renee@surewest.net

Jennifer Whiting, Assistant Legislative Director, *League of California Cities*
1400 K Street, Suite 400, Sacramento , CA 95814
Phone: (916) 658-8249
jwhiting@cacities.org

Patrick Whitnell, General Counsel, *League of California Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8281
pwhitnell@cacities.org

Bruce Wolfe, Executive Officer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2314
bwolfe@waterboards.ca.gov

Hasmik Yaghobyan, *County of Los Angeles*
Auditor-Controller's Office, 500 W. Temple Street, Room 603, Los Angeles, CA 90012
Phone: (213) 974-9653
hyaghobyan@auditor.lacounty.gov

Exhibit E

STATE of CALIFORNIA
COMMISSION ON STATE MANDATES

December 23, 2025

Mr. Chris Hill
Department of Finance
915 L Street, 8th Floor
Sacramento, CA 95814

Mr. Gregory Newmark
Duane Morris, LLP
865 South Figueroa Street, Suite 3100
Los Angeles, CA 90017-5450

And Parties, Interested Parties, and Interested Persons (See Mailing List)

Re: Draft Proposed Decision, Schedule for Comments, and Notice of Hearing
California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, 16-TC-03
California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, Provisions C.3.j, C.8., C.10.a., C.10.b., C.11.a., C.11.b., C.11.c., C.12.a., C.12.c., C.12.d., and C.12.e, Adopted on November 19, 2015 and Effective on January 1, 2016
City of Union City, Claimant

Dear Mr. Hill and Mr. Newmark:

The Draft Proposed Decision for the above-captioned matter is enclosed for your review and comment.

Written Comments: Written comments may be filed on the Draft Proposed Decision no later than **January 13, 2026**. Please note that all representations of fact submitted to the Commission must be signed under penalty of perjury by persons who are authorized and competent to do so and must be based upon the declarant's personal knowledge, information, or belief. (Cal. Code Regs., tit. 2, § 1187.5.) Hearsay evidence may be used for the purpose of supplementing or explaining other evidence but shall not be sufficient in itself to support a finding unless it would be admissible over an objection in civil actions. (Cal. Code Regs., tit. 2, § 1187.5.) The Commission's ultimate findings of fact must be supported by substantial evidence in the record.[1]

You are advised that comments filed with the Commission are required to be electronically filed (e-filed) in an unlocked legible and searchable PDF file, using the Commission's Dropbox. (Cal. Code Regs., tit. 2, § 1181.3(d)(2) and (f), effective January 1, 2026.) Refer to https://www.csm.ca.gov/dropbox.shtml on the Commission's website for electronic filing instructions. If e-filing would cause the filer undue hardship or significant prejudice, filing may occur by first class mail, overnight delivery or personal service only upon approval of a written request to the executive director. (Cal. Code Regs., tit. 2, § 1181.3(j), effective January 1, 2026.)

If you would like to request an extension of time to file comments, please refer to section 1187.9(a) of the Commission's regulations.

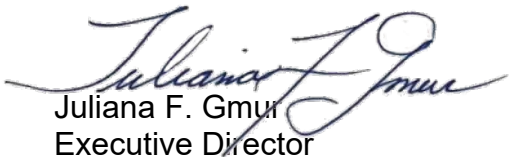
[1] Government Code section 17559(b), which provides that a claimant or the state may commence a proceeding in accordance with the provisions of section 1094.5 of the Code of Civil Procedure to set aside a decision of the Commission on the ground that the Commission's decision is not supported by substantial evidence in the record.

Hearing: This matter is set for hearing on **Friday, April 10, 2026** at 10:00 a.m. The Proposed Decision will be issued on or about March 27, 2026.

If you plan to address the Commission on this item, please notify the Commission Office not later than noon on the Tuesday prior to the hearing, **April 7, 2026.** Please also include the names of the people who will be speaking for inclusion on the witness list and the names and emails addresses of the people who will be speaking both in person and remotely to receive a hearing panelist link in Zoom. When calling or emailing, please identify the item you want to testify on and the entity you represent. The Commission Chairperson reserves the right to impose time limits on presentations as may be necessary to complete the agenda.

If you would like to request postponement of the hearing, please refer to section 1187.9(b) of the Commission's regulations.

Very truly yours,



Juliana F. Gmur
Executive Director

Hearing Date: April 10, 2026

ITEM ___

TEST CLAIM

DRAFT PROPOSED DECISION

California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, Provisions C.3.j., C.8., C.10.a., C.10.b., C.11.a., C.11.b., C.11.c., C.12.a., C.12.c., C.12.d., and C.12.e., Adopted on November 19, 2015 and Effective on January 1, 2016

16-TC-03

City of Union City, Claimant

EXECUTIVE SUMMARY

Overview

This Test Claim alleges reimbursable state mandated activities arising from Order R2-2015-0049, effective January 1, 2016.[1] The claimant has pled the following provisions from Order R2-2015-0049, alleging these provisions impose a reimbursable state-mandated program within the meaning of article XIII B, section 6 of the California Constitution:

- Provision C.8., which the claimant included "out of an abundance of caution" as it sought reimbursement for the continued costs of monitoring programs that were originally imposed by the prior permit (Order R2-2009-0074) and which were addressed by the prior Test Claims in this series (*California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2009-0074*, 10-TC-02, 10-TC-03, and 10-TC-05).[2]
- Provisions C.10.a.i., ii., and iii. and C.10.b.i. and ii., addressing the reduction of trash loads.[3]
- The following provisions which implement previously adopted TMDLs for mercury and PCBs:

[1] Exhibit A, Test Claim, page 4.

[2] Exhibit A, Test Claim, pages 30-31 (Test Claim Narrative).

[3] Exhibit A, Test Claim, pages 476-478 (test claim permit, Provisions C.10.a.i.-iii.) and 478-479 (test claim permit, Provisions C.10.b.i.-ii.).

- Provision C.3.j. requires the permittees to develop a Green Infrastructure Plan, adopt policies and ordinances, conduct outreach, and report progress on the planning.[4]
- Provisions C.11.c. and C.12.c. require the permittees to implement Green Infrastructure projects to achieve the load reductions for mercury and PCBs, in accordance with the TMDLs, prepare a reasonable assurance analysis of future mercury and PCBs load reductions, which demonstrate how Green Infrastructure projects will achieve the total load reduction by 2040, and to report on Green Infrastructure implementation.[5]
- Provision C.11.a. requires the permittees to implement mercury source and treatment control measures and pollution prevention strategies to reduce loads throughout the permit area and submit various reports.[6]
- Provision C.11.b. requires permittees to develop and implement an assessment methodology and data collection program to quantify mercury loads reduced through implementation of any and all pollution prevention, source control and treatment control efforts required by the test claim permit's provisions or load reductions achieved through other relevant efforts.[7]
- Provision C.12.a. requires the permittees to implement PCBs source and treatment control measures and pollution prevention strategies to reduce loads throughout the permit area, develop and implement an assessment methodology and data collection program to quantify in a technically sound manner mercury and PCBs loads reduced; and submit various reports.[8]
- Provision C.12.d. requires the permittees to prepare a plan and schedule of future PCBs control measure implementation and reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030.[9]

[4] Exhibit A, Test Claim, page 422-427 (test claim permit, Provision C.3.j.).

[5] Exhibit A, Test Claim, pages 488-490 (test claim permit, Provision C.11.c.) and 495-497 (test claim permit, Provision C.12.c.).

[6] Exhibit A, Test Claim, pages 486-487 (test claim permit, Provisions C.11.a.-b.) and 492-494 (test claim permit, Provisions C.12.a.-b.).

[7] Exhibit A, Test Claim, page 487-488 (test claim permit, Provision C.11.b.).

[8] Exhibit A, Test Claim, pages 492-495 (test claim permit, Provisions C.12.a.).

[9] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.).

- Provision C.12.e. requires permittees to evaluate the presence of PCBs in caulks and sealants used in storm drains or roadway infrastructure in public rights-of-way.[10]

For the reasons stated herein, Staff recommends that the Commission partially approve this Test Claim.

Procedural History

The claimant filed the Test Claim on June 30, 2017.[11] On October 10, 2017, The Department of Finance (Finance) filed comments on the Test Claim.[12] On November 7 and 16, 2017, the claimant and the Regional Board each requested extensions on the time to file comments, which were respectively granted and partially granted for good cause. On February 1, 2018, The Regional Board submitted late comments on the test claim, and filed the administrative record of the permit in eight parts.[13] On March 6 and April 19, 2018, the claimant filed two extensions of time to file rebuttal comments, which were granted for good cause. The claimant filed rebuttal comments on May 28, 2018.[14]

Commission staff issued the Draft Proposed Decision on December 23, 2025.[15]

Commission Responsibilities

Under article XIII B, section 6 of the California Constitution, local agencies and school districts are entitled to reimbursement for the costs of state-mandated new programs or higher levels of service. In order for local government to be eligible for reimbursement, one or more similarly situated local agencies or school districts must file a test claim with the Commission. "Test claim" means the first claim filed with the Commission alleging that a particular statue or executive order imposes costs mandated by the state. Test claims function similarly to class actions and all members of the class have the opportunity to participate in the test claim process and all are bound by the final decision of the Commission for purposes of that test claim.

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[10] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.).

[11] Exhibit A, Test Claim, page 4.

[12] Exhibit B, Finance's Comments on the Test Claim, page 1.

[13] Exhibit C, Regional Board's Late Comments on the Test Claim, page 1. Because of its enormous size, the administrative record cannot reasonably be included as an exhibit. Documents contained therein and cited in this document are being included as excerpts. However, the entirety of all eight parts are available on the Commission's website on the matter page for this Test Claim: https://csm.ca.gov/matters/16-TC-03.shtml.

[14] Exhibit D, Claimant's Rebuttal Comments, page 1.

[15] Exhibit E, Draft Proposed Decision.

The Commission is the quasi-judicial body vested with exclusive authority to adjudicate disputes over the existence of state-mandated programs within the meaning of article XIII B, section 6 of the California Constitution and not apply it as an "equitable remedy to cure the perceived unfairness resulting from political decisions on funding priorities."[16]

Claims

The following chart provides a brief summary of the claims and issues raised and staff's recommendation.

Issue	Description	Staff Recommendation
Was the test claim timely filed?	Government Code section 17551(c) provides that Test Claims "shall be filed not later than 12 months following the effective date of a statute or executive order, or within 12 months of incurring increased costs as a result of a statute or executive order, whichever is later."[17] The Commission's regulations effective at the time this claim was filed provided that "[f]or purposes of claiming based on the date of first incurring costs, 'within 12 months' means by June 30 of the fiscal year following the fiscal year in which increased costs were first incurred by the test claimant."[18]	Yes, the Test Claim was timely filed. The Test Claim was filed on June 30, 2017, more than a year after the effective date of the stormwater permit on January 1, 2016.[19] However, evidence shows that the earliest date when costs were first incurred as a result of the permit after its effective date was January 4, 2016.[20] Thus under the regulations at the time of filing, the claimant had until June 30, 2017 to file its claim. The Test Claim was filed on June 30, 2017, and is therefore timely.[21] Government Code section 17557(e) requires a test

[16] *County of Sonoma v. Commission on State Mandates* (2000) 84 Cal.App.4th 1264, 1281, citing *City of San Jose v. State of California* (1996) 45 Cal.App.4th 1802, 1817.

[17] Government Code section 17551(c) (Stats. 2007, ch. 329).

[18] California Code of Regulations, title 2, section 1183.1(c) (Register 2016, No. 38).

[19] Exhibit A, Test Claim, pages 4 (Written Narrative), 383 (test claim permit).

[20] Exhibit A, Test Claim, page 78 (Declaration of James Scanlin, Associate Environmental Compliance Specialist, Alameda County).

[21] Exhibit A, Test Claim, page 4.

Issue	Description	Staff Recommendation
		claim to be "submitted on or before June 30 following a fiscal year in order to establish eligibility for reimbursement for that fiscal year." Because the Test Claim was filed on June 30, 2017, the potential period of reimbursement under Government Code section 17557 begins on July 1, 2015. However, since the test claim permit has a later effective date, the potential period of reimbursement for this claim begins on the permit's effective date, or January 1, 2016.
Do the Provisions pled by the claimant impose a reimbursable state-mandated program within the meaning of article XIII B, section 6 of the California Constitution?	The purpose of article XIII B, section 6 is to prevent the state from forcing extra programs on local government each year in a manner that negates their careful budgeting of increased expenditures counted against the local government's annual spending limit and, thus, article XIII B, section 6 requires a showing that the test claim statute or executive order mandates *new* activities and associated costs compared to prior law, forcing them to spend their local proceeds of taxes.[22]	Partially approve. The test claim permit requires some new activities, when compared to prior law. Not all properly pleaded Provisions impose new state-mandated activities that result in a new program or higher level of service, however. Those activities are denied. Permittees have regulatory development fee authority as to some of the Provisions that are a new state-mandated activity that create a new program or higher level of service, namely those related to

[22] California Constitution, articles XIII B, sections 1, 8(a) and (b); *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56; *Lucia Mar Unified School Dist. v. Honig* (1988) 44 Cal.3d 830, 835; *Hayes v. Commission on State Mandates* (1992) 11

Issue	Description	Staff Recommendation
		developing and implementing a Green Infrastructure Plan under Provision C.3.j. These do not result in increased costs mandated by the state, as Permittees have fee authority sufficient as a matter of law pursuant to Government Code section 17556(d). For the remaining activities, these constitute state-mandated new programs or higher levels of service, and impose costs mandated by the state from December 1, 2009, through December 31, 2017. Beginning January 1, 2018, reimbursement is denied because there are no costs mandated by the state; claimants have fee authority sufficient as a matter of law to cover the costs of the mandated activities pursuant to Government Code section 17556(d).[23]

Cal.App.4th 1564, 1595; *County of Sonoma v. Commission on State Mandates* (2000) 84 Cal.App.4th 1264, 1283; *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 763; *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487 (Reimbursement is required only when "the costs in question can be recovered solely from tax revenues).

[23] Government Code sections 57350 and 57351 (SB 231); *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 194; *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 573-577.

Staff Analysis

The Test Claim was timely filed on June 30, 2017, with a potential period of reimbursement beginning on the permit's effective date of January 1, 2016.[24]

The Commission does not have authority to re-address the monitoring requirements in Provision C.8. The Commission addressed the monitoring requirements in Provision C.8. imposed by the prior permit in Test Claim *California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2009-0074*, 10-TC-02, 10-TC-03, and 10-TC-05, and issued a Decision on January 24, 2025.[25] The claimant has not alleged that this test claim permit requires any new activities for Provision C.8. when compared to the prior permit, and there are no allegations that the activities in Provision C.8. found to be state mandates under the prior permit have changed. The Commission's Decision in the prior Test Claim is a final binding decision, which cannot be disturbed unless litigated and directed by the court to be set aside or modified pursuant to Government Code section 17559(b) or if a request for a new test claim decision based on a subsequent change in law is filed pursuant to Government Code section 17570.[26]

Staff finds that the trash provisions are not new and do not mandate a new program or higher level of service. Provision C.10.a.i. requires permittees to reduce trash discharges to receiving waters from their 2009 levels according to a schedule that requires them to attain 70 percent reduction by July 1, 2017, and 80 percent reduction by July 1, 2019.[27] Provision C.10.a.ii. requires the implementation of "trash prevention and control actions, including full trash capture systems and other trash management actions, or combinations of actions, with trash discharge control equivalent to or better than full trash capture systems, to reduce trash to a Low trash generation rating or better," and to ensure that lands they do not own or operate but are plumbed directly to their storm drain system in a Very High, High, or Moderate trash generation area are either equipped with full trash capture systems or are managed with trash discharge control actions equivalent to or better than a full trash capture system.[28] Provision C.10.a.iii. requires permittees to install and maintain a mandatory minimum number of full trash capture systems, to treat runoff from an area equivalent to 30 percent of the retail/wholesale land area, as documented by the Association of Bay Area

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[24] Exhibit A, Test Claim, pages 4 (Written Narrative), 383 (test claim permit). See California Code of Regulations, title 2, section 1183.1(c) (Register 2016, No. 38); Government Code section 17557(e).

[25] See Commission on State Mandates, Test Claim Decision on *California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2009-0074*, 10-TC-02, 10-TC-03, 10-TC-05, adopted January 24, 2025, https://csm.ca.gov/matters/10-TC-01-02-03-05/doc68.pdf (accessed February 27, 2025).

[26] *California School Boards Assoc. v. State of California* (2009) 171 Cal.App.4th 1183, 1200.

[27] Exhibit A, Test Claim, page 476 (test claim permit, Provision C.10.a.i.).

[28] Exhibit A, Test Claim, page 477 (test claim permit, Provision C.10.a.ii.).

Governments, which drains into the storm drain system within their jurisdiction.[29] Provision C.10.b.i. provides specific standards for proper maintenance and documentation of permittees' full trash capture systems, and requires permittees to annually certify each of their full trash capture systems has been operated and maintained to meet those standards.[30] Provision C.10.b.ii. requires permittees to maintain documentation for all of their non-full trash capture system control actions, and to conduct visual on-land assessments of each area where they implemented non-full trash capture system control actions or a combination of actions other than full trash capture, to determine or verify the effectiveness of the action or combination of actions.[31]

The prior permit required the timely implementation of control measures to reduce trash loads by 40 percent by 2014, by 70 percent by 2017, and by 100 percent by 2022.[32] This is the same schedule for compliance as in the test claim permit and the requirement to reduce trash loads by 80 percent by 2019 is in line with the existing schedule and therefore is not new. The prior permit also had a specific provision requiring permittees to install a mandatory minimum number of full trash capture systems, which has not changed with this permit and is not new.[33] For the requirement to inspect and maintain full trash capture systems, federal law has always required permittees to properly operate and maintain their facilities and systems of treatment and control, and to maintain documentation.[34] This duty also applies for non-full trash capture system control actions, and the on-land visual assessments are a quality assurance procedure, which federal regulations require for proper operation and maintenance of these facilities and systems of treatment and control.[35] Though the claimant may complain that these provisions are more prescriptive, burdensome, and costly than what was required under the prior permit, the fact is they were always required to perform these activities; all the test claim permit has done is specify what proper performance entails.

Staff further finds the test claim permit imposes the following new requirements on the permittees when compared to prior law.

1. Green Infrastructure Plan (Provision C.3.j.i.-iv.):
    a. Green Infrastructure Plan (Provision C.3.j.i.)

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[29] Exhibit A, Test Claim, page 477 (test claim permit, Provision C.10.a.iii.).

[30] Exhibit A, Test Claim, page 478 (test claim permit, Provision C.10.b.i.).

[31] Exhibit A, Test Claim, page 479 (test claim permit, Provision C.10.b.ii.).

[32] Exhibit A, Test Claim, page 174 (prior permit, Provision C.10.).

[33] Exhibit A, Test Claim, page 175 (prior permit, Provision C.10.a.iii.).

[34] Code of Federal Regulations, title 40, sections 122.41(e), 122.41(j)(2), and 122.42(c)(4).

[35] Code of Federal Regulations, title 40, section 122.41(e).

- Prepare a framework or workplan describing specific tasks and timeframes for development for its Green Infrastructure Plan, to be approved by the Permittee's governing body, mayor, city manager, or county manager by June 30, 2017. This framework or workplan shall include a statement of purpose, tasks, and timeframe needed to complete all requirements in Provision C.3.j.i.2. (discussed below).[36]
- Prepare a Green Infrastructure Plan, subject to Executive Officer approval, that contains all the following:
    - A mechanism (such as SFEI's Green PlanIT tool) to prioritize and map areas for potential and planned projects, both public and private, on a drainage-area specific basis, for implementation by 2020, by 2030, and by 2040, that includes criteria for prioritization and outputs that can be incorporated into the Permittees' long-term planning and capital improvement processes.
    - Outcomes from the above-described mechanism, including but not limited to, the prioritization criteria, maps, lists, and all other information, as appropriate. Individual project-specific reviews do not need to be submitted with the Plan, but shall be made available for review upon request.
    - Targets for the amount of impervious surface from public and private projects within the Permittee's jurisdiction to be retrofitted by 2020, by 2030, and by 2040.
    - A process for tracking and mapping completed projects, public and private, and making the information publicly available online (i.e., SFEI's Green PlanIT tool).
    - General guidelines for overall streetscape and project design and construction so that projects have a unified complete design that implements the range of functions associated with the project.
    - Standard specifications, and as appropriate, typical design details and related information necessary for the Permittee to implement Green Infrastructure Projects in its jurisdiction, which shall be sufficient to address the different street and project types within a Permittee's jurisdiction, as defined by land use and transportation characteristics.
    - Requirements that projects be designed to meet the treatment and hydromodification sizing requirements outline in Provisions C.3.c. and C.3.d. For projects that are not subject to these requirements according to Provision C.3.b.ii. (non-regulated projects), Permittees may collectively propose a single approach for how to proceed when project constraints

[36] Exhibit A, Test Claim, page 423 (test claim permit, Provision C.3.j.i.1.).

preclude fully meeting the sizing requirements, which can include options for addressing specific issues or scenarios.

- A summary of planning documents the permittee has updated or otherwise modified to incorporate Green Infrastructure requirements (General Plans, Specific Plans, Complete Street Plans, Active Transportation Plans, Storm Drain Master Plans, Pavement Work Plans, Urban Forestry Plans, Flood Control/Management Plans, and any other plans that may impact the future alignment, configuration or design of impervious surfaces within the Permittee's jurisdiction). These modifications are to be completed by no later than the end of the permit term.
- A workplan identifying how the Permittee will ensure that Green Infrastructure and low impact development are appropriately included in future plans.
- A workplan to complete prioritized projects identified as part of an Alternative Compliance Program or Early Implementation as outlined in Provision C.3.e. or C.3.j.ii.
- An evaluation of prioritized project funding options including, but not limited to: Alternative Compliance funds; grant monies, including transportation project grants from federal, State, and local agencies; existing Permittee resources; new tax or other levies; and other sources of funds.[37]

- Adopt policies, ordinances, and/or other appropriate legal mechanisms to ensure implementation of the Green Infrastructure Plan in accordance with the requirements of this provision.[38]
- Conduct outreach and education in accordance with the following:
  - Conduct public outreach on the requirements of this provision, including outreach coordinated with adoption or revision of standard specifications and planning documents, and with the initiation and planning of infrastructure projects. Such outreach shall include general outreach and targeted outreach to and training for professionals involved in infrastructure planning and design.
  - Train appropriate staff, including planning, engineering, public works maintenance, finance, fire/life safety, and management staff on the requirements of this provision and methods of implementation.

[37] Exhibit A, Test Claim, pages 423-425 (test claim permit, Provision C.3.j.i.2.).

[38] Exhibit A, Test Claim, page 425 (test claim permit, Provision C.3.j.i.3.).

- Educate appropriate Permittee elected officials (e.g., mayors, city council members, county supervisors, district board members) on the requirements of this provision and methods of implementation.[39]

- Each permittee shall report on its planning progress as follows:
  - Submit documentation in the 2017 Annual Report that its framework or workplan for development of its Green Infrastructure Plan was approved by its governing body, mayor, city manager, or county manager by June 30, 2017.
  - Submit its completed Green Infrastructure Plan with the 2019 Annual Report.
  - Submit documentation of its legal mechanisms to ensure implementation of its Green Infrastructure Plan with the 2019 Annual Report.
  - Submit a summary of its outreach and education efforts in each Annual Report.[40]

b. Early Implementation – List of Green Infrastructure Projects (Provision C.3.j.ii.):

- *Except for a permittee's own public project (which does not mandate a new program or higher level of service)*, prepare and maintain a list of Green Infrastructure Projects, public and private, that are already planned for implementation during the permit term and infrastructure projects planned for implementation during the permit term that have potential for Green Infrastructure measures.[41]
- *Except for a permittee's own public project (which does not mandate a new program or higher level of service)*, submit the list with each Annual Report and a summary of planning or implementation status for each public Green Infrastructure Project and each private Green Infrastructure Project that is not also a Regulated Project as defined in Provision C.3.b.ii. Include a summary of how each public infrastructure project with Green Infrastructure potential will include Green Infrastructure measures to the maximum extent practicable during the permit term. For any public infrastructure project where implementation of Green Infrastructure measures is not practicable, submit a brief description of the project and the reasons Green Infrastructure measures were impracticable to implement.[42]

c. Participation in Processes to Promote Green Infrastructure (Provision C.3.j.iii.):

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[39] Exhibit A, Test Claim, pages 425-426 (test claim permit, Provision C.3.j.i.4.).

[40] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.i.5.).

[41] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.ii.1.).

[42] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.ii.2.).

- Either individually or collectively, track processes, assemble and submit information, and provide informational materials and presentations as needed to assist relevant regional, State, and federal agencies to plan, design, and fund incorporation of Green Infrastructure measures into local infrastructure projects, including transportation projects. Issues to be addressed include coordinating the timing of funding from different sources, changes to standard designs and design criteria, ranking and prioritizing projects for funding, and implementation of cooperative in-lieu programs.[43]
- In each Annual Report, report on the goals and outcomes during the reporting year of work undertaken to participate in processes to promote Green Infrastructure.[44]
- In the 2019 Annual Report, submit a plan and schedule for new and ongoing efforts to participate in processes to promote Green Infrastructure.[45]

d. Tracking and Reporting Progress (Provision C.3.j.iv.):

- Either individually or collectively, develop and implement regionally-consistent methods to track and report implementation of Green Infrastructure measures including treated area and connected and disconnected impervious area on both public and private parcels within their jurisdictions. The methods shall also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met.[46]
- In each Annual Report, report progress on development and implementation of the tracking methods.[47]
- In the 2019 Annual Report, submit the tracking methods and report implementation of Green Infrastructure measures including treated area, and connected and disconnected impervious area on both public and private parcels within their jurisdictions.[48]

2. Reasonable Assurance Analysis (Provisions C.11.c.ii.2., C.11.c.iii.1.-3., C.12.c.ii.2., and C.12.c.iii.1.-3.):

- Prepare a reasonable assurance analysis of future mercury and PCBs load reductions by doing the following:

[43] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.iii.1.).

[44] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.3.j.iii.2.).

[45] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.3.j.iii.3.).

[46] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.3.j.iv.1.).

[47] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.2.j.iv.2.).

[48] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.2.j.iv.3.).

- Quantify the relationship between areal extent of Green Infrastructure implementation and mercury and PCBs load reductions, taking into consideration the scale of contamination of the treated area as well as the pollutant removal effectiveness of likely green infrastructure strategies.[49]
- Estimate the amount and characteristics of land area that will be treated through Green Infrastructure by 2020, 2030, and 2040.[50]
- Estimate the amount of mercury/PCBs load reductions that will result from Green Infrastructure implementation by 2020, 2030, and 2040.[51]
- Quantitatively demonstrate that mercury load reductions of at least 10 kg/yr and PCBs load reductions of at least 3 kg/yr will be realized by 2040 through implementation of Green Infrastructure Projects.[52]
- Ensure that the calculation methods, models, model inputs, and modeling assumptions used to fulfill provisions C.11.c.ii.2.a.-d. and C.12.c.ii.2.a.-d. above have been validated through a peer review process.[53]

- Submit in the 2018 Annual Report as part of the reporting required for Provisions C.11.b.iii.2. and C.12.b.iii.3., the quantitative relationship between Green Infrastructure implementation and mercury and PCBs load reductions. This submittal shall include all data used and a full description of the models and model inputs relied on to establish this relationship.[54]
- Submit in the 2020 Annual Report an estimate of the amount and characteristics of land area that will be treated through Green Infrastructure implementation by 2020, 2030, and 2040. This submittal shall include all data used and a full description of the models and model inputs relied on to generate this estimate.[55]

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[49] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.a., C.12.c.ii.2.a.).

[50] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.b., C.12.c.ii.2.b.).

[51] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.c., C.12.c.ii.2.c.).

[52] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.ii.2.d., C.12.c.ii.2.d.).

[53] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.ii.2.e., C.12.c.ii.2.e.).

[54] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.1., C.12.c.iii.1.).

[55] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.2., C.12.c.iii.2.).

- Submit in the 2020 Annual Report a reasonable assurance analysis to demonstrate quantitatively that mercury load reductions of at least 10 kg/yr and PCBs load reductions of at least 3 kg/yr will be realized by 2040 through the implementation of Green Infrastructure Projects. This submittal shall include all data used and a full description of models and model inputs relied on to make the demonstration and documentation of peer review of the reasonable assurance analysis.[56]

3. Progress Report on List of Watersheds and Management Areas Where Mercury Control Measures are or will be Implemented (Provision C.11.a.iii.1.).
    - By April 1, 2016, report on progress towards developing a list of the watersheds and portions of watersheds (management areas) where mercury control measures are currently being implemented, and those in which control measures will be implemented during the permit term, as well as the monitoring data and other information used to select these watersheds and management areas.[57]
4. PCBs Reporting (Provisions C.12.a.iii.1. and C.12.a.iii.2.):
    - By April 1, 2016, report on progress towards developing a list of the watersheds and portions of watersheds (management areas) where PCBs control measures are currently being implemented, and those in which control measures will be implemented during the permit term, as well as the monitoring data and other information used to select these watersheds and management areas.[58]
    - In the 2016 Annual Report, include the following information:
        - A cumulative listing of all potentially PCB-contaminated sites permittees have discovered and referred to the Water Board to date, with a brief summary description of each site and where to obtain further information.
        - For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural controls or other relevant implementation milestones for structural controls and non-structural BMPs) and a schedule for milestone achievement.
        - Clear statements of the roles and responsibilities of each participating permittee for implementation of pollution prevention or control measures for PCBs.[59]

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[56] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.3., C.12.c.iii.3.).

[57] Exhibit A, Test Claim, page 486 (test claim permit, Provision C.11.a.iii.1.).

[58] Exhibit A, Test Claim, page 492 (test claim permit, Provision C.12.a.iii.1.).

[59] Exhibit A, Test Claim, pages 493-494 (test claim permit, Provision C.12.a.iii.2.).

5. Prepare PCBs control measures implementation plan, schedule, and reasonable assurance analysis to achieve the PCBs TMDL wasteload allocations by 2030 (Provision C.12.d.):
    - Prepare a PCBs control measures implementation plan, which must identify all technically and economically feasible PCBs control measures to be implemented (including green infrastructure projects).[60]
    - Include a schedule for PCBs control measure implementation according to which these technically and economically feasible PCBs control measures will be fully implemented by 2030.[61]
    - Provide an evaluation and quantification of the PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.[62]
    - Prepare a reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030.[63]
    - Submit the plan and schedule required by Provision C.12.d. in the 2020 Annual Report.[64]
6. Evaluate the presence of PCBs in caulks/sealants in storm drain or roadway infrastructure in public rights-of-way (Provision C.12.e.):
    - Collect at least 20 samples from throughout the permit-area of the caulks and sealants used in storm drains or roadway infrastructure in public rights-of-way.[65]
    - Analyze the samples taken for PCBs in such a way that is able to detect a minimum PCB concentration of 200 parts per billion.[66]
    - Report on the results of this investigation, including all data gathered, no later than the 2018 Annual Report.[67]

[60] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.1.).

[61] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.2.).

[62] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.3.).

[63] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.i.).

[64] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.iii.).

[65] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.ii.).

[66] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.ii.).

[67] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.iii.).

The remaining requirements alleged by the claimant are either not new, not mandated by the state, or are not a new program or higher level of service.

Finally, staff finds that the new state-mandated activities result in costs mandated by the state for some of the activities based on the following findings:

1. There is substantial evidence in the record that permittees incurred costs exceeding $1,000 and used proceeds of taxes to comply with the test claim permit.
2. Pursuant to Government Code section 17556(d), permittees have regulatory fee authority sufficient as a matter of law to fund the new state-mandated activities related to developing and implementing the Green Infrastructure Plan (Provision C.3.j.i.-iv.), and thus, there are no costs mandated by the state for these activities.
3. The Permittees have constitutional and statutory authority to charge property-related fees for the reasonable assurance analysis of future mercury and PCBs load reductions (C.11.c.ii.2., C.11.c.iii.1.-3., C.12.c.ii.2., and C.12.c.iii.1.-3.); required mercury progress report on list of watersheds and management areas where control measures are or will be implemented (C.11.a.iii.); PCBs reporting (C.12.a.iii.1. and 2.); PCBs control measures implementation plan (C.12.d.); and PCBs caulk and sealant testing (C.12.e.). However, from January 1, 2016 (the beginning date of the potential period of reimbursement) to December 31, 2017, these fees are subject to the voter approval requirement in article XIII D, section 6(c), and therefore fee authority is not sufficient as a matter of law.[68] Under these limited circumstances, Government Code section 17556(d) does not apply, and there are costs mandated by the state.[69] Any fee revenues received must be identified as offsetting revenue. In addition, reimbursement for this mandate from any source, including but not limited to, service fees collected, federal funds, other state funds, and other funds that are not a claimant's local proceeds of taxes shall be identified and deducted from this claim.

   On or after January 1, 2018, there are no costs mandated by the state to comply with these activities because the claimants have constitutional and statutory authority to charge property-related fees for these costs subject only to the voter protest provisions of article XIII D, which is sufficient as a matter of law to cover

[68] See *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351, and *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 579-581.

[69] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 579-581; Government Code sections 57350 and 57351 (SB 231, eff. January 1, 2018, which overturned *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351); *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 195.

the costs of the mandated activities within the meaning of Government Code section 17556(d).[70]

Based on *Paradise Irrigation District* case and the Legislature's enactment of Government Code sections 57350 and 57351 (which overturned *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351), there are no costs mandated by the state on or after January 1, 2018, to comply with these activities, because claimants have constitutional and statutory authority to charge property-related fees for these costs subject only to the voter protest provisions of article XIII D, which is sufficient as a matter of law to cover the costs of the mandated activities within the meaning of Government Code section 17556(d).

Conclusion

Staff recommends the Commission partially approve this Test Claim and find the reasonable assurance analysis of future mercury and PCBs load reductions (C.11.c.ii.2., C.11.c.iii.1.-3., C.12.c.ii.2., and C.12.c.iii.1.-3.); required mercury progress report on list of watersheds and management areas where control measures are or will be implemented (C.11.a.iii.); PCBs reporting (C.12.a.iii.1. and 2.); PCBs control measures implementation plan (C.12.d.); and PCBs caulk and sealant testing (C.12.e.) impose a reimbursable state-mandated program from January 1, 2016, to December 31, 2017 only.

In addition, reimbursement for these mandated activities from any source, including but not limited to, state and federal funds, any service charge, fees, or assessments to offset all or part of the costs of this program, and any other funds that are not the claimant's proceeds of taxes that are used to pay for the mandated activities, shall be identified and deducted from any claim submitted for reimbursement.

All other sections, activities, and costs pled in the Test Claim are denied.

Staff Recommendation

Staff recommends that the Commission adopt the Proposed Decision to partially approve the Test Claim and authorize staff to make any technical, non-substantive changes to the Proposed Decision following the hearing.

[70] See *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, and Government Code sections 57350 and 57351 (which overturned *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351).

BEFORE THE

COMMISSION ON STATE MANDATES

STATE OF CALIFORNIA

IN RE TEST CLAIM California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, Provisions C.3.j., C.8., C.10.a., C.10.b., C.11.a., C.11.b., C.11.c., C.12.a., C.12.c., C.12.d., and C.12.e., Adopted on November 19, 2015, and Effective on January 1, 2016 Filed on June 30, 2017 City of Union City, Claimant	Case No.: 16-TC-03 *California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049* DECISION PURSUANT TO GOVERNMENT CODE SECTION 17500 ET SEQ.; CALIFORNIA CODE OF REGULATIONS, TITLE 2, DIVISION 2, CHAPTER 2.5, ARTICLE 7. (*Adopted April 10, 2026*)

DECISION

The Commission on State Mandates (Commission) heard and decided this Test Claim during a regularly scheduled hearing on April 10, 2026. [Witness list will be included in the adopted Decision.]

The law applicable to the Commission's determination of a reimbursable state-mandated program is article XIII B, section 6 of the California Constitution, Government Code sections 17500 et seq., and related case law.

The Commission [adopted/modified] the Proposed Decision to [approve/partially approve/deny] the Test Claim by a vote of [vote will be included in the adopted Decision], as follows:

Member	**Vote**
Lee Adams, County Supervisor	
Deborah Gallegos, Representative of the State Controller, Vice Chairperson	
Karen Greene Ross, Public Member	
Renee Nash, School District Board Member	
William Pahland, Representative of the State Treasurer	
Michele Perrault, Representative of the Director of the Department of Finance, Chairperson	
Alexander Powell, Representative of the Director of the Governor's Office of Land Use and Climate Innovation	

Summary of the Findings

This Test Claim alleges reimbursable state mandated activities arising from Order R2-2015-0049, adopted by the San Francisco Bay Regional Water Quality Control Board effective January 1, 2016.[71] The claimant has pled the following provisions from Order R2-2015-0049, alleging these provisions impose a reimbursable state-mandated program within the meaning of article XIII B, section 6 of the California Constitution:

- Provision C.8., which the claimant included "out of an abundance of caution" as it sought reimbursement for the continued costs of monitoring programs that were originally imposed by the prior permit and which were addressed by the prior Test Claims in this series (*California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2009-0074*, 10-TC-02, 10-TC-03, and 10-TC-05).[72]
- Provisions C.10.a.i., ii., and iii. and C.10.b.i. and ii., addressing the reduction of trash loads.[73]
- The following provisions which implement previously adopted TMDLs for mercury and PCBs:
    - Provision C.3.j. requires the permittees to develop a Green Infrastructure Plan, adopt policies and ordinances, conduct outreach, and report progress on the planning.[74]
    - Provisions C.11.c. and C.12.c. require the permittees to implement Green Infrastructure projects to achieve the load reductions for mercury and PCBs, in accordance with the TMDLs, prepare a reasonable assurance analysis of future mercury and PCBs load reductions, which demonstrate how Green Infrastructure projects will achieve the total load reduction by 2040, and to report on Green Infrastructure implementation.[75]
    - Provision C.11.a. requires the permittees to implement mercury source and treatment control measures and pollution prevention strategies to reduce loads throughout the permit area and submit various reports.[76]
    - Provision C.11.b. requires permittees to develop and implement an assessment methodology and data collection program to quantify mercury

[71] Exhibit A, Test Claim, page 4.

[72] Exhibit A, Test Claim, pages 30-31 (Written Narrative).

[73] Exhibit A, Test Claim, pages 476-478 (test claim permit, Provisions C.10.a.i.-iii.) and 478-479 (Test Claim Permit, Provisions C.10.b.i.-ii.).

[74] Exhibit A, Test Claim, pages 422-427 (test claim permit, Provision C.3.j.).

[75] Exhibit A, Test Claim, pages 488-490 (test claim permit, Provision C.11.c.) and 495-497 (Test Claim Permit, Provision C.12.c.).

[76] Exhibit A, Test Claim, pages 486-487 (test claim permit, Provisions C.11.a.).

loads reduced through implementation of any and all pollution prevention, source control and treatment control efforts required by the test claim permit's provisions or load reductions achieved through other relevant efforts.[77]

- Provision C.12.a. requires the permittees to implement PCBs source and treatment control measures and pollution prevention strategies to reduce loads throughout the permit area, develop and implement an assessment methodology and data collection program to quantify in a technically sound manner mercury and PCBs loads reduced; and submit various reports.[78]
- Provision C.12.d. requires the permittees to prepare a plan and schedule of future PCBs control measure implementation and reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030.[79]
- Provision C.12.e. requires permittees to evaluate the presence of PCBs in caulks and sealants used in storm drains or roadway infrastructure in public rights-of-way.[80]

The Test Claim was timely filed on June 30, 2017, with a potential period of reimbursement beginning on the permit's effective date of January 1, 2016.[81]

The Commission does not have the authority to re-address the monitoring requirements in Provision C.8. The Commission addressed the monitoring requirements in Provision C.8. imposed by the prior permit in Test Claim *California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2009-0074*, 10-TC-02, 10-TC-03, and 10-TC-05, and issued a Decision on January 24, 2025.[82] The claimant has not alleged that this test claim permit requires any new activities for Provision C.8. when compared to the prior permit, and there are no allegations that the activities in Provision C.8. found to be state mandates under the prior permit have changed. The Commission's Decision on the prior Test Claim is a final, binding decision, which cannot be disturbed unless

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[77] Exhibit A, Test Claim, page 487-488 (test claim permit, Provision C.11.b.).

[78] Exhibit A, Test Claim, pages 492-495 (test claim permit, Provision C.12.a.).

[79] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.).

[80] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.).

[81] Exhibit A, Test Claim, pages 4 (Written Narrative), 383 (test claim permit). See California Code of Regulations, title 2, section 1183.1(c) (Register 2016, No. 38); Government Code section 17557(e).

[82] See Commission on State Mandates, Test Claim Decision on *California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2009-0074,* 10-TC-02, 10-TC-03, 10-TC-05, adopted January 24, 2025, https://csm.ca.gov/matters/10-TC-01-02-03-05/doc68.pdf (accessed February 27, 2025).

litigated and directed by the court to be set aside or modified pursuant to Government Code section 17559(b) or a request for a new test claim decision based on a subsequent change in the law is filed pursuant to Government Code section 17570.[83]

The Commission finds that the trash provisions are not new and do not mandate a new program or higher level of service. Provision C.10.a.i. requires permittees to reduce trash discharges to receiving waters from their 2009 levels according to a schedule that requires them to attain 70 percent reduction by July 1, 2017, and 80 percent reduction by July 1, 2019.[84] To comply with the reduction requirements, Provision C.10.a.ii. requires the implementation of "trash prevention and control actions, including full trash capture systems and other trash management actions, or combinations of actions, with trash discharge control equivalent to or better than full trash capture systems, to reduce trash to a Low trash generation rating or better," and to ensure that lands they do not own or operate but are plumbed directly to their storm drain system in a Very High, High, or Moderate trash generation area are either equipped with full trash capture systems or are managed with trash discharge control actions equivalent to or better than a full trash capture system.[85] Provision C.10.a.iii. requires permittees to install and maintain a mandatory minimum number of full trash capture systems, to treat runoff from an area equivalent to 30 percent of the retail/wholesale land area, as documented by the Association of Bay Area Governments, which drains into the storm drain system within their jurisdiction.[86] Provision C.10.b.i. provides specific standards for proper maintenance and documentation of permittees' full trash capture systems, and requires permittees to annually certify each of their full trash capture systems has been operated and maintained to meet those standards.[87] Provision C.10.b.ii. requires permittees to maintain documentation for all of their non-full trash capture system control actions, and to conduct visual on-land assessments of each area where they implemented non-full trash capture system control actions or a combination of actions other than full trash capture, to determine or verify the effectiveness of the action or combination of actions.[88]

The prior permit required the timely implementation of control measures to reduce trash loads by 40 percent by 2014, by 70 percent by 2017, and by 100 percent by 2022.[89] This is the same schedule for compliance as in the test claim permit and the requirement to reduce trash loads by 80 percent by 2019 is in line with the existing

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[83] *California School Boards Assoc. v. State of California* (2009) 171 Cal.App.4th 1183, 1200.

[84] Exhibit A, Test Claim, page 476 (test claim permit, Provision C.10.a.i.).

[85] Exhibit A, Test Claim, page 477 (test claim permit, Provision C.10.a.ii.).

[86] Exhibit A, Test Claim, page 477 (test claim permit, Provision C.10.a.iii.).

[87] Exhibit A, Test Claim, page 478 (test claim permit, Provision C.10.b.i.).

[88] Exhibit A, Test Claim, page 479 (test claim permit, Provision C.10.b.ii.).

[89] Exhibit A, Test Claim, page 174 (prior permit, Provision C.10).

schedule and therefore is not new. The prior permit also had a specific provision requiring permittees to install a mandatory minimum number of full trash capture systems, which has not changed with this permit and is not new.[90] For the requirement to inspect and maintain full trash capture systems, federal law has always required permittees to properly operate and maintain their facilities and systems of treatment and control, and to maintain documentation.[91] This duty also applies for non-full trash capture system control actions, and the on-land visual assessments are a quality assurance procedure, which federal regulations require for proper operation and maintenance of these facilities and systems of treatment and control.[92] Though the claimant may complain that these provisions are more prescriptive, burdensome, and costly than what was required under the prior permit, the fact is the permittees were always required to perform these activities; all the test claim permit has done is specify what proper performance entails.

The Commission further finds the test claim permit imposes the following new requirements when compared to prior law:

1. Green Infrastructure Plan (Provision C.3.j.i.-iv.):
    a. Green Infrastructure Plan (Provision C.3.j.i.)
        - Prepare a framework or workplan describing specific tasks and timeframes for development for its Green Infrastructure Plan, to be approved by the Permittee's governing body, mayor, city manager, or county manager by June 30, 2017. This framework or workplan shall include a statement of purpose, tasks, and timeframe needed to complete all requirements in Provision C.3.j.i.2. (discussed below).[93]
        - Prepare a Green Infrastructure Plan, subject to Executive Officer approval, that contains all the following:
            - A mechanism (such as SFEI's Green PlanIT tool) to prioritize and map areas for potential and planned projects, both public and private, on a drainage-area specific basis, for implementation by 2020, by 2030, and by 2040, that includes criteria for prioritization and outputs that can be incorporated into the Permittees' long-term planning and capital improvement processes.
            - Outcomes from the above-described mechanism, including but not limited to, the prioritization criteria, maps, lists, and all other information, as appropriate. Individual project-specific reviews do not need to be

[90] Exhibit A, Test Claim, page 175 (prior permit, Provision C.10.a.iii.).

[91] Code of Federal Regulations, title 40, sections 122.41(e), 122.41(j)(2), and 122.42(c)(4).

[92] Code of Federal Regulations, title 40, section 122.41(e).

[93] Exhibit A, Test Claim, page 423 (test claim permit, Provision C.3.j.i.1.).

submitted with the Plan, but shall be made available for review upon request.

- Targets for the amount of impervious surface from public and private projects within the Permittee's jurisdiction to be retrofitted by 2020, by 2030, and by 2040.
- A process for tracking and mapping completed projects, public and private, and making the information publicly available online (I.E., SFEI's Green PlanIT tool).
- General guidelines for overall streetscape and project design and construction so that projects have a unified complete design that implements the range of functions associated with the project.
- Standard specifications, and as appropriate, typical design details and related information necessary for the Permittee to implement Green Infrastructure Projects in its jurisdiction, which shall be sufficient to address the different street and project types within a Permittee's jurisdiction, as defined by land use and transportation characteristics.
- Requirements that projects be designed to meet the treatment and hydromodification sizing requirements outline in Provisions C.3.c. and C.3.d. For projects that are not subject to these requirements according to Provision C.3.b.ii. (non-regulated projects), Permittees may collectively propose a single approach for how to proceed when project constraints preclude fully meeting the sizing requirements, which can include options for addressing specific issues or scenarios.
- A summary of planning documents the permittee has updated or otherwise modified to incorporate Green Infrastructure requirements (General Plans, Specific Plans, Complete Street Plans, Active Transportation Plans, Storm Drain Master Plans, Pavement Work Plans, Urban Forestry Plans, Flood Control/Management Plans, and any other plans that may impact the future alignment, configuration or design of impervious surfaces within the Permittee's jurisdiction). These modifications are to be completed by no later than the end of the permit term.
- A workplan identifying how the Permittee will ensure that Green Infrastructure and low impact development are appropriately included in future plans.
- A workplan to complete prioritized projects identified as part of an Alternative Compliance Program or Early Implementation as outlined in Provision C.3.e. or C.3.j.ii.
- An evaluation of prioritized project funding options including, but not limited to: Alternative Compliance funds; grant monies, including transportation project grants from federal, State, and local agencies;

existing Permittee resources; new tax or other levies; and other sources of funds.[94]

- Adopt policies, ordinances, and/or other appropriate legal mechanisms to ensure implementation of the Green Infrastructure Plan in accordance with the requirements of this provision.[95]
- Conduct outreach and education in accordance with the following:
  - Conduct public outreach on the requirements of this provision, including outreach coordinated with adoption or revision of standard specifications and planning documents, and with the initiation and planning of infrastructure projects. Such outreach shall include general outreach and targeted outreach to and training for professionals involved in infrastructure planning and design.
  - Train appropriate staff, including planning, engineering, public works maintenance, finance, fire/life safety, and management staff on the requirements of this provision and methods of implementation.
  - Educate appropriate Permittee elected officials (e.g., mayors, city council members, county supervisors, district board members) on the requirements of this provision and methods of implementation.[96]
- Each permittee shall report on its planning progress as follows:
  - Submit documentation in the 2017 Annual Report that its framework or workplan for development of its Green Infrastructure Plan was approved by its governing body, mayor, city manager, or county manager by June 30, 2017.
  - Submit its completed Green Infrastructure Plan with the 2019 Annual Report.
  - Submit documentation of its legal mechanisms to ensure implementation of its Green Infrastructure Plan with the 2019 Annual Report.
  - Submit a summary of its outreach and education efforts in each Annual Report.[97]

b. Early Implementation – List of Green Infrastructure Projects (Provision C.3.j.ii.):

- *Except for a permittee's own public project (which does not mandate a new program or higher level of service)*, prepare and maintain a list of Green Infrastructure Projects, public and private, that are already planned for

[94] Exhibit A, Test Claim, pages 423-425 (test claim permit, Provision C.3.j.i.2.).

[95] Exhibit A, Test Claim, page 425 (test claim permit, Provision C.3.j.i.3.).

[96] Exhibit A, Test Claim, pages 425-426 (test claim permit, Provision C.3.j.i.4.).

[97] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.i.5.).

implementation during the permit term and infrastructure projects planned for implementation during the permit term that have potential for Green Infrastructure measures.[98]

- *Except for a permittee's own public project (which does not mandate a new program or higher level of service)*, submit the list with each Annual Report and a summary of planning or implementation status for each public Green Infrastructure Project and each private Green Infrastructure Project that is not also a Regulated Project as defined in Provision C.3.b.ii. Include a summary of how each public infrastructure project with Green Infrastructure potential will include Green Infrastructure measures to the maximum extent practicable during the permit term. For any public infrastructure project where implementation of Green Infrastructure measures is not practicable, submit a brief description of the project and the reasons Green Infrastructure measures were impracticable to implement.[99]

c. Participation in Processes to Promote Green Infrastructure (Provision C.3.j.iii.):

- Either individually or collectively, track processes, assemble and submit information, and provide informational materials and presentations as needed to assist relevant regional, State, and federal agencies to plan, design, and fund incorporation of Green Infrastructure measures into local infrastructure projects, including transportation projects. Issues to be addressed include coordinating the timing of funding from different sources, changes to standard designs and design criteria, ranking and prioritizing projects for funding, and implementation of cooperative in-lieu programs.[100]
- In each Annual Report, report on the goals and outcomes during the reporting year of work undertaken to participate in processes to promote Green Infrastructure.[101]
- In the 2019 Annual Report, submit a plan and schedule for new and ongoing efforts to participate in processes to promote Green Infrastructure.[102]

d. Tracking and Reporting Progress (Provision C.3.j.iv):

- Either individually or collectively, develop and implement regionally-consistent methods to track and report implementation of Green Infrastructure measures including treated area and connected and disconnected impervious area on both public and private parcels within their jurisdictions. The methods shall also address tracking needed to provide reasonable assurance that

[98] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.ii.1.).

[99] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.ii.2.).

[100] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.iii.1.).

[101] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.3.j.iii.2.).

[102] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.3.j.iii.3.).

wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met.[103]

- In each Annual Report, report progress on development and implementation of the tracking methods.[104]
- In the 2019 Annual Report, submit the tracking methods and report implementation of Green Infrastructure measures including treated area, and connected and disconnected impervious area on both public and private parcels within their jurisdictions.[105]

2. Reasonable Assurance Analysis (Provisions C.11.c.ii.2., C.11.c.iii.1.-3., C.12.c.ii.2., and C.12.c.iii.1.-3.):
    - Prepare a reasonable assurance analysis of future mercury and PCBs load reductions by doing the following:
        - Quantify the relationship between areal extent of Green Infrastructure implementation and mercury and PCBs load reductions, taking into consideration the scale of contamination of the treated area as well as the pollutant removal effectiveness of likely green infrastructure strategies.[106]
        - Estimate the amount and characteristics of land area that will be treated through Green Infrastructure by 2020, 2030, and 2040.[107]
        - Estimate the amount of mercury/PCBs load reductions that will result from Green Infrastructure implementation by 2020, 2030, and 2040.[108]
        - Quantitatively demonstrate that mercury load reductions of at least 10 kg/yr and PCBs load reductions of at least 3 kg/yr will be realized by 2040 through implementation of Green Infrastructure Projects.[109]
        - Ensure that the calculation methods, models, model inputs, and modeling assumptions used to fulfill provisions C.11.c.ii.2.a.-d. and

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[103] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.3.j.iv.1.).

[104] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.2.j.iv.2.).

[105] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.2.j.iv.3.).

[106] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.a., C.12.c.ii.2.a.).

[107] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.b., C.12.c.ii.2.b.).

[108] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.c., C.12.c.ii.2.c.).

[109] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.ii.2.d., C.12.c.ii.2.d.).

C.12.c.ii.2.a.-d. above have been validated through a peer review process.[110]

- Submit in the 2018 Annual Report as part of the reporting required for Provisions C.11.b.iii.2. and C.12.b.iii.3., the quantitative relationship between Green Infrastructure implementation and mercury and PCBs load reductions. This submittal shall include all data used and a full description of the models and model inputs relied on to establish this relationship.[111]
- Submit in the 2020 Annual Report an estimate of the amount and characteristics of land area that will be treated through Green Infrastructure implementation by 2020, 2030, and 2040. This submittal shall include all data used and a full description of the models and model inputs relied on to generate this estimate.[112]
- Submit in the 2020 Annual Report a reasonable assurance analysis to demonstrate quantitatively that mercury load reductions of at least 10 kg/yr and PCBs load reductions of at least 3 kg/yr will be realized by 2040 through the implementation of Green Infrastructure Projects. This submittal shall include all data used and a full description of models and model inputs relied on to make the demonstration and documentation of peer review of the reasonable assurance analysis.[113]

3. Progress Report on List of Watersheds and Management Areas Where Mercury Control Measures are or will be Implemented (Provision C.11.a.iii.1.):
    - By April 1, 2016, report on progress towards developing a list of the watersheds and portions of watersheds (management areas) where mercury control measures are currently being implemented, and those in which control measures will be implemented during the permit term, as well as the monitoring data and other information used to select these watersheds and management areas.[114]
4. PCBs Reporting (Provisions C.12.a.iii.1. and C.12.a.iii.2.):
    - By April 1, 2016, report on progress towards developing a list of the watersheds and portions of watersheds (management areas) where PCBs

[110] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.ii.2.e., C.12.c.ii.2.e.).

[111] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.1., C.12.c.iii.1.).

[112] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.2., C.12.c.iii.2.).

[113] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.3., C.12.c.iii.3.).

[114] Exhibit A, Test Claim, page 486 (test claim permit, Provision C.11.a.iii.1.).

control measures are currently being implemented, and those in which control measures will be implemented during the permit term, as well as the monitoring data and other information used to select these watersheds and management areas.[115]

- In the 2016 Annual Report, include the following information:
    - A cumulative listing of all potentially PCB-contaminated sites permittees have discovered and referred to the Water Board to date, with a brief summary description of each site and where to obtain further information.
    - For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural controls or other relevant implementation milestones for structural controls and non-structural BMPs) and a schedule for milestone achievement.
    - Clear statements of the roles and responsibilities of each participating permittee for implementation of pollution prevention or control measures for PCBs.[116]

5. Prepare PCBs control measures implementation plan, schedule, and reasonable assurance analysis to achieve the PCBs TMDL wasteload allocations by 2030 (Provision C.12.d.):
    - Prepare a PCBs control measures implementation plan, which must identify all technically and economically feasible PCBs control measures to be implemented (including green infrastructure projects).[117]
    - Include a schedule for PCBs control measure implementation according to which these technically and economically feasible PCBs control measures will be fully implemented by 2030.[118]
    - Provide an evaluation and quantification of the PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.[119]
    - Prepare a reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030.[120]

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[115] Exhibit A, Test Claim, page 492 (test claim permit, Provision C.12.a.iii.1.).

[116] Exhibit A, Test Claim, pages 493-494 (test claim permit, Provision C.12.a.iii.2.).

[117] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.1.).

[118] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.2.).

[119] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.3.).

[120] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.i.).

- Submit the plan and schedule required by Provision C.12.d. in the 2020 Annual Report.[121]

6. Evaluate the presence of PCBs in caulks/sealants in storm drain or roadway infrastructure in public rights-of-way (Provision C.12.e.):
    - Collect at least 20 samples from throughout the permit-area of the caulks and sealants used in storm drains or roadway infrastructure in public rights-of-way.[122]
    - Analyze the samples taken for PCBs in such a way that is able to detect a minimum PCB concentration of 200 parts per billion.[123]
    - Report on the results of this investigation, including all data gathered, no later than the 2018 Annual Report.[124]

The remaining requirements alleged by the claimant are either not new, not mandated by the state, or are not a new program or higher level of service.

Finally, the Commission finds that the new state-mandated activities result in costs mandated by the state for some of the activities based on the following findings:

1. There is substantial evidence in the record that permittees incurred costs exceeding $1,000 and used proceeds of taxes to comply with the test claim permit.
2. Pursuant to Government Code section 17556(d), permittees have regulatory fee authority sufficient as a matter of law to fund the new state-mandated activities related to developing and implementing the Green Infrastructure Plan (Provision C.3.j.i.-iv.), and thus, there are no costs mandated by the state for these activities.
3. The Permittees have constitutional and statutory authority to charge property-related fees for the reasonable assurance analysis of future mercury and PCBs load reductions (C.11.c.ii.2., C.11.c.iii.1.-3., C.12.c.ii.2., and C.12.c.iii.1.-3.); required mercury progress report on list of watersheds and management areas where control measures are or will be implemented (C.11.a.iii.); PCBs reporting (C.12.a.iii.1. and 2.); PCBs control measures implementation plan (C.12.d.); and PCBs caulk and sealant testing (C.12.e.). However, from January 1, 2016 (the beginning date of the potential period of reimbursement) to December 31, 2017, these fees are subject to the voter approval requirement in article XIII D, section

[121] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.iii.).

[122] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.ii.).

[123] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.ii.).

[124] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.iii.).

6(c), and therefore fee authority is not sufficient as a matter of law.[125] Under these limited circumstances, Government Code section 17556(d) does not apply, and there are costs mandated by the state.[126] Any fee revenues received must be identified as offsetting revenue. In addition, reimbursement for this mandate from any source, including but not limited to, service fees collected, federal funds, other state funds, and other funds that are not a claimant's local proceeds of taxes shall be identified and deducted from this claim.

On or after January 1, 2018, there are no costs mandated by the state to comply with these activities because the claimants have constitutional and statutory authority to charge property-related fees for these costs subject only to the voter protest provisions of article XIII D, which is sufficient as a matter of law to cover the costs of the mandated activities within the meaning of Government Code section 17556(d).[127]

Based on *Paradise Irrigation District* case and the Legislature's enactment of Government Code sections 57350 and 57351 (which overturned *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351), there are no costs mandated by the state on or after January 1, 2018, to comply with these activities, because claimants have constitutional and statutory authority to charge property-related fees for these costs subject only to the voter protest provisions of article XIII D, which is sufficient as a matter of law to cover the costs of the mandated activities within the meaning of Government Code section 17556(d).

Accordingly, the Commission partially approves this Test Claim for the reasonable assurance analysis of future mercury and PCBs load reductions (C.11.c.ii.2., C.11.c.iii.1.-3., C.12.c.ii.2., and C.12.c.iii.1.-3.); required mercury progress report on list of watersheds and management areas where control measures are or will be implemented (C.11.a.iii.); PCBs reporting (C.12.a.iii.1. and 2.); PCBs control measures implementation plan (C.12.d.); and PCBs caulk and sealant testing (C.12.e.) from January 1, 2016, to December 31, 2017 only.

In addition, reimbursement for these mandated activities from any source, including but not limited to, state and federal funds, any service charge, fees, or assessments to

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[125] See *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351, and *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 579-581.

[126] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 579-581; Government Code sections 57350 and 57351 (SB 231, eff. January 1, 2018, which overturned *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351); *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 195.

[127] See *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, and Government Code sections 57350 and 57351 (which overturned *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351).

offset all or part of the costs of this program, and any other funds that are not the claimant's proceeds of taxes that are used to pay for the mandated activities, shall be identified and deducted from any claim submitted for reimbursement.

All other sections, activities, and costs pled in the Test Claim are denied.

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COMMISSION FINDINGS

I. Chronology

11/19/2015 The Test Claim Permit, San Francisco Bay Regional Water Quality Control Board, Order No. R2-2015-0049 was adopted; the test claim permit became effective on January 1, 2016.[128]

06/30/2017 The claimant filed the Test Claim.[129]

09/11/2017 Commission staff issued the Notice of Complete Test Claim Filing, Schedule for Comments, Request for Administrative Records, and Notice of Tentative Hearing Date.

10/10/2017 The Department of Finance (Finance) filed comments on the Test Claim.[130]

[128] Exhibit A, Test Claim, page 374 (test claim permit).

[129] Exhibit A, Test Claim, page 4.

[130] Exhibit B, Finance's Comments on the Test Claim, page 1.

11/07/2017-11/16/2017	The claimant and the Regional Board each requested extensions of time to file comments, which were respectively granted and partially granted for good cause.
02/01/2018	The Regional Board submitted late comments on the Ttest Claim.[131]
02/01/2018	The Regional Board filed the administrative record of the permit in eight parts.[132]
03/06/2018-04/19/2018	The claimant requested two extensions of time to file rebuttal comments, which were granted for good cause.
05/29/2018	The claimant filed rebuttal comments.[133]
12/23/2025	Commission staff issued the Draft Proposed Decision.[134]

II. Background

A. Federal Clean Water Act.

The federal Clean Water Act was enacted in 1972 and is a comprehensive water quality statute designed to restore and maintain the chemical, physical, and biological integrity of the nation's waters.[135] The Act's national goal was to eliminate "the discharge of pollutants into the navigable waters" of the United States by the year 1985.[136] "To accomplish this goal the Act established 'effluent limitations,' which are restrictions on the 'quantities, rates, and concentrations of chemical, physical, biological, and other constituents'; these effluent limitations allow the discharge of pollutants only when the water has been satisfactorily treated to conform with federal water quality standards."[137]

The Clean Water Act prohibits pollutant discharges unless they comply with: (1) a permit; (2) established effluent limitations or standards; or (3) established national

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[131] Exhibit C, Regional Board's Late Comments on the Test Claim, page 1.

[132] Because of its enormous size, this record cannot reasonably be included as an exhibit. Documents contained therein and cited in this document are being included as excerpts. However, the entirety of all eight parts are available on the Commission's website on the matter page for this Test Claim: https://csm.ca.gov/matters/16-TC-03.shtml.

[133] Exhibit D, Claimant's Rebuttal Comments, page 1.

[134] Exhibit E, Draft Proposed Decision.

[135] United States Code, title 33, section 1251 et seq.; *City of Burbank v. State Water Resources Control Board* (2005) 35 Cal.4th 613, 620; *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 757.

[136] United States Code, title 33, section 1251(a)(1).

[137] *City of Burbank v. State Water Resources Control Board* (2005) 35 Cal.4th 613, 620, citing United States Code, title 33, sections 1311, 1362(11).

standards of performance.[138] The term “discharge of a pollutant” means “any addition of any pollutant to navigable waters from any point source.”[139] A “point source” is any discernible, confined and discrete conveyance, including but not limited to any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, or vessel or other floating craft, from which pollutants are or may be discharged.”[140]

The Clean Water Act created the National Pollutant Discharge Elimination System (NPDES), authorizing the Environmental Protection Agency (EPA) to issue a permit for any pollutant discharge that will satisfy all requirements established by the Act or the EPA Administrator, which must be designed to ensure that discharges do not violate applicable water quality standards established by EPA or the state.[141] A state may administer its own permitting system if authorized by EPA, so long as those standards and limitations are not “less stringent” than those in effect under the Clean Water Act [142]

In 1973, EPA adopted regulations to implement the Act which provided exclusions for several types of discharges including “uncontrolled discharges composed entirely of storm runoff when these discharges are uncontaminated by any industrial or commercial activity” and have not been identified “as a significant contributor of pollution.”[143] This particular exclusion applied only to municipal separate storm sewer systems (MS4s). In 1977, however, the Court in *Natural Resources Defense Council v. Costle* held EPA had no authority to exempt point source discharges, including stormwater discharges from MS4s, from the requirements of the Act and doing so contravened Congress’ intent.[144] Since the Act prohibits “the discharge of any pollutant by any person” without an NPDES permit, MS4 municipal storm sewer systems are included in the definition of a point source.[145]

Thus, the Clean Water Act was amended by the Water Quality Act of 1987 to require NPDES permits for stormwater discharges from MS4s, stormwater discharges associated with industrial and construction activities, and designated stormwater

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[138] United States Code, title 33, sections 1311(a), 1312, 1316, 1317, 1328, 1342, and 1344.

[139] United States Code, title 33, section 1362(12)(A), emphasis added.

[140] United States Code, title 33, section 1362(14).

[141] United States Code, title 33, section 1342(a)(1), (2).

[142] United States Code, title 33, section 1370.

[143] Code of Federal Regulations, title 40, sections 124.5 and 124.11 (30 FR 18003, July 5, 1973).

[144] *Natural Res. Def. Council v. Costle* (D.C.Cir.1977) 568 F.2d 1369, 1379 (holding unlawful EPA's exemption of stormwater discharges from NPDES permitting requirements).

[145] United States Code, title 33, section 1311(a).

discharges considered significant contributors of pollutants to waters of the United States.[146] Federal law states that permits for discharges from MS4 municipal storm sewers:

- may be issued on a system- or jurisdiction-wide basis;
- shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and
- shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants.[147]

Discharges from MS4s include stormwater runoff, which "…is generated from rain and snowmelt events that flow over land or impervious surfaces, such as paved streets, parking lots, and building rooftops, and does not soak into the ground."[148] Polluted stormwater runoff is commonly transported through MS4s, and then often discharged, untreated, into local water bodies and, thus, stormwater runoff requires "best management practices" (BMPs) and controls to the maximum extent practicable to reduce the discharge of these pollutants as stated above. As the Ninth Circuit Court of Appeal stated:

> Storm water runoff is one of the most significant sources of water pollution in the nation, at times "comparable to, if not greater than, contamination from industrial and sewage sources." [Citation omitted.] Storm sewer waters carry suspended metals, sediments, algae-promoting nutrients (nitrogen and phosphorus), floatable trash, used motor oil, raw sewage, pesticides, and other toxic contaminants into streams, rivers, lakes, and estuaries across the United States. [Citation omitted.] In 1985, three-quarters of the States cited urban storm water runoff as a major cause of waterbody impairment, and forty percent reported construction site runoff as a major cause of impairment. Urban runoff has been named as the foremost cause of impairment of surveyed ocean waters. Among the sources of storm water contamination are urban development, industrial facilities, construction sites, and illicit discharges and connections to storm sewer systems.[149]

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[146] United States Code, title 33, section 1342(p)(3)(B).

[147] United States Code, title 33, section 1342(p)(3)(B).

[148] See Code of Federal Regulations, title 40, section 122.26(b)(13).

[149] *Environmental Defense Center, Inc. v. EPA* (9th Cir. 2003) 344 F.3d 832, 840-841(citing *Natural Res. Def. Council v. EPA* (9th Cir. 1992) 966 F.2d 1292, 1295, and Regulation for Revision of the Water Pollution Control Program Addressing Storm Water

A discharge to a MS4 that "is *not* composed entirely of stormwater" is considered an illicit non-stormwater, or dry weather discharge.[150] According to a fact sheet issued by EPA, illicit non-stormwater discharges may contribute to high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria to receiving waterbodies.[151] Examples of illicit non-stormwater discharges include trash, sanitary wastewater, effluent from septic tanks, car wash wastewater, improper oil disposal, radiator flushing disposal, laundry wastewaters, spills from roadway accidents, and improper disposal of automobile and household toxics.[152] As stated above, federal law requires MS4 permits to "include a requirement to effectively prohibit non-stormwater discharges into the storm sewers," except as authorized by an NPDES permit.[153]

On November 16, 1990, EPA published regulations (40 CFR Part 122), which prescribe permit application requirements for MS4s under the Clean Water Act. EPA regulations specify the information to be included in a permit application.[154] Among other things, an applicant must set out a proposed management program that includes management practices; control techniques; and system, design, and engineering methods to reduce the discharge of pollutants to the maximum extent practicable; a program including inspections and ordinances to detect and remove prohibited, illicit discharges; a monitoring program to ensure compliance with water quality standards; an assessment of controls and reporting; and a fiscal analysis of the necessary capital and operation and maintenance expenditures necessary to accomplish the activities of the programs.[155] The permit-issuing agency has discretion to determine which practices, whether or not proposed by the applicant, will be imposed as conditions to ensure

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(64 Fed.Reg. 68722, 68724, 68727 (December 8, 1999) codified at Code of Federal Regulations, title 40, parts. 9, 122, 123, and 124)).

[150] Code of Federal Regulations, title 40, section 122.26(b)(2) defines "Illicit discharge" as "any discharge to a municipal separate storm sewer that is *not* composed entirely of storm water except discharges pursuant to a NPDES permit (*other than the NPDES permit for discharges from the municipal separate storm sewer*) and discharges resulting from firefighting activities." Emphasis added.

[151] Exhibit X (1), Stormwater Phase II Final Rule, Illicit Discharge Detection and Elimination, USEPA Fact Sheet 2.5.

[152] Exhibit X (1), Stormwater Phase II Final Rule, Illicit Discharge Detection and Elimination, USEPA Fact Sheet 2.5.

[153] United States Code, title 33, section 1342(p)(3)(B)(ii) (Public Law 100-4); Code of Federal Regulations, title 40, section 122.26(d)(2)(iv)(B)(1).

[154] Code of Federal Regulations, title 40, section 122.26(d)(1)(i-viii).

[155] Code of Federal Regulations, title 40, section 122.26(d)(2).

compliance with water quality standards.[156] The state is required to transmit to EPA a copy of each permit application and permit proposed to be issued.[157]

In addition, the Clean Water Act requires states to develop water quality standards and criteria to protect the beneficial uses of any given waterbody, which are included in the Regional Board's Basin Plans.[158] States are required to adopt water quality standards and criteria based on sound scientific rationale that identifies sufficient parameters or constituents to protect the designated use, and numerical values related to any constituents should be based on the U.S. EPA's guidance documents or other defensible methods.[159] The water quality standard or criteria can be expressed in narrative form, which are broad statements of desirable water quality goals, or in a numeric form, which identifies specific pollutant concentrations.[160] When water quality criteria are met, water quality will generally protect the designated use."[161] Federal regulations state the purpose of a water quality standard as follows:

> A water quality standard defines the water quality goals of a water body, or portion thereof, by designating the use or uses to be made of the water and by setting criteria that protect the designated uses. States adopt water quality standards to protect public health or welfare, enhance the quality of water and serve the purposes of the Clean Water Act (the Act). "Serve the purposes of the Act" (as defined in sections 101(a)(2) and 303(c) of the Act) means that water quality standards should, wherever attainable, provide water quality for the protection and propagation of fish, shellfish and wildlife and for recreation in and on the water and take into consideration their use and value of public water supplies, propagation of fish, shellfish, and wildlife, recreation in and on the water, and agricultural, industrial, and other purposes including navigation.[162]

EPA publishes water quality criteria in receiving waters to reflect the latest scientific knowledge on the kind and extent of all identifiable effects on health and welfare, which may be expected from the presence of pollutants in any body of water.[163] In addition,

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[156] *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 757, citing to Code of Federal Regulations, title 40, section 122.26(d)(2).

[157] United States Code, title 33, section 1342(d).

[158] United States Code, title 33, section 1313(a), (c)(1); Code of Federal Regulations, title 40, sections 131.6, 131.10-131.12; Water Code sections 13240, 13241.

[159] Code of Federal Regulations, title 40, section 131.11.

[160] *City of Arcadia v. State Water Resources Control Board* (2006) 135 Cal.App.4th 1392, 1403.

[161] Code of Federal Regulations, title 40, section 131.3(b).

[162] Code of Federal Regulations, title 40, section 131.2.

[163] United States Code, title 33, section 1314(a).

on May 18, 2000, U.S. EPA also established numeric water quality criteria for priority toxic pollutants and other provisions for water quality standards to be applied to waters in the state of California, which is known as the California Toxics Rule (CTR).[164] As the courts have explained, the CTR is a water quality standard that applies to "'all waters' for 'all purposes and programs under the CWA.'"[165]

States are required to hold public hearings from time to time but "at least once each three year period" for the purpose of reviewing applicable water quality standards and, as appropriate, modifying and adopting standards:

> Whenever the State revises or adopts a new standard, such revised or new standard shall be submitted to the [US EPA] Administrator. Such revised or new water quality standard shall consist of the designated uses of the navigable waters involved and the water quality criteria for such waters based upon such uses. Such standards shall protect the public health or welfare, enhance the quality of water and serve the purposes of this chapter. Such standards shall be established taking into consideration their use and value for public water supplies, propagation of fish and wildlife, recreational purposes, and agricultural, industrial, and other purposes, and also taking into consideration their use and value for navigation.[166]

When reviewing, revising, or adopting new water quality standards, the state is required to adopt numeric criteria for all toxic pollutants listed in federal law.[167]

The Clean Water Act also requires states to develop a list of "impaired" waters within their jurisdiction, meaning that existing controls of pollutants are not sufficient to meet water quality standards necessary to permit the designated beneficial uses, such as fishing or recreation.[168] States must then rank those impaired waters by priority, and establish a TMDL, which includes a calculation of the maximum amount of each

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[164] Code of Federal Regulations, title 40, section 131.38 (65 Federal Register 31682, 31711, May 18, 2000).

[165] *Santa Monica Baykeeper v. Kramer Metals, Inc.* (2009) 619 F.Supp.2d 914, 927.

[166] United States Code, title 33, section 1313(c)(2)(A).

[167] United States Code, title 33, section 1313(c)(2)(B).

[168] See United States Code, title 33, section 1313(d)(1)(A) (codifying CWA § 303(d) and stating: "Each State shall identify [as impaired] those waters within its boundaries for which the effluent limitations … are not stringent enough to implement any water quality standard applicable to such waters. The State shall establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters.")

constituent pollutant that the water body can assimilate and still meet water quality standards.[169]

B. The California Water Pollution Control Program

California's water pollution control laws were substantially overhauled in 1969 with the Porter-Cologne Water Quality Control Act (Porter-Cologne).[170] Beginning with section 13000, Porter-Cologne provides:

> The Legislature finds and declares that the people of the state have a primary interest in the conservation, control, and utilization of the water resources of the state, and that the quality of all the waters of the state shall be protected for use and enjoyment by all the people of the state.
>
> The Legislature further finds and declares that activities and factors which may affect the quality of the waters of the state shall be regulated to attain the highest water quality which is reasonable, considering all demands being made and to be made on those waters and the total values involved, beneficial and detrimental, economic and social, tangible and intangible.
>
> The Legislature further finds and declares that the health, safety, and welfare of the people of the state requires that there be a statewide program for the control of the quality of all the waters of the state…and that the statewide program for water quality control can be most effectively administered regionally, within a framework of statewide coordination and policy.[171]

The state water pollution control program was again modified, beginning in 1972, to substantially comply with the Clean Water Act, and "on May 14, 1973, California became the first state to be approved by the EPA to administer the NPDES permit program."[172]

Section 13160 provides the State Water Resources Control Board (State Board) "is designated as the state water pollution control agency for all purposes stated in the Federal Water Pollution Control Act…[and is] authorized to exercise any powers delegated to the state by the Federal Water Pollution Control Act (33 U.S.C. § 1251 et seq.) and acts amendatory thereto."[173] Section 13001 describes the state and the nine

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[169] United States Code, title 33, section 1313(d); Code of Federal Regulations, title 40, section 130.7(c).

[170] Water Code section 13020.

[171] Water Code section 13000.

[172] *County Sanitation Dist. No. 2 of Los Angeles County v. County of Kern* (2005) 127 Cal.App.4th 1544, 1565-1566. See also Water Code section 13370 *et seq*.

[173] Water Code section 13160.

regional boards as being “the principal state agencies with primary responsibility for the coordination and control of water quality.”

To achieve the objectives of conserving and protecting the water resources of the state, and in exercise of the powers delegated, Porter-Cologne, like the Clean Water Act, employs a combination of water quality standards and point source pollution controls.[174]

Under Porter Cologne, the nine regional boards’ primary regulatory tools are the water quality control plans, or Basin Plans.[175] These plans fulfill the planning function for the water boards, are regulations adopted under the Administrative Procedure Act with a specialized process,[176] and provide the underlying basis for most of the regional board’s actions (e.g., NPDES permit conditions, cleanup levels). Basin plans consist of three elements:

- Determination of beneficial uses;
- Water quality objectives to reasonably protect beneficial uses; and
- An implementation program to achieve water quality objectives.[177]

Water Code sections 13240-13247 address the development and implementation of the basin plans, including “water quality objectives,” defined in section 13050 as “the limits or levels of water quality constituents or characteristics which are established for the reasonable protection of beneficial uses of water or the prevention of nuisance within a specific area.”[178] Section 13241 provides each regional board “shall establish such water quality objectives in water quality control plans as in its judgment will ensure the reasonable protection of beneficial uses and the prevention of nuisance.”[179]

Beneficial uses, in turn, are defined in section 13050 as including, but not limited to “domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves.”[180] In addition, section 13243 permits a regional board to define “certain conditions or areas where the discharge of waste, or certain types of waste, will not be permitted.”[181]

Sections 13260-13274 address the development of “waste discharge requirements,” which section 13374 states “is the equivalent of the term ‘permits’ as used” in federal

[174] Water Code section 13142.

[175] Water Code sections 13240-13247.

[176] Water Code sections 11352–11354.

[177] Water Code section 13050(j), see also section 13241.

[178] Water Code section 13050.

[179] Water Code section 13241.

[180] Water Code section 13050.

[181] Water Code section 13243.

law.[182] Section 13263 authorizes the regional boards, after a public hearing, to prescribe waste discharge requirements "as to the nature of any proposed discharge, existing discharge, or material change in an existing discharge, except discharges into a community sewer system." Section 13263 provides "[a]ll discharges of waste into waters of the state are privileges, not rights."[183] Section 13372 states "[t]his chapter shall be construed to ensure consistency with the requirements for state programs implementing the Federal Water Pollution Control Act and acts amendatory thereof or supplementary thereto." Section 13377 permits a regional board to issue waste discharge requirements "which apply and ensure compliance with all applicable provisions of the [Federal Water Pollution Control Act]."[184] In effect, sections 13263 and 13377 permit the issuance of waste discharge requirements concurrently with an NPDES permit "if a discharge is to waters of both California and the United States."

The California Supreme Court explained the interplay between state and federal law in *Department of Finance v. Commission on State Mandates* as follows:

> California was the first state authorized to issue its own pollutant discharge permits. (Citations omitted.) Shortly after the CWA's enactment, the Legislature amended the Porter–Cologne Act, adding chapter 5.5 (Wat. Code, § 13370 et seq.) to authorize state issuance of permits (Wat. Code, § 13370, subd. (c)). The Legislature explained the amendment was "in the interest of the people of the state, in order to avoid direct regulation by the federal government of persons already subject to regulation under state law pursuant to [the Porter–Cologne Act]." (*Ibid*.) The Legislature provided that Chapter 5.5 be "construed to ensure consistency" with the CWA. (Wat. Code, § 13372, subd. (a).) It directed that state and regional boards issue waste discharge requirements "ensur[ing] compliance with all applicable provisions of the [CWA] ... *together with any more stringent effluent standards or limitations* necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance." (Wat. Code, § 13377, italics added.) To align the state and federal permitting systems, the legislation provided that the term " 'waste discharge requirements' " under the Act was equivalent to the term " 'permits' " under the CWA. (Wat. Code, § 13374.) Accordingly, California's permitting system now regulates discharges under both state and federal law. (Citations omitted.)[185]

California has adopted an Ocean Plan in accordance with federal law, applicable to interstate waters, and two other state-wide plans (California Inland Surface Waters Plan (ISWP) and the Enclosed Bays and Estuaries Plan (EBEP)), which establish water

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[182] Water Code section 13374.

[183] Water Code section 13263(a-b); (g).

[184] Water Code section 13377.

[185] *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 757.

quality criteria or objectives for all fresh waters, bays and estuaries in the State.[186] These statewide plans contain narrative and numeric water quality criteria for toxic pollutants, in part to satisfy the Clean Water Act (United States Code, title 33, section 1313(c)(2)(B)). The water quality criteria contained in these statewide plans, together with the designated uses in each of the Basin Plans, create a set of water quality standards for waters within the State of California.[187]

C. The Test Claim Permit

The claimant contends that certain sections of the California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, impose a reimbursable state-mandated program. This is the second stormwater permit adopted by the San Francisco Bay Regional Water Quality Control Board the Commission has reviewed to determine if reimbursement is required under article XIII B, section 6.[188] The following local government permittees are subject to this permit:

- The cities of Alameda, Albany, Berkeley, Dublin, Emeryville, Fremont, Hayward, Livermore, Newark, Oakland, Piedmont, Pleasanton, San Leandro, and Union City, Alameda County (Unincorporated area), the Alameda County Flood Control and Water Conservation District, and Zone 7 of the Alameda County Flood Control and Water Conservation District, who joined together to form the Alameda Countywide Clean Water Program (collectively, the Alameda Permittees);
- The cities of Campbell, Cupertino, Los Altos, Milpitas, Monte Sereno, Mountain View, Palo Alto, San Jose, Santa Clara, Saratoga, and Sunnyvale, the towns of Los Altos Hills and Los Gatos, the Santa Clara Valley Water District, and Santa Clara County, who joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program (collectively, the Santa Clara Permittees);
- The cities of Fairfield and Suisun City, and Fairfield-Suisun Sewer District, who joined together to form the Fairfield-Suisun Urban Runoff Management Program (collectively, the Fairfield-Suisun permittees);
- The cities of Clayton, Concord, El Cerrito, Hercules, Lafayette, Martinez, Orinda, Pinole, Pittsburg, Pleasant Hill, Richmond, San Pablo, San Ramon, and Walnut

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[186] United States Code, title 33, section 1313(c)(3)(A), (B).

[187] See also, Water Code section 13170, which provides that the statewide plans supersede the Basin Plans to the extent any conflict exists.

[188] The prior permit was R2-2009-0074, at issue in 10-TC-02-03-05 (https://www.csm.ca.gov/decisions/10-TC-02-03-05-012425.pdf). See Commission on State Mandates, *Test Claim Decision on California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2009-0074,* 10-TC-02, 10-TC-03, 10-TC-05, adopted January 24, 2025. A subsequent third permit, R2-2022-0018 (as modified by Order No. R2-2023-0019), is at issue in 22-TC-07, which is currently pending (https://csm.ca.gov/matters/22-TC-07.shtml).

Creek, the towns of Danville and Moraga, Contra Costa County, and the Contra Costa County Flood Control and Water Conservation District, who joined together to form the Contra Costa Clean Water Program (collectively the Contra Costa Permittees);

- The cities of Belmont, Brisbane, Burlingame, Daly City, East Palo Alto, Foster City, Half Moon Bay, Menlo Park, Millbrae, Pacifica, Redwood City, San Bruno, San Carlos, San Mateo, and South San Francisco, the towns of Atherton, Colma, Hillsborough, Portola Valley, and Woodside, the San Mateo County Flood Control District and San Mateo County, who joined together to form the San Mateo Countywide Water Pollution Prevention Program (collectively the San Mateo Permittees); and
- The City of Vallejo and the Vallejo Sanitary District (collectively the Vallejo Permittees).

III. Positions of the Parties and Interested Parties

A. City of Union City

The claimant sorts the provisions in the test claim permit it alleges to impose new, reimbursable state mandates into two main categories: trash load reduction (Provisions C.10.a. and C.10.b.); and mercury and PCBs control (Provisions C.3.j., C.11.a., C.11.b., C.11.c., C.12.a., C.12.c., C.12.d., and C.12.e.).[189] It also includes the continuation of monitoring costs from Provision C.8. imposed by the prior test claim permit (*California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2009-0074*, 10-TC-02, 10-TC-03, and 10-TC-05), but states this is only included out of an abundance of caution, and acknowledged it would be willing to withdraw the C.8. issues from this Test Claim if the Commission provided assurance that no waiver, forfeiture, or abandonment of rights to subvention would result.[190]

The claimant says that Provision C.10.a. requires it to undertake new activities to achieve the goal of 100 percent trash load reduction by July 1, 2022, specifically by mandating compliance with a schedule that requires permittees to reduce their trash loads 70 percent by July 1, 2017, and by 80 percent by July 1, 2019.[191] Although the claimant acknowledges that the prior permit stated that permittees must achieve 100 percent trash load reduction by 2022, it claims the prior permit was rescinded when the test claim permit took effect, and that the prior permit described these requirements as goals. The claimant alleges the increased load reductions are new compared to the prior permit's planning and 40 percent load reduction requirements..[192] The claimant also states that "Provision C.10.b. requires Permittees to maintain, and provide for inspection and review upon request, documentation of the design, operation, and

[189] Exhibit A, Test Claim, page 20 (Written Narrative).

[190] Exhibit A, Test Claim, page 20 (Written Narrative).

[191] Exhibit A, Test Claim, page 21 (Written Narrative).

[192] Exhibit A, Test Claim, page 22 (Written Narrative).

maintenance of each of their full trash capture systems, including the mapped location and drainage area served by each system," and provides specific detailed instructions for installing and maintaining full trash capture systems.[193] The claimant alleges the state requires it to install full trash capture systems because the conditions for complying with its load reduction requirements through other trash management actions "has become so burdensome and costly" it determined full trash capture systems are "the least costly compliance option."[194]

For the Mercury and PCBs controls, the claimant says that Provision C.3.j. requires it to complete and implement a Green Infrastructure Plan for the inclusion of low impact development (LID) drainage design into storm drain infrastructure on public and private lands, concluding that this is a new program that did not exist in the prior permit.[195]

Provisions C.11.a. and C.12.a. require permittees to implement control measures to achieve mercury and PCBs load reductions, respectively, and that permittees are required to identify the watersheds and management areas where these measures will be implemented and submit a timed schedule of implementation.[196] Provision C.11.b. also requires permittees to develop and implement an assessment methodology and data collection program to quantify mercury loads reduced through control actions.[197] Provisions C.11.c. and C.12.c. require permittees to implement Green Infrastructure projects to reduce mercury loads by 48 g/year and PCBs loads by 120 g/year by June 30, 2020, which is a new program that was not required by the prior permit.[198] Lastly, Provision C.12.d. requires permittees to prepare a plan for implementing PCBs control measures and a corresponding reasonable assurance analysis that quantitatively demonstrates that sufficient control measures will achieve the PCBs TMDL, and Provision C.12.e. requires permittees to collect samples of caulks and sealants used in storm drains and between concrete curbs and street pavements and investigate whether PCBs are present in such materials and their concentrations, both of which are new.[199] The claimant argues these are new programs not required by the previous permit, which only required various pilot programs and monitoring and evaluation, but not these specific provisions.[200]

According to the claimant, *Department of Finance v. Commission on State Mandates*, (2016) 1 Cal.5th 749, holds that the burden is on the State to prove that it had "no true

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[193] Exhibit A, Test Claim, page 22 (Written Narrative).

[194] Exhibit A, Test Claim, pages 22-23 (Written Narrative).

[195] Exhibit A, Test Claim, page 25 (Written Narrative).

[196] Exhibit A, Test Claim, pages 26-27 (Written Narrative).

[197] Exhibit A, Test Claim, page 26 (Written Narrative).

[198] Exhibit A, Test Claim, pages 26-27 (Written Narrative).

[199] Exhibit A, Test Claim, pages 27-28 (Written Narrative).

[200] Exhibit A, Test Claim, pages 26-27 (Written Narrative).

choice" but to implement something allegedly required by a federal mandate, as well as any other exceptions the State may claim applies, such as fee authority under Government Code section 17556(d).[201] It claims that the Regional Board's argument that the mercury and PCBs provisions were necessary to meet the Mercury and PCBs TMDLs fail to meet this burden, because the Regional Board was the one who drafted the terms of those TMDLs in the first place.[202]

The claimant also disputes the argument raised in Finance's comments that the ability to propose new fees for voter approval is sufficient fee authority within the meaning of Government Code section 17556(d) and disagrees that Senate Bill 231 has any effect on this Test Claim, as it became effective in 2018, while this Test Claim must be approved based on fiscal years 2015-2016 and 2016-2017.[203]

The claimant states that its actual or estimated costs exceed $1,000.[204] The claimant further states that for fiscal year 2016-2017, the C.10. Trash Load Reduction mandates are estimated to cause $16,324,000 in costs statewide; the C.3.j., C.11. and C.12. Green Infrastructure mandates are estimated to cause $414,029 in costs statewide; and the continuation of the C.8. monitoring obligations is estimated to cause $1,397,892 in costs statewide.[205]

B. Regional Board

The Regional Board filed late comments opposing the Test Claim, and raises the following objections:[206]

1. Not Mandated by the State

The Regional Board argues that the test claim permit is required by the Clean Water Act and its regulations, and each of the contested provisions is compelled by federal law. The provisions are required by TMDLs, the EPA-approved Basin Plan, the Clean Water Act and other federal statutes.

The Clean Water Act requires that MS4 permittees effectively prohibit non-stormwater discharges to their MS4s, while Section 301 prohibits the discharge of any pollutant by any person without a permit.[207] Federal law mandates that permits issued to MS4s must require management practices that will result in reducing stormwater pollutants to

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[201] Exhibit A, Test Claim, page 17 (Written Narrative).

[202] Exhibit D, Claimant's Rebuttal Comments, pages 5-6.

[203] Exhibit D, Claimant's Rebuttal Comments, page 3.

[204] Exhibit A, Test Claim pages 19 (Written Narrative), and 42-46 (Declaration of Thomas Ruark, City Engineer, City of Union City).

[205] Exhibit A, Test Claim, pages 31 (Written Narrative), and 75-77 (Declaration of James Scanlin, Associate Environmental Compliance Specialist, Alameda County).

[206] Exhibit C, Regional Board's Late Comments on the Test Claim.

[207] Exhibit C, Regional Board's Late Comments on the Test Claim, page 18.

the maximum extent practicable (MEP) yet at the same time requires that non-stormwater discharges be effectively prohibited from entering the MS4. The San Francisco Bay is impaired for both mercury and PCBs, and the EPA approved TMDLs for both pollutants.[208] These TMDLs require municipal stormwater agencies to take aggressive actions to reduce mercury and PCBs from their stormwater discharges that are anticipated to be implemented over multiple permit terms. Requirements in Provisions C.3.j., C.11.c., C.12.a., C.12.c., C.12.d., and C.12.e. are thus required by section 303(d), and are not part of a new program, do not impose a higher level of service, and are not unique to local government.[209]

2. Not a New Program or Higher Level of Service

The Regional Board argues that the test claim permit does not impose a new program or higher level of service as a whole because it is just a continuation of the prior permit. Furthermore, the mercury and PCBs provisions are based on the TMDLs and their respective implementation plans, which the EPA approved in 2008 and 2010, respectively.[210] Both TMDLs anticipated taking approximately 20 years, or four five-year permit cycles, and anticipated that this permit term would include broadly applicable requirements based on information gathered during the prior permit term.[211] The mercury TMDL anticipated these requirements would include source and treatment controls and management methods, while anticipated PCBs control actions included technologies to treat or filter stormwater, increased use of routine maintenance BMPs, industrial inspections to identify and direct removal PCBs-containing equipment, and a program to control demolition waste.[212] Permittees have been aware of the TMDL load reduction requirements for years, and had opportunities to participate, and did participate in, TMDL development. If there was concern that the TMDLs imposed unfunded state mandates they should have been challenged on such grounds, and to do so now is not timely.[213]

Additionally, the schedule for trash load reduction is not new, but based on the schedule laid out in the prior permit, which required 40% reduction by 2014, 70% reduction by 2017, and 100% reduction by 2022.[214] While the claimant argues that these were merely goals in the prior permit whereas now they are enforceable deadlines, the Regional Board asserts this is a distinction without a difference.[215]

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[208] Exhibit C, Regional Board's Late Comments on the Test Claim, page 13.

[209] Exhibit C, Regional Board's Late Comments on the Test Claim, page 13.

[210] Exhibit C, Regional Board's Late Comments on the Test Claim, page 38.

[211] Exhibit C, Regional Board's Late Comments on the Test Claim, pages 38-39.

[212] Exhibit C, Regional Board's Late Comments on the Test Claim, page 39.

[213] Exhibit C, Regional Board's Late Comments on the Test Claim, page 39.

[214] Exhibit C, Regional Board's Late Comments on the Test Claim, page 40.

[215] Exhibit C, Regional Board's Late Comments on the Test Claim, page 40.

The permit requirements for trash are also not a higher level of service because they are uniformly applied to all stormwater dischargers. Federal law requires all NPDES permits to include monitoring "sufficient to yield data which are representative of the monitored activity including, when appropriate continuous monitoring." The specific monitoring provisions in the test claim permit are common to non-municipal NPDES permits in the Bay Area. Discharging any solid waste and floating materials, including trash, is prohibited, and outside the context of municipal stormwater, would require strict compliance, and achieving zero discharge over a period of time would not be allowed. In this sense the test claim permit's requirements are generally applicable to all dischargers, but are less stringent than individual permits.[216]

3. No Costs Mandated by the State Because the Claimants Have Fee Authority

The Regional Board asserts that there are no costs mandated by the state because the claimants have fee authority sufficient to cover costs pursuant to Government Code section 17556(d) and they have not been forced to use their proceeds of taxes.

The Regional Board contends that voter approval under Proposition 218 is not required to impose or increase fees, as demonstrated by the Legislature's recent approval of Senate Bill 231, which reiterated that the exception from the voter approval requirements for fees and charges for sewer, water, and refuse collection services found in Article XIII D, Section 6, subdivision (c), of the California Constitution, included stormwater in the definition of "sewer," and statutorily overturned *Howard Jarvis Taxpayers Ass'n v. City of Salinas* (2002) 98 Cal.App.4th 1351.[217]

The Regional Board also argues that the provisions at issue regarding trash, mercury, PCBs, and Green Infrastructure are all issues for which the claimant is capable of crafting regulatory fees. "Permittees' police power is 'broad enough to include mandatory remedial measures to mitigate the *past, present or future* adverse impact of the fee payer's operations,' in situations, like those present here, where there is a causal connection or nexus between the adverse effects and the fee payer's activities."[218] It also asserts that permittees' authority to impose regulatory fees for these services comes from Public Resources Code section 40059(a)(1) and Health and Safety Code section 5471(a), which each grant fee authority for "aspects of solid waste

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[216] The Regional Board's comments also made arguments that Provisions C.11.f and C.12.f have general applicability as well. These sections were plead in the prior Test Claim for MRP1, (*California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2009-0074*, 10-TC-02, 10-TC-03, and 10-TC-05) and the pilot feasibility study required was not carried over to the test claim permit. The claimant did not identify these sections as requiring anything new of them in this Test Claim.

[217] Exhibit C, Regional Board's Late Comments on the Test Claim, pages 6-7.

[218] Exhibit C, Regional Board's Late Comments on the Test Claim, page 7 quoting *Sinclair Paint Co. v. State Board of Equalization,* (1997) 15 Cal.4th 866, 877, emphasis added by Regional Board.

handling," and "services…furnished…in connection with…storm drainage," respectively.[219]

Additionally, the Regional Board argues that the record shows that permittees are not required to use their proceeds of taxes for these programs, as they have been able to use other funding sources. Examples include:

- A presentation made at the 2017 Stormwater Finance Forum held in Oakland on how to fund various stormwater related programs including street sweeping and installing and maintaining full trash capture systems and catch basins by imposing trash and sewer related fees and surcharges that would not be subject to Proposition 218;
- Records that other permittees such as the cities of Alameda and Palo Alto have implemented or raised their stormwater fees to fund their programs;
- Alternate funding methods used by other permittees such as Oakland's excess litter fee for high trash generating business;
- The claimant's own Test Claim, which acknowledges that it has so far avoided needing to raise its stormwater fees through the use for grant money for most of the claimed expenses for Green Infrastructure Projects;
- The use of Business Improvement Districts (BID) or Community Benefit Districts (CBD) in which property owners within specific areas vote on assessment fees used to pay for maintenance and beautification within the district; and
- Multiple instances of CalTrans offering grants or partnerships to cities to install full trash capture devices or Green Infrastructure Projects.[220]

C. Department of Finance

Finance defers to the State Water Resources Control Board and the Regional Board on whether there is a state-mandated program and whether any asserted activities impose a new program or higher level of service.[221] Finance's comments address only the fee authority issue. Finance contends there are no costs mandated by the state pursuant to Government Code 17556(d), as it argues that the ability to propose fees for voter approval under Proposition 218 is sufficient fee authority as a matter of law, regardless of whether it is politically feasible to get those fees approved.[222]

Alternatively, if the Commission does find the test claim permit imposes reimbursable mandated costs, Finance points out that the claimant identified potentially offsetting revenue that should reduce costs and be identified by the Commission to reduce the

[219] Exhibit C, Regional Board's Late Comments on the Test Claim, page 8.

[220] Exhibit C, Regional Board's Late Comments on the Test Claim, pages 9-12.

[221] Exhibit B, Finance's Comments on the Test Claim, page 1.

[222] Exhibit B, Finance's Comments on the Test Claim, page 1.

claims; namely Proposition 84 grant funds, other grant funds, and the Clean Water Fund.[223]

IV. Discussion

Article XIII B, section 6 of the California Constitution provides in relevant part the following:

> Whenever the Legislature or any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse such local government for the costs of such programs or increased level of service…

The purpose of article XIII B, section 6 is to "preclude the state from shifting financial responsibility for carrying out governmental functions to local agencies, which are 'ill equipped' to assume increased financial responsibilities because of the taxing and spending limitations that articles XIII A and XIII B impose."[224] Thus, the subvention requirement of section 6 is "directed to state-mandated increases in the services provided by [local government] …"[225]

Reimbursement under article XIII B, section 6 is required when the following elements are met:

- A state statute or executive order requires or "mandates" local agencies or school districts to perform an activity.[226]
- The mandated activity constitutes a "program" that either:
    a. Carries out the governmental function of providing a service to the public; or
    b. Imposes unique requirements on local agencies or school districts and does not apply generally to all residents and entities in the state.[227]
- The mandated activity is new when compared with the legal requirements in effect immediately before the enactment of the test claim statute or executive order and it increases the level of service provided to the public.[228]

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[223] Exhibit B, Finance's Comments on the Test Claim, page 2.

[224] *County of San Diego v. State of California* (1997) 15 Cal.4th 68, 81.

[225] *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56.

[226] *San Diego Unified School Dist. v. Commission on State Mandates* (2004) 33 Cal.4th 859, 874.

[227] *San Diego Unified School Dist. v. Commission on State Mandates* (2004) 33 Cal.4th 859, 874-875 reaffirming the test set out in *County of Los Angeles* (1987) 43 Cal.3d 46, 56.

[228] *San Diego Unified School Dist. v. Commission on State Mandates* (2004) 33 Cal.4th 859, 874-875, 878; *Lucia Mar Unified School District v. Honig* (1988) 44 Cal3d 830, 835.

- The mandated activity results in the local agency or school district incurring increased costs, within the meaning of section 17514. Increased costs, however, are not reimbursable if an exception identified in Government Code section 17556 applies to the activity.[229]

The Commission is vested with the exclusive authority to adjudicate disputes over the existence of state-mandated programs within the meaning of article XIII B, section 6 of the California Constitution.[230] The determination whether a statute or executive order imposes a reimbursable state-mandated program is a question of law.[231] In making its decisions, the Commission must strictly construe article XIII B, section 6 of the California Constitution, and not apply it as an "equitable remedy to cure the perceived unfairness resulting from political decisions on funding priorities."[232]

A. The Commission Has Jurisdiction Over This Test Claim.

1. The Test Claim Was Timely Filed and Has a Potential Period of Reimbursement Beginning January 1, 2016.

Government Code section 17551(c) provides that Test Claims "shall be filed not later than 12 months following the effective date of a statute or executive order, or within 12 months of incurring increased costs as a result of a statute or executive order, whichever is later."[233] The Commission's regulations effective at the time this claim was filed provided that "[f]or purposes of claiming based on the date of first incurring costs, 'within 12 months' means by June 30 of the fiscal year following the fiscal year in which increased costs were first incurred by the test claimant."[234]

The Test Claim was filed on June 30, 2017, more than a year after the effective date of the stormwater permit on January 1, 2016.[235] However, evidence shows that the earliest date when costs were first incurred as a result of the permit after its effective date was January 4, 2016.[236] Thus under the regulations at the time of filing, the

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[229] *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487; *County of Sonoma v. Commission on State Mandates* (2000) 84 Cal.App.4th 1265, 1284; Government Code sections 17514 and 17556.

[230] *Kinlaw v. State of California* (1991) 54 Cal.3d 326, 335.

[231] *County of San Diego v. State of California* (1997) 15 Cal.4th 68, 109.

[232] *County of Sonoma v. Commission on State Mandates* (2000) 84 Cal.App.4th 1265, 1280 citing *City of San Jose v. State of California* (1996) 45 Cal.App.4th 1802, 1817.

[233] Government Code section 17551(c) (Stats. 2007, ch. 329).

[234] California Code of Regulations, title 2, section 1183.1(c) (Register 2016, No. 38).

[235] Exhibit A, Test Claim, pages 4 (Written Narrative), 383 (test claim permit).

[236] Exhibit A, Test Claim, page 78 (Declaration of James Scanlin, Associate Environmental Compliance Specialist, Alameda County).

claimant had until June 30, 2017 to file its claim. The Test Claim was filed on June 30, 2017, and is therefore timely.[237]

Government Code section 17557(e) requires a test claim to be "submitted on or before June 30 following a fiscal year in order to establish eligibility for reimbursement for that fiscal year." Because the Test Claim was filed on June 30, 2017, the potential period of reimbursement under Government Code section 17557 begins on July 1, 2015. However, since the test claim permit has a later effective date, the potential period of reimbursement for this claim begins on the permit's effective date, or January 1, 2016.

2. The Claimants Are Not Required to Exhaust Administrative Remedies with the State Water Board Prior to Filing a Test Claim with the Commission.

The Regional Board asserts that the Test Claim is untimely since the claimant should have challenged the provisions implementing the TMDLs to the State Water Board. It contends that the load reduction requirements in the mercury and PCBs TMDLs have been known about since their adoption in 2008, and that permittees had been active participants in the TMDLs development.[238] Furthermore the permittees were active participants in the pilot Green Infrastructure program and discussions on scaling up the program over the course of the prior permit.[239] If the claimant was concerned that the TMDLs created unfunded state mandates, it should have challenged them on such grounds.[240] The Regional Board asserts that this Test Claim is a collateral attack on the TMDLs by way of the test claim permit's provisions, and is not timely.[241]

The Regional Board's argument is unfounded. The Commission, and not the State Water Board, has exclusive jurisdiction to determine whether a statute or executive order imposes a reimbursable state-mandated program.[242]

In *Department of Finance v. Commission on State Mandates*, the Court explained, "The Legislature has enacted comprehensive procedures for the resolution of reimbursement claims and created the Commission to adjudicate them."[243] The Court distinguished

[237] Exhibit A, Test Claim, page 4.

[238] Exhibit C, Regional Board's Late Comments on the Test Claim, page 39.

[239] Exhibit C, Regional Board's Late Comments on the Test Claim, page 39.

[240] Exhibit C, Regional Board's Late Comments on the Test Claim, page 39.

[241] Exhibit C, Regional Board's Late Comments on the Test Claim, page 39.

[242] Government Code section 17552; *County of Los Angeles v. Commission on State Mandates* (2007) 150 Cal.App.4th 898, 917-920, which concludes that NPDES permits are executive orders pursuant to Government Code section 17516 and that the existence of a state mandate is a matter for the Commission's determination.

[243] *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 759.

between challenging the substance of a stormwater permit and seeking reimbursement under article XIII B, section 6 in the context of a test claim:

> Certainly, in a trial court action challenging the board's authority to impose specific permit conditions, the board's findings regarding what conditions satisfied the federal standard would be entitled to deference. (See, e.g., *City of Rancho Cucamonga v. Regional Water Quality Control Bd*. (2006) 135 Cal.App.4th 1377, 1384, 38 Cal.Rptr.3d 450, citing *Fukuda v. City of Angels* (1999) 20 Cal.4th 805, 817-818, 85 Cal.Rptr.2d 696, 977 P.2d 693) Resolution of those questions would bring into play the particular technical expertise possessed by members of the regional board. In those circumstances, the party challenging the board's decision would have the burden of demonstrating its findings were not supported by substantial evidence or that the board otherwise abused its discretion. (*Rancho Cucamonga*, at p. 1387, 38 Cal.Rptr.3d 450; *Building Industry* [*Assn. of San Diego County v. State Water Resources Control Board* (2004)] 124 Cal.App.4th [866,] 888-889, 22 Cal.Rptr.3d 128.)
>
> Reimbursement proceedings before the Commission are different. The question here was not whether the Regional Board had authority to impose the challenged requirements. It did. The narrow question here was who will pay for them. In answering that legal question, the Commission applied California's constitutional, statutory, and common law to the single issue of reimbursement. In the context of these proceedings, the State has the burden to show the challenged conditions were mandated by federal law.
>
> [¶…¶]
>
> Moreover, the policies supporting article XIII B of the California Constitution and section 6 would be undermined if the Commission were required to defer to the Regional Board on the federal mandate question.[244]

Thus, the Commission's role is different from a direct challenge on the merits of the permit's TMDL load allocations: "[t]he narrow question here [is] who will pay" for an alleged mandate, which the Commission is charged with determining in the first instance.[245]

Therefore, the claimant is not required to exhaust administrative remedies with the State Water Board prior to filing a Test Claim with the Commission.

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[244] *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 768-769.

[245] *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 769.

3. The Commission Does Not Have the Authority to Re-Address the Monitoring Requirements in Provision C.8. Imposed by the Prior Permit, Since the Legal Findings on that Provision in Test Claim *California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2009-0074*, 10-TC-02, 10-TC-03, and 10-TC-05, Are Final and Binding.

The claimant seeks reimbursement for the continuing costs to comply with the monitoring requirements found in Provision C.8., which were originally required by the prior 2009 permit (Order R2-2009-0074). The Test Claim acknowledges these activities were already addressed in the prior Test Claim (*California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2009-0074*, 10-TC-02, 10-TC-03, and 10-TC-05) and the claimant has not alleged any new requirements imposed by Provision C.8. of the test claim permit, but the claimant pled the activities again "out of an abundance of caution."[246]

The Commission addressed the monitoring requirements in Provision C.8. imposed by the prior permit (Order R2-2009-0074) in Test Claim *California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2009-0074*, 10-TC-02, 10-TC-03, and 10-TC-05 and issued a Decision on January 24, 2025.[247] In its Decision, the Commission found that reimbursement was required under article XIII B, section 6 for the following activities arising out of Provision C.8. until December 31, 2017:

> Geomorphic Study
>
> - Permittees shall select a waterbody/reach, preferably one containing significant fish and wildlife resources, and conduct one of the following projects within each county, except only one such project must be completed within the collective Fairfield-Suisun and Vallejo Permittees' jurisdictions:
>
> (1) Gather geomorphic data to support the efforts of a local watershed partnership [fn. omitted] to improve creek conditions; or
>
> (2) Inventory locations for potential retrofit projects in which decentralized, landscape-based stormwater retention units can be installed; or
>
> (3) Conduct a geomorphic study which will help in development of regional curves which help estimate equilibrium channel conditions for different-sized drainages. Select a waterbody/reach not

[246] Exhibit A, Test Claim, page 11 (Written Narrative).

[247] See Commission on State Mandates, Test Claim Decision on *California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2009-0074,* 10-TC-02, 10-TC-03, 10-TC-05, adopted January 24, 2025, https://csm.ca.gov/matters/10-TC-01-02-03-05/doc68.pdf (accessed February 27, 2025).

undergoing changing land use. Collect and report the following data:

- Formally surveyed channel dimensions (profile), planform, and cross-sections. Cross-sections shall include the topmost floodplain terrace and be marked by a permanent, protruding (not flush with ground) monument.
- Contributing drainage area.
- Best available information on bankfull discharges and width and depth of channel formed by bankfull discharges.
- Best available information on average annual rainfall in the study area.

- Report selected geomorphic project results in the Integrated Monitoring Report. [R2-2009-0074 section C.8.d.iii]

Sediment Delivery Estimate/Budget

- Permittees shall develop a design for a robust sediment delivery estimate/sediment budget in local tributaries and urban drainages by July 1, 2011, and implement the study by July 1, 2012. [R2-2009-0074 section C.8.e.vi]

Citizen Monitoring and Participation – for the City of Vallejo and the Vallejo Sanitary District only:

- Encourage Citizen Monitoring
- In developing Monitoring Projects and evaluating Status & Trends data, make reasonable efforts to seek out citizen and stakeholder information and comment regarding waterbody function and quality.
- Demonstrate annually the permittee has encouraged citizen and stakeholder observations and reporting of waterbody conditions. Report on these outreach efforts in the annual Urban Creeks Monitoring Report. [R2-2009-0074 section C.8.f]

Monitoring Reporting and Notice

- Permittees shall maintain an information management system that supports electronic transfer of data to the Regional Data Center of the California Environmental Data Exchange Network (CEDEN), located within the San Francisco Estuary Institute. [R2-2009-0074 section C.8.g.ii, footnote 46]
- Permittees shall submit an Electronic Status Monitoring Data Report, compatible with the SWAMP database, no later than January 15 of each year, reporting on all data collected during the previous October 1-September 30 period. Water quality objective

exceedances are required to be highlighted in the report. [R2-2009-0074 section C.8.g.ii]

- Permittees shall notify stakeholders and members of the general public about the availability of electronic and paper monitoring reports through notices distributed through appropriate means, such as an electronic mailing list. [R2-2009-0074 section C.8.g.vii][248]

All other activities in the prior permit's Provision C.8. were denied.

The Commission's Decision on the prior Test Claim is a final, binding decision, which cannot be disturbed unless litigated and directed by the court to be set aside or modified pursuant to Government Code section 17559(b) or a request for a new test claim decision based on a subsequent change in the law is filed pursuant to Government Code section 17570.[249]

Moreover, Government Code section 17553(b)(1) requires that a test claim include a detailed description of the new activities and costs that arise from the alleged mandate and a detailed description of existing activities and costs that are modified by the alleged mandate. The claimant does not allege that this Test Claim permit requires any new activities for Provision C.8. when compared to the prior permit, and there are no allegations that the activities in Provision C.8. found to be state mandates under the prior permit have changed.

Therefore, the Commission does not have the authority to re-address the monitoring requirements in Provision C.8. of the test claim permit.

4. The Requirements Pled in the 2015 Test Claim Permit Are Compared to the Law in Effect Immediately Prior to the Adoption of the Test Claim Permit, Including the 2009 Permit, to Determine if the Activities Required by the 2015 Test Claim Permit Are New.

The claimant also argues that the trash load reduction deadlines required by the test claim permit of 70 percent reduction by July 1, 2017 and 100 percent reduction by July 1, 2022 are new, even if they were required by the prior 2009 permit, because the 2009 prior permit was rescinded when the test claim permit took effect.[250]

In other words, the claimant wants the Commission to interpret stormwater permits as contracts that expire, and that every permit is a new contract, at least for this specific

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[248] Commission on State Mandates, Test Claim Decision on *California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2009-0074,* 10-TC-02, 10-TC-03, 10-TC-05, adopted January 24, 2025, https://csm.ca.gov/matters/10-TC-01-02-03-05/doc68.pdf (accessed February 27, 2025), pages 370-372.

[249] *California School Boards Assoc. v. State of California* (2009) 171 Cal.App.4th 1183, 1200.

[250] Exhibit A, Test Claim, page 22 (Written Narrative).

issue, as it does not attempt to take this position with any other requirements continued from the prior permit. This interpretation is not consistent with article XIII B, section 6 or the courts' interpretation of these permits as executive orders.

Under the Clean Water Act, the term of an NPDES permit is five years.[251] However, states authorized to administer the NPDES program may continue the state-issued permit until the effective date of a new permit, if state law allows.[252] California's regulations provide that the terms and conditions of an expired permit are automatically continued pending issuance of a new permit if all requirements of the federal NPDES regulations on continuation of expired permits have been complied with.[253] Thus, there was no gap in time between the prior permit and the test claim permit.

The courts have found NPDES permits are executive orders issued by a state agency within the meaning of article XIII B, section 6.[254] The purpose of article XIII B, section 6 is to prevent the state from forcing extra programs on local government each year in a manner that negates their careful budgeting of increased expenditures counted against the local government's annual spending limit and, thus, article XIII B, section 6 requires a showing that the test claim statute or executive order mandates *new* activities and associated costs compared to the prior year.[255] This was the case in *Department of Finance. v. Commission on State Mandates* (2021) 59 Cal.App.5th 546. There, the court found installing and maintaining trash receptacles at transit stops and performing certain inspections, as required by that stormwater permit, were *new duties* that local governments were required to perform, when compared to prior law ("the mandate to install and maintain trash receptacles at transit stops is a 'new program' within the meaning of section 6 because it was not required prior to the Regional Board's issuance of the permit").[256]

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[251] 33 United States Code section 1342(b).

[252] Code of Federal Regulations, title 40, section 122.6(d).

[253] California Code of Regulations, title 23, section 2235.4.

[254] *County of Los Angeles v. Commission on State Mandates* (2007) Cal.App.4th 898, 905, 919-920; *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 762; *Department of Finance. v. Commission State Mandates* (2021) 59 Cal.App.5th 546, 558.

[255] California Constitution, articles XIII B, sections 1, 8(a) and (b); *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56; *Lucia Mar Unified School Dist. v. Honig* (1988) 44 Cal.3d 830, 835; *Hayes v. Commission on State Mandates* (1992) 11 Cal.App.4th 1564, 1595; *County of Sonoma v. Commission on State Mandates* (2000) 84 Cal.App.4th 1264, 1283; *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 763.

[256] *Department of Finance. v. Commission State Mandates* (2021) 59 Cal.App.5th 546, 558.

Other examples include *Lucia Mar Unified School Dist.*, which addressed a 1981 test claim statute requiring local school districts to pay the cost of educating pupils in state schools for the severely handicapped — costs the state had previously paid in full until the 1981 statute became effective.[257] The court held the requirement imposed on local school districts to fund the cost of educating these pupils was new "*since at the time [the test claim statute] became effective* they were not required to contribute to the education of students from their districts at such schools."[258] The same analysis was applied in *County of San Diego*, where the court found the state took full responsibility to fund the medical care of medically indigent adults in 1979, which lasted until the 1982 test claim statute shifted the costs back to counties.[259] In *City of San Jose*, the court addressed a 1990 test claim statute, which authorized counties to charge cities for the costs of booking into county jails persons who had been arrested by employees of the cities.[260] The court denied the city's claim for reimbursement, finding the costs were not shifted by the state since "*at the time [the test claim statute] was enacted*, and indeed long before that statute, the financial and administrative responsibility associated with the operation of county jails and detention of prisoners was borne entirely by the county."[261] In *San Diego Unified School District*, the court determined the required activities imposed by test claim statutes, which addressed the suspension and expulsion of K-12 students from school, were "new in comparison with the preexisting scheme in view of the circumstances that they did not exist prior to the enactment of [the test claim statutes]."[262]

Thus, it is not legally correct or consistent with article XIII B, section 6 to ignore the requirements imposed on the claimants by the prior permit to determine what is new.

Therefore, the requirements pled in the 2015 test claim permit are compared to the law in effect immediately prior to the adoption of the test claim permit, including the 2009 permit, to determine if the activities required by the 2015 test claim permit are new.

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[257] *Lucia Mar Unified School Dist. v. Honig* (1988) 44 Cal.3d 830, 832.

[258] *Lucia Mar Unified School Dist. v. Honig* (1988) 44 Cal.3d 830, 835, emphasis added.

[259] *County of San Diego v. State of California* (1997) 15 Cal.4th 68, 91.

[260] *City of San Jose v. State* (1996) 45 Cal.App.4th 1802.

[261] *City of San Jose v. State* (1996) 45 Cal.App.4th 1802, 1812, emphasis added.

[262] *San Diego Unified School Dist. v. Commission on State Mandates* (2004) 33 Cal.4th 859, 878; see also page 869, footnotes 6 and 7, and page 870, footnote 9, where the court describes in detail the state of the law immediately before the enactment of the 1993 test claim statutes.

B. Some of the Requirements Imposed by the Provisions of the Test Claim Permit Pled Impose New State-Mandated Requirements that Constitute a New Program or Higher Level of Service Within the Meaning of Article XIII B, Section 6 of the California Constitution.

1. The Requirements Pled in Provisions C.10.a.i., ii., and iii. and C.10.b.i. and ii, Addressing the Reduction of Trash Loads, Do Not Mandate New Programs or Higher Levels of Service.

a. The claimant's pleadings regarding Provisions C.10.a. and C.10.b. are vague and ambiguous; the written narrative and declarations only identify some of the requirements found in Provisions C.10.a.i., ii., and iii., relating to the schedule and deadline for the reduction of trash and the installation of full trash capture devices and other control measures, and in C.10.b.i. and ii., to maintain their full trash capture systems, and thus discussion of the trash provisions is limited to these provisions.

The Government Code requires that a test claim's written narrative identify the specific sections of the statutes or executive orders pled and provide a detailed description of the new activities that are alleged to contain a mandate.[263] The Government Code also requires the Test Claim to be supported with declarations signed under penalty of perjury, which identify the actual or estimated increased costs incurred to implement the alleged new mandated activities.[264] It is not enough under the Government Code to generally cite a statute or executive order in the test claim, without a discussion of the specific sections and detailed discussion of the new activities and costs alleged to be reimbursable.

This Test Claim requests reimbursement to comply with Provisions C.10.a. (Trash Reduction Requirements) and C.10.b. (Demonstration of Trash Reduction Outcomes).[265] These provisions contain several subsections each, but the Test Claim does not specifically identify the subsections or all of the requirements in these subsections. Instead, the narrative and the declaration filed with the Test Claim generally refer to Provisions C.10.a. and C.10.b. and limit the discussion of the "new" requirements as described below.

With respect to Provision C.10.a., the Test Claim requests reimbursement for the following requirements:

- Compliance with "a new schedule and deadline" for the reduction of trash; namely, 70 percent reduction by July 1, 2017, and 80 percent reduction by July 1, 2019.

  The Test Claim narrative and declaration acknowledge that the prior permit required the permittees to achieve phased annual reductions in trash loading,

[263] Government Code section 17553(b)(1)(A).

[264] Government Code section 17553(b)(2).

[265] Exhibit A, Test Claim, pages 21-24 (Written Narrative).

culminating in a 100 percent reduction by 2022 and included an enforceable deadline of 40 percent reduction by 2014. However, the narrative and declaration allege that the prior permit was rescinded when the test claim permit took effect, that the 2017 deadline is a new enforceable mandatory deadline where previously it was only a goal, and the 2019 deadline requiring an 80 percent reduction in trash is a new mandated requirement.[266]

The schedule and deadlines for the reduction of trash are in Provision C.10.a.i. of the test claim permit.[267]

- The Test Claim also identifies costs incurred under the prior permit to install full trash capture systems and estimates costs to install trash capture devices "to comply with MRP2" (the test claim permit) as follows:

> As part of the City's Long Term Trash Reduction Plan, in June 2015, the City commissioned United Storm Water, Inc. to install an additional 200 full trash capture devices for a total of $99,994.52. The City had anticipated the new full trash capture installation requirements set forth in the MRP2 and commissioned the installation of the trash capture devices in order to comply with Provision C.10 just prior to the MRP2's effective date. This cost was paid out of the City's clean water fund. The City had previously installed 150 units, paid by a grant from the EPA. The City is planning to install an additional 200 units in the summer of 2018, totaling 550 full trash capture devices. It is estimated that the purchase and installation of the additional 200 devices will cost the City another $100,000. Therefore, in total, Union City's cost to install trash capture devices required to comply with the MRP2 is approximately $200,000.[268]

- The Test Claim identifies the following best management practices and control measures, including those other than full trash capture devices, used by the claimant to achieve the reduction deadlines:

> City staff has worked to identify best management practices and control measures that they believe will be necessary in order to achieve the target of 100% trash reduction from municipal separate storm sewer systems by July 1, 2022, and with interim milestones of 70% reduction by July 1, 2017 and 80% by July 1, 2019, as required by Provision C.10.a. These practices and measures include the following:

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[266] Exhibit A, Test Claim, pages 21-22, 38-39 (Declaration of Thomas Ruark, City Engineer, City of Union City).

[267] Exhibit A, Test Claim, page 476 (Test Claim Permit, Provision C.10.a.i.).

[268] Exhibit A, Test Claim, pages 23, 42-43 (Declaration of Thomas Ruark, City Engineer, City of Union City).

- Installed full trash capture devices in our high trash generating areas
- Increased cleaning of Continuous Deflection Separators (CDS) Units and Catch basins pre and post storm event season.
- Increased public awareness by installing clean water advertisement in all of Union City's transit buses
- Increased Public Outreach with at least 8 different yearly events
- Distributed over 500 reusable bags
- Passed a Plastic Bag Ban
- Conducted a least two creek clean up events per year
- Utilized Work furlough crews to assist in weekly trash pick-up along major arterials and collector streets.
- Installed over 150 trash capture devices (TCD) in our city-owned catch basins which surround our retail and commercial properties as well as a portion of our high density residential properties.
- In addition, the City has a total of 12 CDS units installed on both private and public properties.

It is estimated that these measures serve a combined area of 293.28 acres.[269]

Implementing trash prevention and control actions such as full trash capture devices and other control measures to achieve the reduction of trash requirements are in Provisions C.10.a.ii. and C.10.a.iii. and, although not specifically cited in the Test Claim, this Decision will address those provisions with respect to full trash capture devices and other control measures since activities and costs have been alleged.

However, Provision C.10.a.ii. imposes additional requirements to map the location, or otherwise record the location, of all lands greater than 10,000 square feet not owned by the permittee but plumbed to the permittee's storm drain systems in Very High, High, or Moderate trash generation areas by July 1, 2018, identify the trash control status of these areas, and retain this documentation for inspection.[270] These requirements have not been identified in the Test Claim or the declaration submitted with the Test Claim and, thus, have not been pled in accordance with Government Code section 17553 and, therefore, this Decision will not address those requirements.

[269] Exhibit A, Test Claim, pages 23-24 (Written Narrative); 43-44 (Declaration of Thomas Ruark, City Engineer, City of Union City).

[270] Exhibit A, Test Claim, page 477 (test claim permit, Provision C.10.a.ii.b.).

The Test Claim's allegations regarding Provision C.10.b. are also not clear. The Test Claim states the following:

> Provision C.10.b requires Permittees to maintain, and provide for inspection and review upon request, documentation of the design, operation, and maintenance of each of their full trash capture systems, including the mapped location and drainage area served by each system. (MRP2 at 99-102.) This provision specifies detailed full trash capture system installation and maintenance instructions, which are more prescriptive, burdensome and costly than MRP1 to fulfill. The MRP1 generally required Permittees to install and maintain full trash capture devices, which allowed each municipality greater discretion in identifying effective as well as cost efficient methods for meeting trash load reduction goals. Now, under the MRP2, compliance by means of Other Trash Management Actions (meaning non-full trash capture systems) has become so burdensome and costly that Union City has determined installation of full trash capture systems is the least costly compliance option. Provision C.10.b requires increased activities by Union City that are best characterized as a higher level of service in comparison to the MRP1.[271]

Although the paragraph above references the pages in the test claim permit for Provision C.10.b. in its entirety, the only activity specifically identified by the Test Claim is the "detailed full trash capture system installation and maintenance instructions, which are more prescriptive, burdensome and costly than MRP1 to fulfill." The Test Claim makes the following claims regarding the costs incurred to maintain the full capture systems:

> In April 2017, the City adopted a resolution approving an appropriation of $432,500.57 from the City's Vehicle Replacement Fund and awarded a contract in the amount of $432,423.57 to Owen Equipment of Fairfield, California for the procurement of one Storm Drain Cleaner. This contract award was determined to be vital to minimize stormwater pollution, and maintain and clean the newly installed full trash capture devices so as to be in compliance with the MRP2. The City had already owned a Vactor truck; however, it is an old device and unable to fulfill the full trash capture maintenance requirements set forth in the MRP2. Renting a Vactor truck costs $10,000 per month. The City ultimately determined that purchasing a new Vactor truck would be more cost effective than renting a device. The procurement for the equipment purchase was made available from the City's Vehicle Replacement Fund.
>
> The MRP2 requires the City to clean the trash capture devices twice a year. It will take an estimated three months to clean all 550 units once.

[271] Exhibit A, Test Claim, pages 22-23 (Written Narrative); see also, page 39 (Declaration of Thomas Ruark, City Engineer, City of Union City).

> Three months of crew time of the Vactor crew is estimated to cost $42,500. Thus, cleaning the units twice per year will take the City six months. At a cost of $85,000 for labor for six months of the crew time, yearly maintenance costs are estimated to total $145,000.[272]

Provision C.10.b.i.a.-c. addresses the requirements to maintain, and provide for inspection and review upon request, documentation of the design, operation, and maintenance of each of their full trash capture systems, and this Provision is addressed in this Decision.[273]

And Provision C.10.b.ii. addresses the maintenance and inspection of documentation for the non-full trash capture control actions.[274] Since performing non-full trash capture control actions is discussed in the Test Claim narrative, this Decision will address Provision C.10.b.ii.

However, there is no discussion, request for reimbursement, or identification of any costs incurred to comply with Provisions C.10.b.iii., iv., and v. These provisions state the formula to be used when calculating a permittee's total percent trash load reduction; allow permittees to claim up to ten percent of their trash load reduction using jurisdiction-wide source control actions, with substantive and credible evidence of the control action's claimed effectiveness; and require permittees to conduct receiving water monitoring and develop receiving water monitoring tools and protocols and a receiving water monitoring program to determine if their control actions are effective.[275] Thus, the requirements in Provision C.10.b.iii.-v. have not been pled in accordance with Government Code section 17553 and this Decision will not address these subsections.

Accordingly, based on the Test Claim pleading, the activities in Provision C.10.a. specifically identified above, and Provisions C.10.b.i. and ii., are addressed below.

b. Provision C.10.a.i., ii., and iii. require permittees to implement trash control measures and other actions to reduce trash loads by a specified schedule, and Provision C.10.b.i. and ii. require permittees to maintain documentation on their full trash capture systems and other control actions and specify adequate inspection and maintenance as specified.

Provision C.10., in its introductory paragraph, requires permittees to "demonstrate compliance with Discharge Prohibition A.1., for trash discharges, Discharge Prohibition A.2., and trash-related Receiving Water Limitations through the timely implementation of control measures and other actions to reduce trash loads from municipal separate storm

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[272] Exhibit A, Test Claim, pages 23-24 (Written Narrative); 42-44 (Declaration of Thomas Ruark, City Engineer, City of Union City).

[273] Exhibit A, Test Claim, page 478 (test claim permit, Provision C.10.b.i.).

[274] Exhibit A, Test Claim, pages 478-479 (test claim permit, Provision C.10.b.ii.).

[275] Exhibit A, Test Claim, pages 479-481 (test claim permit, Provisions C.10.b.iii., iv., and v.).

sewer systems."[276] Discharge prohibitions A.1. and A.2. prohibit non-stormwater discharges and states that "[i]t shall be prohibited to discharge rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas."[277]

Provisions C.10.a.i., ii. and iii. and C.10.b.i. and ii. describe the following requirements:

- Trash Reduction Requirements:

  Provision C.10.a.i. requires that the permittees shall implement trash load reduction control actions in accordance with the following schedule, to meet the goal of 100 percent trash load reduction or no adverse impact to receiving waters from trash by July 1, 2022. Permittees shall reduce trash discharges from their 2009 levels to receiving waters in accordance with the following schedule:

  a. 70 percent by July 1, 2017; and

  b. 80 percent by July 1, 2019.[278]

  Provision C.10.a.ii.a. states that "Permittees shall implement trash prevention and control actions, including full trash capture systems or other trash management actions, or combinations of actions, with trash discharge control equivalent to or better than full trash capture systems, to reduce trash generation to a Low trash generation rate or better."[279]

  Provision C.10.a.ii.b. states that "Permittees shall ensure that lands that they do not own or operate, but that are plumbed directly to their storm drain systems in Very High, High, and Moderate trash generation areas are equipped with full trash capture systems or are managed with trash discharge control actions equivalent to or better than full trash capture systems."[280]

  Provision C.10.a.iii. requires that "Permittees shall install and maintain a mandatory minimum number of full trash capture devices, to treat runoff from an area equivalent to 30 percent of retail/wholesale land area, as documented by the Association of Bay Area Governments, which drains to the storm drain system within their jurisdictions."[281]

- Maintenance of Full Trash Capture Systems:

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[276] Exhibit A, Test Claim, page 476 (test claim permit, Provision C.10.).

[277] Exhibit A, Test Claim, page 384 (test claim permit, Provisions A.1 and A.2).

[278] Exhibit A, Test Claim, page 476 (test claim permit, Provision C.10.a.i.).

[279] Exhibit A, Test Claim, page 477 (test claim permit, Provision C.10.a.ii.a.).

[280] Exhibit A, Test Claim, page 477 (test claim permit, Provision C.10.a.ii.b.).

[281] Exhibit A, Test Claim, page 477 (test claim permit, Provision C.10.a.iii.).

Provision C.10.b.i.a. requires that the maintenance of each full capture device shall be adequate to prevent plugging, including plugging of the 5 mm screen leading to trash overflow and bypass, flooding, or a full condition of the device's trash reservoir causing bypassing of trash.[282]

This provision also requires that all full trash capture devices shall be inspected and maintained at least once per year. All such devices in High or Very High trash generation areas shall be inspected at least two times per year, with the inspections spaced at least three months or more apart. If this frequency of inspection is found excessive after two inspections, the inspection frequency can be reduced to once per year.[283]

Finally, this provision states that "[i]f any such device is found to have a plugged or blinded screen or is greater than 50 percent full of trash during a maintenance event, the maintenance frequency shall be increased so that the device is neither plugged nor more than half full of trash at the next maintenance event."[284]

Provision C.10.b.i.b. requires permittees to retain device specific maintenance records, including, at a minimum: the date(s) of maintenance, the capacity condition of the device at the time of maintenance (full and overflowing or with storage capacity remaining), any special problems such as flooding, screen blinding or plugging from leaves, plastic bags, or other debris causing overflow, damage reducing function, or other negative conditions. A summary of this information shall be reported in each Annual Report which may be limited to the number of full capture devices maintained that exhibited a plugged, full or overflowing condition upon maintenance.[285]

Provision C.10.b.i.c. requires the permittees to annually certify that each of their full trash capture systems is operated and maintained to meet full trash capture system requirements.[286]

- Maintenance of Other Trash Actions:

  Provision C.10.b.ii.a. requires permittees to maintain, and provide for inspection and review upon request, documentation of non-full trash capture system control actions that verify implementation of each action. The provision states:

  "Permittees shall maintain documentation of trash control actions that describes each action or combination of actions, the level of implementation, the timing and frequency of implementation, standard operating procedures if applicable, location(s) of implementation actions including mapped location(s) and drainage

[282] Exhibit A, Test Claim, page 478 (test claim permit, Provision C.10.b.i.a.).

[283] Exhibit A, Test Claim, page 478 (test claim permit, Provision C.10.b.i.a.).

[284] Exhibit A, Test Claim, page 478 (test claim permit, Provision C.10.b.i.a.).

[285] Exhibit A, Test Claim, page 478 (test claim permit, Provision C.10.b.i.b.).

[286] Exhibit A, Test Claim, page 478 (test claim permit, Provision C.10.b.i.c.).

area(s) affected or description of areal extent, tracking and enforcement procedures if applicable, and other information relevant to effective implementation of the action or combination of actions."[287]

- Visual Assessment of Outcomes of Other Trash Management Actions:

  Provision C.10.b.ii.b. requires permittees to conduct visual on-land assessment, including photo documentation, or other acceptable assessment method, of each trash generation area within which it is implementing other trash management actions or combination of actions other than full trash capture, to determine or verify the effectiveness of the action or combination of actions. Permittees may assess and account for one or more trash generation areas in a single trash management area within which a control action or combination of control actions is implemented. The visual on-land assessment method used shall meet or exceed the following criteria: conduct observations of the sidewalk, curb and gutter, locations associated with trash generation sources, randomly selected locations covering at least ten percent of a trash management area's street miles, and at a frequency consistent with known or estimated trash generation rates.[288]

The test claim permit specifies that flood management agencies are not subject to the requirements in C.10. "except for continued implementation of requirements for full trash capture systems. . . , as specified in subsection C.10.b.i. . . ."[289]

Additionally, C.10.a.i also states that permittees "should" achieve 60 percent reduction by July 1, 2016, but clarifies this is not a mandatory deadline, but rather a performance guideline.[290] It is essentially meant to show the permittee is on track to meet its actual deadlines, or to give warning if a permittee needs to step up its efforts. If a permittee does not meet this performance guideline, it shall submit documentation of a plan and schedule of additional trash load reduction control actions that will attain the July 1, 2017 deadline.[291] This is not a required activity from the state, as the additional documentation is only required if a permittee fails to meet the performance guideline, which will not happen if the permittee is complying with its existing obligation to attain 70 percent reduction by July 1, 2017.

Both the prior permit and the test claim permit indicate trash to be a pervasive problem near and in creeks and in San Francisco Bay. Trash is defined to consist of litter and particles of litter, using the definition of litter from Government Code section 68055.1(g) to mean "all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of

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[287] Exhibit A, Test Claim, page 479 (test claim permit, Provision C.10.b.ii.a.).

[288] Exhibit A, Test Claim, page 479 (test claim permit, Provision C.10.b.ii.b.).

[289] Exhibit A, Test Claim, page 476 (test claim permit, Provision C.10.).

[290] Exhibit A, Test Claim, page 476 (test claim permit, Provision C.10.a.i.).

[291] Exhibit A, Test Claim, page 476 (test claim permit, Provision C.10.a.i.).

steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the state, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling, and manufacturing."[292] The Fact Sheet explains the significant impact of trash on the environment as follows:

> Controlling trash continues to be one of the priorities for this Permit reissuance, not only because of the trash discharge prohibition, but also because trash causes major impacts on our enjoyment of creeks and the Bay. There are also significant impacts on aquatic life and habitat in those waters, and eventually to the global ocean ecosystem, where plastic often floats; persists in the environment for hundreds of years - if not forever; concentrates organic toxins; and is ingested by aquatic life. There are also physical impacts, as aquatic species can become entangled and ensnared, and can ingest plastic that looks like prey, losing the ability to feed properly.[293]

The Commission finds that these requirements do not impose a new program or higher level of service, as discussed below.

c. <u>The requirements pled in Provisions C.10.a.i., ii., and iii. and C.10.b.i. and ii. are not new.</u>

i. Prior law required the permittees to implement control measures and other actions to comply with federal and state prohibitions on discharging trash; the prior permit set a schedule for achieving compliance of 40% reduction by 2014, 70% reduction by 2017, and 100% by 2022.

Federal law prohibits non-stormwater discharges and requires controls to reduce the discharge of pollutants to the maximum extent possible. Trash is addressed in the CWA as both a stormwater discharge and an illicit non-stormwater discharge. Federal law defines stormwater as "storm water runoff, snow melt runoff, and surface runoff and drainage; events related to precipitation," which can carry with it pollutants such as trash.[294] A discharge to an MS4 that "is *not* composed entirely of stormwater" is

[292] Exhibit A, Test Claim, page 619 (test claim permit, Fact Sheet, Finding C.10-1.).

[293] Exhibit A, Test Claim, page 619 (test claim permit, Fact Sheet, Finding C.10-1.).

[294] Code of Federal Regulations, title 40, section 122.26(b)(13).

considered a non-stormwater, or dry weather discharge.[295] A non-stormwater discharge that is prohibited by law is an illicit discharge.[296]

Federal law requires permits for discharges from municipal stormwater systems "shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers," unless those discharges are conditionally exempted from this prohibition.[297] Trash is not an exempted discharge and, thus, must be effectively prohibited under federal law. The test claim permit defines trash as follows:

> Trash consists of litter and particles of litter. California Government Code Section 68055.1 (g) defines litter as all improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the State, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling, or manufacturing.[298]

To "effectively prohibit" non-stormwater discharges requires implementation of a program to detect and remove illicit discharges. This shall include:

- A description of procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens.
- A description of procedures to be followed to investigate portions of the separate storm sewer system that, based on the results of the field screen, or other appropriate information, indicate a reasonable potential of containing illicit discharges or other sources of non-stormwater.
- A description of procedures to prevent, contain, and respond to spills that may discharge into the municipal separate storm sewer.[299]

Federal law also requires permits for discharges from municipal stormwater systems "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design

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[295] Code of Federal Regulations, title 40, section 122.26(b)(2) defines "illicit discharge" as "any discharge to a municipal separate storm sewer that is *not* composed entirely of storm water except discharges pursuant to a NPDES permit (*other than the NPDES permit for discharges from the municipal separate storm sewer*) and discharges resulting from firefighting activities." Emphasis added.

[296] Exhibit A, Test Claim, page 527 (test claim permit, Glossary).

[297] United States Code, title 33, section 1342(p)(3)(B)(ii); Code of Federal Regulations, title 40, section 122.26(d)(2)(iv)(B)(1).

[298] Exhibit A, Test Claim, page 540 (test claim permit, Glossary).

[299] Code of Federal Regulations, title 40, section 122.26(d)(2)(iv)(B)(2)-(4).

and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."[300]

Applications for a large or medium municipal separate storm sewer discharge permit are required to include, "A description of the existing management programs to control pollutants from the municipal separate storm sewer system. The description shall provide information on existing structural and source controls, including operation and maintenance measures for structural controls, that are currently being implemented. Such controls may include, but are not limited to: Procedures to control pollution resulting from construction activities; floodplain management controls; wetland protection measures; best management practices for new subdivisions; and emergency spill response programs."[301]

The application shall also include a proposed management program, which involves public participation and intergovernmental coordination, "to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate."[302] The proposed management program is specifically required to include "A description of structural and source control measures to reduce pollutants from runoff from commercial and residential areas that are discharged from the municipal storm sewer system that are to be implemented during the life of the permit, accompanied with an estimate of the expected reduction of pollutant loads and a proposed schedule for implementing such controls."[303] Among other things, the control measures shall include "a description of maintenance activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers,"[304] and "a description of practices for operating and maintaining public streets, roads and highways and procedures for reducing the impact on receiving waters of discharges from municipal storm sewer systems, including pollutants discharged as a result of deicing activities."[305]

Finally, federal law requires an NPDES permittee to monitor its discharges into the waters of the United States in a manner sufficient to determine whether it is in

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[300] United States Code, title 33, section 1342(p)(3)(B)(iii).

[301] Code of Federal Regulations, title 40, section 122.26(d)(1)(v)(A).

[302] Code of Federal Regulations, title 40, section 122.26(d)(2)(iv).

[303] Code of Federal Regulations, title 40, section 122.26(d)(2)(iv)(A).

[304] Code of Federal Regulations, title 40, section 122.26(d)(2)(iv)(A)(1). Code of Federal Regulations, title 40, section 122.41(e) also requires "The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit."

[305] Code of Federal Regulations, title 40, section 122.26(d)(2)(iv)(A)(3).

compliance with the permit, which must ensure compliance with the Clean Water Act and its implementing regulations.[306]

Besides federal law, the state also adopted several statewide plans, including the prior permit, that prohibit trash. The 2007 Basin Plan prohibits floating materials, settleable materials, and suspended materials.[307] The Basin Plan also prohibits the discharge of rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or any place where they would contact or eventually be transported to surface waters.[308] These prohibitions have existed in the Basin Plan since it was adopted in 1975. In 2015, the Water Board amended the Ocean Plan and Inland Surface Waters and Inland Bays and Estuaries Plans to establish a narrative water quality objective prohibiting the discharge of trash.[309] Additionally, 26 water bodies in the permit area are listed on the Clean Water Act section 303(d) list as being impaired for trash, most of which are receiving waters for permittees' municipal storm drain systems.[310]

The prior permit required compliance with water quality standards and objectives and imposed monitoring requirements to ensure water quality standards were met as required by federal law. Specifically, the prior permit contained discharge prohibitions and receiving water limitations that required the permittees to effectively prohibit the discharge of non-stormwater into the storm drain systems and required discharges shall not cause or contribute to a violation of any applicable water quality standard or objective for the receiving waters that were contained in the Regional Board's Basin Plan.[311]

The prior permit further said that discharges shall not cause the following conditions to create a condition of nuisance or to adversely affect beneficial uses of waters of the State:

a. Floating, suspended, or deposited macroscopic particulate matter, or foam;

b. Bottom deposits or aquatic growths;

c. Alteration of temperature, turbidity, or apparent color beyond present natural background levels;

d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and

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[306] United States Code, title 33, section 1342(a)(2) (Public Law 100-4); Code of Federal Regulations, title 40, sections 122.44(i)(1), 122.43(a).

[307] Exhibit X (2), Basin Plan 2007, pages 74-75.

[308] Exhibit X (2), Basin Plan 2007, page 203 (Table 4-1).

[309] Exhibit X (3), Amendment to the Water Quality Control Plan for the Ocean Waters of California to Control Trash.

[310] Exhibit A, Test Claim, page 621 (test claim permit, Attachment A, Finding C.10-7).

[311] Exhibit A, Test Claim, page 91 (prior permit, Provision A).

e. Substances present in concentrations or quantities that would cause deleterious effects on aquatic biota, wildlife, or waterfowl, or that render any of these unfit for human consumption.[312]

Additionally, the prior permit included specific provisions regarding trash, which required that "[t]he Permittees shall demonstrate compliance with Discharge Prohibition A.2 and trash-related receiving water limitations through the timely implementation of control measures and other actions to reduce trash loads from municipal separate storm sewer systems (MS4s) by 40% by 2014, 70% by 2017, and 100% by 2022 as further specified below," giving the permittees more time to comply with the Basin Plan and discharge prohibitions on trash.[313] During the permit term, permittees were required to develop and implement a Short-Term Trash Load Reduction Plan to attain 40% reduction in trash loads by July 1, 2014, which included implementing a mandatory minimum level of full trash capture devices and maintenance of these devices; cleanup and abatement progress on a mandatory minimum number of Trash Hot Spots; and implementation of other control measures and best management practices.[314] One of the activities required as part of performing Trash Hotspot cleanup was to document the cleanup activities and assess their effectiveness by taking before and after photographs along the entire Trash Hotspot area at a minimum rate of one photo for every 50 feet of hot spot length.[315] The prior permit also required permittees to develop and begin implementation on a Long-Term Trash Load Reduction Plan to attain a 70% reduction in trash loads from their MS4s by July 1, 2017, and 100% by July 1, 2022.[316]

ii. The requirements in Provision C.10.a.i., ii., and iii. are not new and do not mandate a new program or higher level of service.

The plain language of Provision C.10.a.i. requires permittees to reduce trash discharges into receiving waters from their 2009 levels by 70 percent by July 1, 2017, and by 80 percent by July 1, 2019, with the ultimate goal of 100 percent trash load reduction or no adverse impact to receiving waters from trash by July 1, 2022.[317] Provision C.10.a.ii.a. states that "Permittees shall implement trash prevention and control actions, including full trash capture systems or other trash management actions, or combinations of actions, with trash discharge control equivalent to or better than full trash capture systems, to reduce trash generation to a Low trash generation rate or better."[318] The Fact Sheet explains that the permittees can use a variety of means to comply with this

[312] Exhibit A, Test Claim, page 91 (prior permit, Provision B).

[313] Exhibit A, Test Claim, page 174 (prior permit, Provision C.10).

[314] Exhibit A, Test Claim, page 174 (prior permit, Provision C.10.).

[315] Exhibit A, Test Claim, page 176 (prior permit, Provision C.10.b.iii.).

[316] Exhibit A, Test Claim, pages 174, 176 (prior permit, Provisions C.10 and C.10.c.).

[317] Exhibit A, Test Claim, page 476 (test claim permit, Provision C.10.a.i.).

[318] Exhibit A, Test Claim, page 477 (test claim permit, Provision C.10.a.ii.a.).

requirement.[319] Provision C.10.a.ii.b. states that "Permittees shall ensure that lands that they do not own or operate, but that are plumbed directly to their storm drain systems in Very High, High, and Moderate trash generation areas are equipped with full trash capture systems *or* are managed with trash discharge control actions equivalent to or better than full trash capture systems."[320] And Provision C.10.a.iii. requires that "Permittees shall install and maintain a mandatory minimum number of full trash capture devices, to treat runoff from an area equivalent to 30 percent of retail/wholesale land area, as documented by the Association of Bay Area Governments, which drains to the storm drain system within their jurisdictions."[321] The Fact Sheet explains that the requirement in Provision C.10.a.iii. "is carried forward from the previous permit."[322] These requirements do not mandate a new program or higher level of service.

The prior 2009 permit, required compliance with the water quality standards in the Basin Plan, including the prohibition on the discharge of trash, by stating the following:

> A.2. It shall be prohibited to discharge rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas.
>
> […]
>
> B.1. The discharge shall not cause the following conditions to create a condition of nuisance or to adversely affect beneficial uses of the waters of the State:
>
> a. Floating, suspended, or deposited macroscopic particulate matter, or foam;
>
> b. Bottom deposits or aquatic growth;
>
> c. Alteration of temperature, turbidity, or apparent color beyond natural background levels;
>
> d. Visible, floating, suspended, or deposited oil or other products of petroleum origin; and
>
> e. Substances present in concentrations or quantities that would cause deleterious effects on aquatic biota, wildlife, or waterfowl, or that render any of these unfit for human consumption.[323]

Additionally, the prior permit required permittees to notify and submit a report to the Regional Board when discharges cause an exceedance of an applicable water quality

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[319] Exhibit A, Test Claim, page 622 (Fact Sheet).

[320] Exhibit A, Test Claim, page 477 (test claim permit, Provision C.10.a.ii.b.).

[321] Exhibit A, Test Claim, page 477 (test claim permit, Provision C.10.a.iii.).

[322] Exhibit A, Test Claim, page 623 (Fact Sheet).

[323] Exhibit A, Test Claim, page 91 (prior permit, Provisions A and B).

standard, including the BMPs that are currently being implemented and additional BMPs and monitoring that will be implemented to prevent or reduce the pollutants that are causing or contributing to the exceedance in water quality standards.[324]

Although the Basin Plan prohibited the discharge of trash, the prior permit gave the permittees additional time to comply with this prohibition. The prior permit required permittees to develop and implement a Short-Term Trash Load Reduction Plan to reduce trash load from their MS4s by 40 percent by July 1, 2014, and to develop and begin implementation of a Long-Term Trash Load Reduction Plan that would attain 70 percent reduction in trash loads from their MS4s by July 1, 2017 and 100 percent reduction by July 1, 2022.[325] This is the same schedule for compliance in Provision C.10.a. and C.10.a.i. of the test claim permit and, thus, the schedule for compliance is not new.

In addition, the requirement to reduce trash by 80 percent by July 1, 2019, is not new and does not mandate a new program or higher level of service. The fact sheet notes that "the compliance deadlines are consistent with the previous permit goals of 70 percent trash load reduction by 2017 and 100 percent trash load reduction (or no adverse trash impact) by 2022."[326] The prior permit gave permittees five years, from 2009 to 2014, to reduce trash loads by 40 percent; three years, from 2014 to 2017, to reduce trash an additional 30 percent for 70 percent reduction total; and five years, from 2017 to 2022, to achieve that final 30 percent reduction for 100 percent trash load reduction total. The additional interim deadline of 80 percent trash load reduction by July 1, 2019, is in line with the prior requirement to attain a 100 percent trash load reduction by 2022 and therefore abiding by this interim deadline does not impose a new program or higher level of service.

Furthermore, the activities required to implement the trash load deadlines are not new. Permittees already had a duty to implement control measures and best management practices to comply with the discharge prohibitions and prevent all trash discharges in receiving waters. Federal law requires the implementation of a program to effectively prohibit illicit, non-stormwater discharges, and trash is an illicit discharge.[327] Federal law also requires controls to prevent the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods.[328] Since 1975, the San Francisco Bay Basin Plan has

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[324] Exhibit A, Test Claim, page 92 (prior permit, Provision C.1.).

[325] Exhibit A, Test Claim, pages 174, 176 (prior permit, Provisions C.10.a.i. and C.10.c.).

[326] Exhibit A, Test Claim, page 622 (test claim permit, Fact Sheet).

[327] United States Code, title 33, section 1342(p)(3)(B)(ii); Code of Federal Regulations, title 40, section 122.26(d)(2)(iv)(B)(1). All non-stormwater discharges are illicit unless they have been permitted with an NPDES permit or are conditionally exempt. There is no exemption for trash.

[328] United States Code, title 33, section 1342(p)(3)(B)(iii); Code of Federal Regulations, title 40, section 122.26(d)(2)(iv)(B).

contained a narrative water quality objective which prohibits all floating material (waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses); settleable material (waters shall not contain substances in concentrations that result in the deposition of material that cause nuisance or adversely affect beneficial uses); and suspended material (waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses).[329]

The prior permit's trash provisions also required installing a minimum number of full trash capture systems and performing annual cleanups of a minimum number of trash hot spots as part of permittees' trash load reduction actions. Permittees were required to install and maintain a mandatory minimum number of full trash capture systems that treat runoff from an area equivalent to 30% of the retail/wholesale land that drain to MS4s within their jurisdiction, excluding population-based permittees with a population less than 2,000 or a population less than 12,000 and retail/wholesale land less than 40 acres.[330] Permittees were also required to identify a minimum number of high-trash impacted locations along state waters, or "Hot Spots" — one per 30,000 population or one per 100 acres of retail/wholesale land, whichever was greater, minimum one — and cleanup those locations for at least 100 yards of creek length or 200 yards of shoreline length to a level of no visible impact at least once per year.[331] Non-population based permittees were each given a specific number of full trash capture systems they were required to install and maintain and trash hot spots they were required to identify and cleanup.[332] These requirements dictating the permittees' trash load reduction methods still carry on in the test claim permit, and have not increased.[333]

Thus, the requirements imposed by Provision C.10.a.i., ii., and iii. are not new and do not mandate a new program or higher level of service.

iii. The requirements in Provisions C.10.b.i. and ii. are not new and do not mandate a new program or higher level of service.

Provision C.10.b.i. requires permittees to maintain their full trash capture systems, as follows:

a. **Maintenance** – The maintenance of each full capture device shall be adequate to prevent plugging, including plugging of the 5 mm screen leading to trash overflow and bypass, flooding, or a full condition of the device's trash reservoir causing bypassing of trash. All full trash capture devices shall be inspected and maintained at least once per year. All such

[329] Exhibit X (2), Basin Plan 2007, pages 58-59.

[330] Exhibit A, Test Claim, page 175 (prior permit, Provision C.10.a.iii.).

[331] Exhibit A, Test Claim, page 176 (prior permit, Provision C.10.b.).

[332] Exhibit A, Test Claim, page 357 (prior permit, Attachment J, Table 10-2).

[333] Exhibit A, Test Claim, pages 477-478, 481-482, 684-692 (test claim permit, Provisions C.10.a.iii. and C.10.c., Attachment E).

devices in high or very high trash generation areas shall be inspected at least two times per year, with the inspections spaced at least three months or more apart. If this frequency of inspection is found excessive after two inspections, the inspection frequency can be reduced to once per year.

If any such device is found to have a plugged or blinded screen or is greater than 50 percent full of trash during a maintenance event, the maintenance frequency shall be increased so that the device is neither plugged nor more than half full of trash at the next maintenance event.[334]

b. **Maintenance Records** – Permittees shall retain device specific maintenance records, including, at a minimum: the date(s) of maintenance, the capacity condition of the device at the time of maintenance (full and overflowing or with storage capacity remaining), any special problems such as flooding, screen blinding or plugging from leaves, plastic bags, or other debris causing overflow, damage reducing function, or other negative conditions. A summary of this information shall be reported in each Annual Report which may be limited to the number of full capture devices maintained that exhibited a plugged, full or overflowing condition upon maintenance.[335]

c. **Certification** – Permittees shall certify annually that each of their full trash capture systems is operated and maintained to meet full trash capture system requirements. Drainage areas served by an adequately maintained full trash capture system will be considered equivalent to or better than a Low trash generation area.[336]

Provision C.10.b.ii. also requires permittees to maintain documentation of implementation for their non-full trash capture system control actions; to conduct assessments of the effectiveness of these control actions; and to provide documentation of the control measure implementation and assessments upon request for review. Specifically, Provision C.10.b.ii.a. and b. requires as follows:

a. **Implementation Documentation** – Permittees shall maintain documentation of trash control actions that describes each action or combination of actions, the level of implementation, the timing and frequency of implementation, standard operating procedures if applicable, location(s) of implementation actions including mapped location(s) and drainage area(s) affected or description of areal extent, tracking and enforcement procedures if applicable, and other information relevant to effective implementation of the action or combination of actions.[337]

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[334] Exhibit A, Test Claim, page 478 (test claim permit, Provision C.10.b.i.a.).

[335] Exhibit A, Test Claim, page 478 (test claim permit, Provision C.10.b.i.b.).

[336] Exhibit A, Test Claim, page 478 (test claim permit, Provision C.10.b.i.c.).

[337] Exhibit A, Test Claim, page 479 (test claim permit, Provision C.10.b.ii.a.).

b. **Visual Assessment of Outcomes of Other Trash Management Actions** – Permittees shall conduct visual on-land assessment, including photo documentation, or other acceptable assessment method (see C.10.b.ii.b.(iv.)), of each trash generation area within which it is implementing other trash management actions or combination of actions other than full trash capture, to determine or verify the effectiveness of the action or combination of actions. Permittees may assess and account for one or more trash generation areas in a single trash management area within which a control action or combination of control actions is implemented. The visual on-land assessment method used shall meet or exceed the following criteria:

(i) Conduct observations within a trash management area of the sidewalk, curb and gutter, or locations associated with trash generation sources.

(ii) Conduct observations at randomly selected locations covering at least ten percent of a trash management area's street miles; or conduct observations at strategic locations with justification they are representative of trash generation in the management area and they will represent the effectiveness of the control action(s) implemented or planned in the management area.

(iii) Conduct observations at a frequency consistent with known or estimated trash generation rate(s) within a trash management area and the time frequency of implementation of the control action(s) implemented or planned in the management area. Conduct observations for effectiveness approximately at the halfway point of the interval between instances of recurring trash control actions such as street sweeping and on-land cleanup.

(iv) Permittees may put forth substantive and credible evidence that certain management actions or sets of management actions when performed to a specified performance standard yield a certain trash reduction outcome reliably. Such a proposal shall be made to the Executive Officer as a submittal separate from any other submittals or reports. If this evidence is accepted by the Executive Officer, the Permittees may claim a similar trash reduction outcome by demonstrating that they have performed these trash reduction actions within certain trash management areas to the same performance standard accepted by the Executive Officer.[338]

It is not a new requirement to inspect and maintain full trash capture systems. Federal law requires that applications for a large or medium municipal separate storm sewer discharge permit to include a description of the structural controls that will be used to prevent pollutants, and more importantly to this issue, "a description of maintenance

[338] Exhibit A, Test Claim, page 479 (test claim permit, Provision C.10.b.ii.b.).

activities and a maintenance schedule for structural controls to reduce pollutants (including floatables) in discharges from municipal separate storm sewers."[339] Federal regulations further require "[t]he permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit."[340] Keeping maintenance records is also required by federal regulations, as is summarizing these records in permittees' Annual Reports.[341] Permittees are also required to certify all applications reports, or information they submit.[342]

The prior permit also specified that permittees were required to perform maintenance on the full trash capture systems in their jurisdiction.[343] Regular maintenance is necessary to ensure that full trash capture systems are operating properly. Inspecting full trash capture systems, though discussed as a separate action from maintenance, is a step to the maintenance process, a preliminary act to determine whether further maintenance is necessary.

This duty to properly operate and maintain all facilities and systems of treatment and control also applies to the activities required by Provision C.10.b.ii for their non-full trash capture system control actions. Permittees have a duty to reduce trash loads as specified by implementing control measures and other actions, and such actions taken to fulfill this duty qualify as "facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance."[344] Permittees are required by federal regulations to ensure these control actions are being performed as specified, which requires them to document or keep records of their implementation.[345] Federal regulations require permittees to provide access to copies of any records they are required to keep as a permit condition.[346] It is therefore not a new requirement to maintain documentation of implementing a control action and provide that documentation for review upon request.

As for the visual assessments of the outcomes of other trash management actions, according to federal regulations, proper operation and maintenance of these facilities and systems of treatment and control includes appropriate quality assurance procedures.[347] The test claim permit requires permittees' combination of non-full trash

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[339] Code of Federal Regulations, title 40, section 122.26(d)(2)(iv)(A)(1).

[340] Code of Federal Regulations, title 40, section 122.41(e).

[341] Code of Federal Regulations, title 40, sections 122.41(j)(2), 122.42(c)(4).

[342] Code of Federal Regulations, title 40, section 122.41(k)(1).

[343] Exhibit A, Test Claim, page 175 (prior permit, Provision C.10.a.iii.).

[344] Code of Federal Regulations, title 40, section 122.41(e).

[345] Code of Federal Regulations, title 40, section 122.41(h).

[346] Code of Federal Regulations, title 40, section 122.41(i)(2).

[347] Code of Federal Regulations, title 40, section 122.41(e).

capture system control actions to be "equivalent to or better than full trash capture systems," which it defines to mean the control actions would "send no more trash down the storm drain system than a full trash capture device would allow, which is essentially no trash discharge except in very large storm flows."[348] To provide appropriate quality assurance, there needs to be a method for assessing non-full trash capture system control actions to determine their effectiveness. "The primary tool currently available for determining trash reduction action success and positive outcomes is visual assessment, with photo documentation of trash generation and conditions in areas that drain to storm drains."[349] This history of visual assessments documented with photographic records being the primary tool for determining a trash control action's effectiveness can be seen in the Trash Hotspot Cleanup program that was first required under the prior permit, where permittees' documented their trash hotspot cleanup activities by taking before and after photographs every 50 feet along the trash hotspot cleanup area.[350] Permittees also have the option of avoiding performing these visual assessments by providing substantial and credible evidence that a control measure will reliably yield a certain trash reduction outcome when performed to a certain standard, and then provide evidence they performed the trash control action to that standard.[351] These activities all are meant as quality assurance procedures, which are required by federal law, and thus are not mandated by the state.

Though the claimant may complain that the specifications laid out in the test claim permit for what is considered adequate inspection and maintenance of their full trash capture systems make these acts "more prescriptive, burdensome, and costly" than what was required by the prior permit, and that the documentation and assessments required for other trash management activities are so "burdensome and costly" they determined full trash capture systems to be the least costly method of complying with their trash load reduction requirements, the fact is they were always required to perform maintenance on their full trash capture devices as part of their duty to keep their structural source controls operating effectively. Documentation and assessment of their other trash management activities is likewise required by federal law to ensure those activities are being performed to an adequate quality standard. All the test claim permit has done is provide additional detail as to what proper maintenance, documentation, and assessment of the effectiveness of Permittees' trash management activities entails.

Thus, the requirements to inspect and maintain full trash capture systems; to keep records of their maintenance records and provide them for inspection upon request; to

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[348] Exhibit A, Test Claim, page 477 (test claim permit, Provision C.10.a.ii.a.).

[349] Exhibit A, Test Claim, page 623 (test claim permit, Fact Sheet).

[350] Exhibit A, Test Claim, page 176 (prior permit, Provision C.10.b.iii.). This requirement has carried on in the test claim permit, although it decreased the number of photographs needed to document Trash Hotspot Cleanup activities to one photograph for every 100 feet of hot spot length. See Exhibit A, Test Claim, page 482 (test claim permit, Provision C.10.c.iii.).

[351] Exhibit A, Test Claim, page 479 (test claim permit, Provision C.10.b.ii.b.iv.).

annually certify their full trash capture systems are being operated and maintained to the prescribed standard; to maintain documentation of their other trash management control actions; and to perform assessments as to the effectiveness of these other trash management control actions, are not new and do not mandate a new program or higher level of service.

2. Some Requirements in the Provisions Implementing the Mercury and PCBs TMDLs (Provisions C.3.j., C.11.a., C.11.b., C.11.c., C.12.a., C.12.c., C.12.d., and C.12.e.) Impose State-Mandated New Programs or Higher Levels of Service.

The claimant pleads various provisions of the test claim permit that implement TMDLs previously adopted for mercury and PCBs. These provisions generally do the following:

- Provision C.3.j. requires the permittees to develop a Green Infrastructure Plan, adopt policies and ordinances, conduct outreach, and report progress on the planning.[352]
- Provisions C.11.c. and C.12.c. require the permittees to implement Green Infrastructure projects to achieve the load reductions for mercury and PCBs, in accordance with the TMDLs; prepare a reasonable assurance analysis of future mercury and PCBs load reductions, which demonstrate how Green Infrastructure projects will achieve the total load reduction by 2040; and to report on Green Infrastructure implementation.[353]
- Provision C.11.a. requires the permittees to implement mercury and PCBs source and treatment control measures and pollution prevention strategies to reduce loads throughout the permit area, develop and implement an assessment methodology and data collection program to quantify in a technically sound manner mercury and PCBs loads reduced; and submit various reports.[354]
- Provision C.11.b. requires the permittees to develop and implement an assessment methodology and data collection program to quantify mercury loads reduced through implementation of any and all pollution prevention, source control and treatment control efforts required by the test claim permit's provisions or load reductions achieved through other relevant efforts.[355]
- Provision C.12.a. requires the permittees to implement PCBs source and treatment control measures and pollution prevention strategies to reduce loads throughout the permit area, develop and implement an assessment methodology

[352] Exhibit A, Test Claim, pages 422-427 (test claim permit, Provision C.3.j.).

[353] Exhibit A, Test Claim, pages 488-490 (test claim permit, Provision C.11.c.) and 495-497 (test claim permit, Provision C.12.c.).

[354] Exhibit A, Test Claim, pages 486-487 (test claim permit, Provisions C.11.a.).

[355] Exhibit A, Test Claim, page 487-488 (test claim permit, Provision C.11.b.).

and data collection program to quantify in a technically sound manner mercury and PCBs loads reduced, and submit various reports.[356]

- Provision C.12.d. requires the permittees to prepare a plan and schedule of future PCBs control measure implementation and reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030.[357]
- Provision C.12.e. requires permittees to evaluate the presence of PCBs in caulks and sealants used in storm drains or roadway infrastructure in public rights-of-way.[358]

As explained below, some of the requirements imposed by these provisions constitute state-mandated new programs or higher levels of service.

a. Federal law requires Regional Boards to include effluent limits consistent with the assumptions and requirements of any wasteload allocations in an established TMDL.

The CWA requires states to develop a list of "impaired" waters within their jurisdiction, meaning that existing controls of pollutants are not sufficient to meet water quality standards necessary to permit the designated beneficial uses, such as fishing or recreation. States must then rank those impaired waters by priority, and establish a Total Maximum Daily Load (TMDL), which includes a calculation of the maximum amount of each constituent pollutant that the water body can assimilate and still meet water quality standards.[359] A TMDL represents the total assimilative capacity of a water body for a specific constituent pollutant, with a margin of safety, which is protective of that water body's identified beneficial uses. Usually, a TMDL will also include wasteload allocations (WLAs), which divide up the total assimilative capacity of the receiving waters among the known point source dischargers, and load allocations (LAs) for non-point source discharges.[360] The development of a TMDL triggers further regulatory action by the state, as explained by the court in *City of Arcadia v. U.S. EPA*:

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[356] Exhibit A, Test Claim, pages 492-495 (test claim permit, Provisions C.12.a.).

[357] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.).

[358] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.).

[359] United States Code, title 33, section 1313(d); Code of Federal Regulations, title 40, section 130.7(c).

[360] United States Code, title 33, section 1313(d). Code of Federal Regulations, title 40, section 130.2(h) defines WLA as "The portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality-based effluent limitation." Code of Federal Regulations, title 40, section 130.2(g) defines LA as "The portion of a receiving water's loading capacity that is attributed either to one of its existing or future nonpoint sources of pollution or to natural background sources. Load allocations are best estimates of the loading, which may range from reasonably accurate estimates to gross allotments,

> TMDLs established under Section 303(d)(1) of the CWA function primarily as planning devices and are not self-executing. *Pronsolino v. Nastri*, 291 F.3d 1123, 1129 (9th Cir.2002) ("TMDLs are primarily informational tools that allow the states to proceed from the identification of waters requiring additional planning to the required plans.") (citing *Alaska Ctr. for the Env't v. Browner*, 20 F.3d 981, 984–85 (9th Cir.1994)). A TMDL does not, by itself, prohibit any conduct or require any actions. Instead, each TMDL represents a goal that may be implemented by adjusting pollutant discharge requirements in individual NPDES permits or establishing nonpoint source controls. See, e.g., *Sierra Club v. Meiburg*, 296 F.3d 1021, 1025 (11th Cir.2002) ("Each TMDL serves as the goal for the level of that pollutant in the waterbody to which that TMDL applies.... The theory is that individual-discharge permits will be adjusted and other measures taken so that the sum of that pollutant in the waterbody is reduced to the level specified by the TMDL."); *Idaho Sportsmen's Coalition v. Browner*, 951 F.Supp. 962, 966 (W.D.Wash.1996) ("TMDL development in itself does not reduce pollution.... TMDLs inform the design and implementation of pollution control measures."); *Pronsolino*, 291 F.3d at 1129 ("TMDLs serve as a link in an implementation chain that includes ... state or local plans for point and nonpoint source pollution reduction ...."); *Idaho Conservation League v. Thomas*, 91 F.3d 1345, 1347 (9th Cir.1996) (noting that a TMDL sets a goal for reducing pollutants). Thus, a TMDL forms the basis for further administrative actions that may require or prohibit conduct with respect to particularized pollutant discharges and waterbodies.
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> For point sources, limitations on pollutant loadings may be implemented through the NPDES permit system. 40 C.F.R. § 122.44(d)(1)(vii)(B). EPA regulations require that effluent limitations in NPDES permits be "consistent with the assumptions and requirements of any available wasteload allocation" in a TMDL. *Id*.[361]

Once a TMDL is adopted, it must be approved by U.S. EPA. If U.S. EPA does not approve the TMDL, it must, within 30 days after disapproval "establish such loads for such waters as [it] determines necessary to implement the water quality standards applicable to such waters."[362] A regional board is then required by federal law to

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depending on the availability of data and appropriate techniques for predicting the loading. Wherever possible, natural and nonpoint source loads should be distinguished."

[361] *City of Arcadia v. U.S. EPA* (2003) 265 F.Supp.2d 1142, 1145.

[362] United States Code, title 33, section 1313(d)(2); Code of Federal Regulations, title 40, section 130.7(d)(2).

incorporate the TMDL into the Basin Plan.[363] Basin Plan amendments do not become effective until approved by the State Water Board and the Office of Administrative Law (OAL).[364]

Federal law then requires regional boards to include effluent limits in compliance with "all applicable water quality standards" and "consistent with the assumptions and requirements of any available wasteload allocation for the discharge" in NPDES permits as follows:

> When developing water quality-based effluent limits under this paragraph the permitting authority shall ensure that:
>
> (A) The level of water quality to be achieved by limits on point sources established under this paragraph is derived from, and complies with all applicable water quality standards; and
>
> (B) Effluent limits developed to protect a narrative water quality criterion, a numeric water quality criterion, or both, are consistent with the assumptions and requirements of any available wasteload allocation for the discharge prepared by the State and approved by EPA pursuant to 40 CFR 130.7.[365]

b. Mercury and PCBs TMDLs were approved prior to the permit term establishing mercury allocations of 82 kg/year for urban stormwater runoff, and PCBs allocations of 2 kg/year for urban stormwater runoff and requiring load reductions by the permittees.

The San Francisco Bay is impaired for both mercury and PCBs, and accordingly TMDLs have been established for both pollutants.[366]

i. The Mercury TMDL.

Before the adoption of the TMDL for mercury, the Basin Plan provided that surface waters shall not contain concentrations of chemical constituents in amounts that adversely affected any designated beneficial use.[367] In 1998, the Regional Board adopted a 303(d) impaired water body list classifying all of San Francisco Bay as

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[363] United States Code, title 33, section 1313(d)(2); Code of Federal Regulations, title 40, sections 130.6, 130.7(d)(2).

[364] California Government Code section 11353.

[365] Code of Federal Regulations, title 40, section 122.44(d)(1)(vii).

[366] California Code of Regulations, title 23, section 3915 (Register 2007, No. 45) (codifying the San Francisco Bay mercury TMDL adopted by R2-2006-005). California Code of Regulations, title 23, section 3919.6 (Register 2010, No. 9) (codifying the San Francisco Bay PCBs TMDL adopted by R2-2008-0012).

[367] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, page 6.

impaired due to mercury.[368] Mercury concentrations in the Bay were high enough to threaten the health of humans who consume fish caught in the Bay, accounted for abnormally high rates of bird eggs failing to hatch, and adversely affected beneficial uses of the Bay including sport fishing and preservation of endangered species and wildlife habitat.[369]

The Regional Board adopted the mercury TMDL on August 9, 2006, to ensure attainment of the water quality objectives and beneficial uses; it was adopted by the State Board on July 17, 2007; was approved by the Office of Administrative Law on November 7, 2007; and was approved by the U.S. EPA on February 12, 2008.[370] The aggregate, regionwide urban runoff wasteload allocation from the San Francisco Bay mercury TMDL to meet water quality standards is 82 kg/yr.[371] The mercury TMDL implementation plan calls for attaining the allocation by February 2028, with an interim milestone of 120 kg/yr by February 2018.[372] Of the 82 kg/yr aggregate mercury allocation for urban stormwater runoff, approximately 64.41 kg/yr were allocated to permittees, requiring a 62.87 load reduction from permittees.[373] Wasteload allocations were also established for other entities, including industrial companies discharging wastewater and petroleum wastewater.[374]

Order R2-2006-0052 imposed the following mercury load allocations and resulting required load reductions for permittee's stormwater programs:

Entity	Allocation (kg/year)	Reduction (kg/year)
Santa Clara Valley Urban Runoff Pollution Prevention Program	23	21
Alameda Countywide Clean Water Program	20	19
Contra Costa Clean Water Program	11	11
San Mateo County Stormwater Pollution Prevention Program	8.4	8.0

[368] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, page 1.

[369] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, page 10.

[370] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, pages 4, 10, 11; California Code of Regulations, title 23, section 3915.

[371] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, page 14; Exhibit A, Test Claim, page 486 (test claim permit, Provision C.11.).

[372] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, page 19; Exhibit A, Test Claim, page 486 (test claim permit, Provision C.11.).

[373] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, page 14.

[374] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, pages 15-17.

Vallejo Sanitation and Flood Control District	1.6	1.6
Fairfield-Suisun Urban Runoff Management Program	1.6	1.5
Solano County Area	0.81	0.77[375]

The mercury TMDL says that the urban stormwater management agencies' NPDES permit shall require implementation of best management practices and control measures designed to achieve the load allocations or accomplish the load reductions derived from the allocations, and include actions to reduce mercury-related risks to humans and wildlife.[376] Requirements shall be based on an updated assessment of control measures intended to reduce pollutants in stormwater to the maximum extent practicable and consistent with the TMDL.[377] Additionally, the mercury TMDL said that stormwater permits shall incorporate the following requirements:

ii) Evaluate and report on the spatial extent, magnitude, and cause of contamination for locations where elevated mercury concentrations exist;

iii) Develop and implement a mercury source control program;

iv) Develop and implement a monitoring system to quantify either mercury loads or loads reduced through treatment, source control, and other management efforts;

v) Monitor levels of methylmercury in discharges;

vi) Conduct or cause to be conducted studies aimed at better understanding mercury fate, transport, and biological uptake in San Francisco Bay an tidal areas;

vii) Develop an equitable allocation-sharing scheme in consultation with Caltrans (see below) to address Caltrans roadway and non-roadway facilities in the program area, and report the details to the Water Board;

viii) Prepare an annual report that documents compliance with the above requirements and documents either mercury loads discharged, or loads reduced through ongoing pollution prevention and control activities; and

ix) Demonstrate progress towards (a) the interim load milestone, or (b) attainment of the allocations shown in Table 4-w, by using one of the following methods:

1) Quantify the annual average mercury load reduced by implementing (a) pollution prevention activities, and (b) source and treatment controls. The

[375] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, page 14.

[376] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, page 19.

[377] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, page 19.

benefit of efforts to reduce mercury-related risk to wildlife and humans should also be quantified. The Water Board will recognize such efforts as progress towards achieving the interim milestone and the mercury-related water quality standards upon which the allocations and corresponding load reductions are based. Loads reduced as a result of actions implemented after 2001 (or earlier if actions taken are not reflected in the 2001 load estimate) may be used to estimate load reductions.

2) Quantify the mercury load as a rolling five-year annual average using data on flow and water column mercury concentrations.

3) Quantitatively demonstrate that the mercury concentration of suspended sediment that best represents sediment discharged with urban runoff is below the suspended sediment target.[378]

ii. The PCBs TMDL.

PCBs are a potential carcinogen and are suspected of having negative impacts on the human immune system, reproductive system, nervous system, endocrine system, and digestive system. Although their manufacture is banned in the United States, PCBs continue to pose a serious risk due to their presence in the environment and tend to accumulate in fatty tissue in fish.[379]

Before the adoption of the TMDL, the Basin Plan contained a narrative water quality objective stating that controllable water quality factors shall not cause a detrimental increase in toxic substances found in bottom sediments or aquatic life.[380] In addition, in May 2000, the CTR established numeric water quality criteria of 0.00017 ug/L total PCBs in water that apply to the San Francisco Bay.[381] As indicated above, the CTR is a water quality standard that applies to "'all waters' for 'all purposes and programs under the CWA.'"[382] However, all segments of the San Francisco Bay were impaired for PCBs and were 303(d) listed in 1998 because neither the narrative nor numeric water quality objectives were being met and the beneficial uses of the water bodies of commercial and sport fishing were not fully supported.[383]

The Regional Board adopted the PCBs TMDL on February 13, 2008, to ensure attainment of the water quality objectives and beneficial uses; it was approved by the State Board on October 20, 2009; was approved by the Office of Administrative Law on

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[378] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, pages 19-20; see also Exhibit A, Test Claim, page 635-636 (test claim permit, Fact Sheet, Finding C.11-6).

[379] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, page 6.

[380] Exhibit X (2), Basin Plan 2007, page 57 (Section 3.3.2.); Exhibit X (5), Order R2-2008-0012, PCBs TMDL, page 5.

[381] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, pages 1, 5.

[382] *Santa Monica Baykeeper v. Kramer Metals, Inc.* (2009) 619 F.Supp.2d 914, 927.

[383] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, page 5.

March 1, 2010; and was approved by the U.S. EPA on March 29, 2010.[384] The PCBs TMDL found the baseline of PCBs loads into the San Francisco is 33 kg/yr total from all sources, of which 20 kg/yr came from urban and non-urban stormwater runoff.[385] The TMDL set the wasteload allocation for the entire Bay at 10 kg/yr, of which 2 kg/yr is allotted to stormwater runoff.[386] And 1.6 kg/yr of the wasteload allocation was allocated to permittees, to be achieved by March 2030.[387] This is an 18 kg/yr reduction from the 2003 PCBs baseline, with the permittees responsible for 14.4 kg/yr of that reduction.[388] The TMDL also established WLAs for municipal and industrial wastewater dischargers.[389]

Order R2-2008-0012 imposed the following PCBs load allocations for stormwater runoff based on county:[390]

County	Allocation (kg/year)
Alameda	0.5
Contra Costa	0.3
San Mateo	0.2
Santa Clara	0.5
Solano	0.1

According to the PCBs TMDL, requirements in the NPDES permits shall be based on an updated assessment of the best management practices and control measures intended to reduce PCBs in stormwater runoff, and control measures shall reduce PCBs to the maximum extent practicable.[391] The PCBs TMDL laid out the following roadmap for how it intended urban stormwater permittees to achieve their WLAs over several permit terms:

> In the first five-year permit term, stormwater permittees will be required to implement control measures on a pilot scale to determine their effectiveness and technical feasibility. In the second permit term, stormwater permittees will be required to implement effective control

[384] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, pages 3, 5; California Code of Regulations, title 23, section 3919.6.

[385] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, pages 6, 7.

[386] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, page 7.

[387] Exhibit A, Test Claim, page 492 (test claim permit, Provision C.12.).

[388] Exhibit A, Test Claim, page 492 (test claim permit, Provision C.12.).

[389] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, pages 7, 8.

[390] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, page 10.

[391] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, page 11.

measures, that will not cause significant adverse environmental impacts, in strategic locations, and to develop a plan to fully implement control measures that will result in attainment of allocations, including an analysis of costs, efficiency of control measures and an identification of any significant environmental impacts. Subsequent permits will include requirements and a schedule to implement technically feasible, effective and cost efficient control measures to attain allocations. If, as a consequence, allocations cannot be attained, the Water Board will take action to review and revise the allocations and these implementation requirements as part of adaptive implementation.

In addition, stormwater permittees will be required to develop and implement a monitoring system to quantify PCBs urban stormwater runoff loads and the load reductions achieved through treatment, source control and other actions; support actions to reduce the health risks of people who consume PCBs-contaminated San Francisco Bay fish; and conduct or cause to be conducted monitoring, and studies to fill critical data needs identified in the adaptive implementation section.[392]

c. The prior permit implemented the mercury and PCBs TMDLs by requiring regulated projects treat their stormwater runoff using low-impact development (LID); and by implementing mercury and PCBs control measures, primarily a series of pilot projects and studies to determine which methods were feasible, effective, and economically feasible.

The TMDL for mercury was adopted, became effective, and was included in the Basin Plan before the prior permit became effective on December 1, 2009.[393] The TMDL for PCBs had been adopted by the Regional Board and State Water Board when the prior permit became effective, but was awaiting approval from OAL and U.S. EPA, which came in 2010.[394] The prior permit implemented the PCBs TMDL, however, stating that one of the goals was to "achieve Waste Load Allocations adopted under Total Maximum Daily Loads" and "to implement the urban runoff requirements of the PCBs TMDL and reduce PCBs loads to make substantial progress toward achieving the urban runoff PCBs load allocation."[395]

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[392] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, page 12.

[393] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, pages 4, 10, 11; California Code of Regulations, title 23, section 3915.

[394] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, pages 3, 5; California Code of Regulations, title 23, section 3919.6.

[395] Exhibit A, Test Claim, pages 185, 220 (prior permit, Provision C.12. and Fact Sheet); see also page 299 "The C.12 provisions are consistent with the regulatory approach and implementation plan of the San Francisco Bay PCBs TMDL adopted by the Water Board." (prior permit, Fact Sheet).

The prior permit's receiving water limitations prohibited discharges from causing or contributing to any applicable water quality standard for receiving waters contained in the Basin Plan.[396] The prior permit also prohibited discharges from creating a condition of nuisance or adversely affecting beneficial uses of waters of the State through any of the following conditions: floating, suspended, or deposited macroscopic particulate matter, or foam; bottom deposits or aquatic growths; alteration of temperature, turbidity, or apparent color beyond present natural background levels; visible, floating, suspended, or deposited oil or other products of petroleum origin; and substances present in concentrations or quantities that would cause deleterious effects on aquatic biota, wildlife, or waterfowl, or that render any of these unfit for human consumption.[397] Compliance with the prior permit's receiving water limitations required timely implementation of control measures pursuant to Provision C.1 "and other actions specified in Provisions C.2 through C.15" and if an exceedance was detected through monitoring, permittees were required to report to the Regional Board and modify their BMPs.[398]

The prior permit's new development and redevelopment provisions required permittees to use their planning authorities to include appropriate source control, site design, and stormwater treatment in new development and redevelopment projects to address both soluble and insoluble stormwater runoff pollutant discharges, primarily through the use of low-impact development (LID).[399] Because these provisions were intended to address soluble and insoluble stormwater runoff discharges, and mercury and PCBs are two such examples of these types of discharges, these provisions are part of how the prior permit implemented control measures for mercury and PCBs.[400]

The prior permit required permittees to require all Regulated Projects[401] to treat 100 percent of their stormwater runoff by implementing onsite LID measures, although alternative compliance methods were allowed, such as treatment at an off-site joint

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[396] Exhibit A, Test Claim, page 91 (prior permit, Provision B.2.).

[397] Exhibit A, Test Claim, page 91 (prior permit, Provision B.1.).

[398] Exhibit A, Test Claim, page 92 (prior permit, Provision C.1.).

[399] Exhibit A, Test Claim, page 99 (prior permit, Provision C.3.).

[400] Exhibit A, Test Claim, page 239 (prior permit, Fact Sheet, Finding C.3-2.).

[401] Regulated Projects either: 1) create or replace 5,000 square feet or more of impervious surfaces collectively over the project site and include development or redevelopment of auto service facilities, retail gasoline outlets, restaurants, or uncovered parking lots; 2) create or replace 10,000 square feet or more of impervious surface collectively over the project site for development or redevelopment of all other land use types, except detached single-family homes that aren't part of a larger development plan; or 3) road projects that create 10,000 square feet or more of new contiguous impervious surface, including sidewalks, bicycle lanes, and impervious trails that are greater than 10 feet wide or are creek-side. See Exhibit A, Test Claim, pages 100-105 (prior permit, Provision C.3.b.).

stormwater treatment facility.[402] Non-Regulated Projects were encouraged, but not required, to also include source control measures to limit pollutant generation, discharge, and runoff.[403]

The prior permit also required permittees to collectively complete ten pilot green streets projects, which would incorporate LID techniques for site design and be sized according to hydraulic sizing criteria.[404] The green street pilot projects contained the following elements:

(i) Stormwater storage for landscaping reuse or stormwater treatment and/or infiltration for groundwater replenishment through the use of natural feature systems;

(ii) Creation of attractive streetscapes that enhance neighborhood livability by enhancing the pedestrian environment and introducing park-like elements into neighborhoods;

(iii) Service as an urban greenway segment that connects neighborhoods, parks, recreation facilities, schools, mainstreets, and wildlife habitats;

(iv) Parking management that includes maximum parking space requirements as opposed to minimum parking space requirements, parking requirement credits for subsidized transit or shuttle service, parking structures, shared parking, car sharing, or on-street diagonal parking;

(v) Meets broader community goals by providing pedestrian and, where appropriate, bicycle access; and

(vi) Located in a Priority Development Area as designated under the Association of Bay Area Government's and Metropolitan Transportation Commission's FOCUS4 program.[405]

Permittees annually reported on the status of the green street pilot projects; reported each completed project's capital costs, operational and maintenance costs, legal and procedural arrangements, the sustainable landscaping measures incorporated into the project, and its score according to the Bay-Friendly Landscape Scorecard; and summarized in the 2013 Annual Report each project's location, size, including impervious surface treated, maps of areas treated, types of LID treatment measures included, total and specific project costs, funding sources broken down by percentage paid by each funding source, lessons learned and recommendations for future projects,

[402] Exhibit A, Test Claim, pages 108, 114-115 (prior permit, Provisions C.3.c. and C.3.e.).

[403] Exhibit A, Test Claim, page 99 (prior permit, Provision C.3.a.i.7.).

[404] Exhibit A, Test Claim, pages 105-106 (prior permit, Provision C.3.b.iii.).

[405] Exhibit A, Test Claim, pages 105-106 (prior permit, Provision C.3.b.iii.4.).

and identification of the responsible party and funding source for operation and maintenance.[406]

The prior permit also identified specific provisions to implement the mercury and PCBs TMDLs. With respect to mercury, Provision C.11. of the prior permit stated the following:

> The Permittees shall implement the following control programs for mercury. The Permittees shall perform the control measures and provide reporting on those control measures according to the provisions below. The purpose of this provision is to implement the urban runoff requirements of the San Francisco Bay mercury TMDL and reduce mercury loads to make substantial progress toward achieving the urban runoff mercury load allocation established for the TMDL. The aggregate, regionwide, urban runoff wasteload load allocation is 82 kg/yr. This allocation should be achieved by February 2028 and, as a way to measure progress, an interim loading milestone of 120 kg/yr, halfway between the current load and the allocation, should be achieved by February 2018. If the interim loading milestone is not achieved, the Permittees shall demonstrate reasonable and measurable progress toward achieving the milestone. The Permittees may comply with any requirement of this provision through a collaborative effort.[407]

The prior permit required the permittees to implement a series of mercury control programs and report on their findings.[408] These programs required permittees to: a) implement a region-wide mercury collection and recycling program for consumer-level devices and equipment containing mercury such as thermometers, thermostats, switches, and bulbs; b) monitor methylmercury in runoff discharges; c) conduct a pilot program to investigate and abate mercury sources in drainages, including public rights-of-way, and stormwater conveyances with accumulated sediment that contains elevated mercury concentrations; d) conduct a pilot program to evaluate and enhance municipal sediment removal and management practices; e) complete pilot projects to evaluate on-site stormwater treatment via retrofit; f) complete pilot projects to evaluate reducing mercury loads by diverting dry weather and first flush stormwater flows to sanitary sewers; g) develop and implement a monitoring program to quantify mercury loads and loads reduced through source control treatment and other management measures; h) conduct studies aimed to better understand the fate, transport, and biological uptake of mercury discharged in urban runoff to the San Francisco Bay and tidal areas; i) develop effective programs to reduce mercury-related risks to humans and quantify the resulting risk reduction; and j) develop an allocation sharing scheme with Caltrans.[409]

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[406] Exhibit A, Test Claim, pages 107-108 (prior permit, Provision C.3.b.v.2.).

[407] Exhibit A, Test Claim, page 178 (prior permit, Provision C.11.).

[408] Exhibit A, Test Claim, page 178 (prior permit, Provision C.11.).

[409] Exhibit A, Test Claim, pages 178-184 (prior permit, Provisions C.11.a-j.).

The pilot program evaluating on-site stormwater treatment via retrofit involved implementing on-site treatment projects at ten locations during the permit term to evaluate and quantify the removal of mercury by retrofitting on-site treatment systems into existing storm drain systems.[410] Examples of on-site treatment systems included detention basins, bioretention units, sand filters, infiltration basins, and treatment wetlands.[411] When choosing project locations, permittees were required to identify locations draining to a variety of land uses, evaluate the technical feasibility, and discuss economic feasibility.[412] Permittees reported the results of these retrofitting projects in their 2014 integrated monitoring report, reporting on the project status, results, mercury removal effectiveness, and lessons learned from the pilot projects, and a plan for implementing this type of treatment on an expanded basis throughout the jurisdiction during the next permit term.[413]

Provision C.12. in the prior permit said the following regarding PCBs:

> The Permittees shall implement the following control programs for PCBs. The Permittees shall perform the control measures and provide reporting on those control measures according to the provisions below. The purpose of these provisions is to implement the urban runoff requirements of the PCBs TMDL and reduce PCBs loads to make substantial progress toward achieving the urban runoff PCBs load allocation. The Permittees may comply with any requirement of this Provision through a collaborative effort.[414]

As directed in the PCBs TMDL, the prior permit's PCBs control measures primarily involved a series of pilot programs, many of which were the same programs required by the mercury provisions. These control actions required permittees to implement: a) a region-wide program to train municipal building inspectors to identify PCBs and PCBs-containing equipment during the course of routine inspections; b) pilot programs to evaluate managing PCBs-containing materials and wastes during building demolition and renovation; c) pilot projects to investigate and abate on-land locations with elevated PCBs concentrations, including public rights-of-way, and stormwater conveyances with accumulated sediments with elevated PCBs concentrations; d) pilot projects to evaluate and enhance municipal sediment removal and management practices; e) pilot projects to evaluate on-site stormwater treatment via retrofit; f) pilot projects to evaluate reducing PCBs loads through diverting dry weather and first flush stormwater to sanitary sewers; g) a monitoring program to quantify PCBs loads reduced through the source control, treatment, and other management measures implemented as part of the pilot studies; h) studies on the fate, transport, and biological uptake of PCBs discharged in urban runoff;

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[410] Exhibit A, Test Claim, page 180 (prior permit, Provision C.11.e.i.).

[411] Exhibit A, Test Claim, page 180 (prior permit, Provision C.11.e.ii.).

[412] Exhibit A, Test Claim, page 180 (prior permit, Provision C.11.e.ii.).

[413] Exhibit A, Test Claim, page 181 (prior permit, Provision C.11.e.iii.2.).

[414] Exhibit A, Test Claim, page 185 (prior permit, Provision C.12.).

and i) programs to reduce PCBs-related risks to humans and quantify the resulting risk reduction from these activities.[415] The pilot projects evaluating on-site stormwater treatment via retrofit imposed the same conditions as the pilot projects evaluating the effectiveness of using retrofit to treat mercury, and the two provisions acknowledged that a project at a site with both elevated mercury and PCBs concentrations could satisfy both provisions.[416]

d. Some of the requirements in Provisions C.3.j., C.11.c., and C.12.c. of the test claim permit, regarding the development and implementation of Green Infrastructure plans to achieve the TMDL reductions in mercury and PCBs are state-mandated new programs or higher levels of service.

The Test Claim pleads Provisions C.3.j., C.11.c., and C.12.c. of the test claim permit, which require permittees to develop and implement Green Infrastructure plans and projects to comply with mercury and PCBs load reduction requirements imposed by two prior TMDLs.[417]

Green infrastructure is defined in the test claim permit as: "Infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments. At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water."[418] "A critical part of the strategy to reduce urban runoff mercury loads will be the widespread implementation of Green Infrastructure control measures to intercept mercury-containing sediment and stormwater before it is discharged to receiving water."[419]

Provision C.3.j. requires permittees to "complete and implement a Green Infrastructure Plan for the inclusion of low impact development (LID) drainage design into storm drain infrastructure on public and private lands, including streets, roads, storm drains, parking lots, building roofs, and other storm drain infrastructure elements."[420] The purpose of this plan is to serve as an implementation guide and reporting tool to provide reasonable assurance that the San Francisco Bay mercury and PCBs TMDL wasteload allocations will be met.[421] The Fact Sheet explains that the Green Infrastructure Plan "is

[415] Exhibit A, Test Claim, pages 185-191 (prior permit, Provisions C.12.a-i.).

[416] Exhibit A, Test Claim, pages 188-189 (prior permit, Provision C.12.e.).

[417] Exhibit A, Test Claim, pages 25-27 (Written Narrative).

[418] Exhibit A, Test Claim, page 526 (test claim permit, Glossary).

[419] Exhibit A, Test Claim, page 639 (test claim permit, Fact Sheet).

[420] Exhibit A, Test Claim, page 422 (test claim permit, Provision C.3.j.).

[421] Exhibit A, Test Claim, page 422 (test claim permit, Provision C.3.j.).

in lieu of expanding the definition of Regulated Projects" for this permit term.[422] Over the long term, the Plan is intended to describe how the permittees will shift their impervious surfaces and storm drain infrastructure from gray to green; i.e., "to a more resilient, sustainable system that slows runoff by dispersing it to vegetated areas, harvests and uses runoff, promotes infiltration and evapotranspiration, and uses bioretention and other Green Infrastructure practices to clean stormwater runoff."[423]

Provision C.11. establishes mercury controls to implement the urban runoff requirements in the mercury TMDL and reduce mercury loads to achieve the TMDL waste load allocations.[424] Provision C.11.c. says that permittees shall implement Green Infrastructure projects during the permit term to collectively achieve 48 g/year mercury load reduction through Green Infrastructure by June 30, 2020, and prepare a reasonable assurance analysis quantitatively demonstrating they can achieve mercury load reductions of at least 10 kg/year through green infrastructure by 2040.[425]

Provision C.12. implements the urban runoff requirements of the PCBs TMDL and establishes control measures to achieve the wasteload allocations adopted in the TMDL.[426] Provision C.12.c. also requires permittees to implement Green Infrastructure projects and prepare a reasonable assurance analysis, but with a goal of achieving a total of 120 g/year PCBs load reduction through Green Infrastructure by June 30, 2020, and the reasonable assurance analysis demonstrating they can achieve 3 kg/year PCBs load reduction by 2040.[427] The Fact Sheet explains that mercury is distributed more evenly throughout the Bay Area than PCBs which tend to be highly concentrated in areas where PCBs were historically heavily used, however both benefit from widespread implementation of Green Infrastructure.[428] The Green Infrastructure projects required by Provisions C.11.c. and C.12.c. are thus one and the same, and recognize that the "planning, financing and implementation of green infrastructure is going to take a long time, perhaps as much as 25 years or more."[429]

Because the requirements for Green Infrastructure projects are based on the Green Infrastructure plan in Provision C.3.j, Provisions C.3.j, C.11.c., and C.12.c. are discussed together.

The claimant asserts that Green Infrastructure is a new term that was not used at all in the prior permit, making the requirements to create a Green Infrastructure plan and to

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[422] Exhibit A, Test Claim, page 575 (test claim permit, Fact Sheet).

[423] Exhibit A, Test Claim, pages 575-576 (test claim permit, Fact Sheet).

[424] Exhibit A, Test Claim, page 486 (test claim permit, Provision C.11.).

[425] Exhibit A, Test Claim, pages 488-490 (test claim permit, Provision C.11.c).

[426] Exhibit A, Test Claim, page 492 (test claim permit, Provision C.12.).

[427] Exhibit A, Test Claim, pages 495-497 (test claim permit, Provision C.12.c).

[428] Exhibit A, Test Claim, pages 639, 652 (test claim permit, Fact Sheet).

[429] Exhibit A, Test Claim, page 640 (test claim permit, Fact Sheet).

implement Green Infrastructure to reduce mercury and PCBs loads by specified amounts by June 30, 2020 new requirements.[430] The claimant states that it adopted a Green Infrastructure Plan, is hiring a consultant for preparation of some of the tasks in the "Framework for Green Infrastructure Plan Development," and has identified the following Green Infrastructure projects and the costs to comply with the test claim permit:

- First Green Street Infrastructure Project. The claimant awarded the first green street contract to Star Construction, for a total cost of $1,405,840.
- South Decoto Green Streets Project. This is a sustainable redevelopment project in the Decoto district that aims to create Green Infrastructure that mimics natural systems to reduce reliance on the city's storm drain, with costs totaling $3,618,712.
- H Street Green Street Improvements, for estimated costs of $3,874,000.[431]

The claimant also estimates future costs of $72.5 million ($3 million per year for 23 years) to achieve the load reductions for mercury and PCBs.[432]

The claimant argues in its Rebuttal Comments that the Regional Board exercised discretion and implemented a true choice when it developed and implemented the mercury and PCBs TMDLs, as it controls how load allocations are distributed among known dischargers.[433]

The Regional Board's response is that the Green Infrastructure requirements are required by federal law, as they are meant to implement the mercury and PCBs TMDLs.[434] Although the term "Green Infrastructure" did not appear in the prior permit, the prior permit had requirements regarding low impact development (LID), which is defined as a type of Green Infrastructure.[435] The Board also alleges that the Green Infrastructure planning requirements were included in the test claim permit at permittees' request as a means for them to meet their TMDL load reduction requirements.[436] The EPA supported including Green Infrastructure requirements in the test claim permit, and as there is evidence EPA commonly includes Green Infrastructure or low impact development requirements in federally issued permits, it is likely the EPA

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[430] Exhibit A, Test Claim, pages 25-27 (Written Narrative).

[431] Exhibit A, Test Claim, pages 29-30 (Written Narrative), 44-45 (Declaration of Thomas Ruark, City Engineer, City of Union City).

[432] Exhibit A, Test Claim, pages 30 (Written Narrative), 45 (Declaration of Thomas Ruark, City Engineer, City of Union City).

[433] Exhibit D, Claimant's Rebuttal Comments, page 5.

[434] Exhibit C, Regional Board's Late Comments on the Test Claim, pages 14-15.

[435] Exhibit C, Regional Board's Late Comments on the Test Claim, page 15.

[436] Exhibit C, Regional Board's Late Comments on the Test Claim, page 15.

would have imposed the same or similar requirements, further supporting they are federally mandated.[437] The Board also argues that the Green Infrastructure program was not new to permittees in 2015, as permittees have been aware of the TMDL load reduction requirements since 2008; had opportunities to and did in fact participate in TMDL development; were aware that achieving load allocations would be difficult and that the permits were designed to become more stringent as implementation deadlines approached; and permittees actively participated in a pilot Green Infrastructure program and workshops discussing how to "scale up" Green Infrastructure implementation during the prior permit's life cycle.[438] It argues that the permit's provisions cannot be viewed in isolation, but must be viewed in the greater context of TMDL adoption and implementation as a whole, and that "[v]iewed in this way, the green infrastructure provisions are not a new program at all, but the continuation of a program that had been ongoing for the better part of a decade by the time the Board adopted MRP 2.0."[439]

As described below, the Commission finds that the some of the activities required by Provisions C.3.j., C.11.c., and C.12.c., impose a state mandated new program or higher level of service.

i. Provision C.3.j. imposes new requirements to develop a Green Infrastructure Plan, adopt policies and procedures, conduct outreach, conduct early implementation activities, and report progress on the planning. Except for the "early implementation" requirements for a permittee's own public projects, which do not mandate a new program or higher level of service, the remaining requirements in Provision C.3.j. mandate a new program or higher level of service.

Provision C.3.j. requires permittees to comply with the following activities to develop a Green Infrastructure Plan, adopt policies and ordinances, conduct outreach, and report progress as follows:

1. Green Infrastructure Plan Development (Provision C.3.j.i.):
    - Prepare a framework or workplan describing specific tasks and timeframes for development for its Green Infrastructure plan, to be approved by the Permittee's governing body, mayor, city manager, or county manager by June 30, 2017. This framework or workplan shall include a statement of purpose, tasks, and timeframe needed to complete all requirements in Provision C.3.j.i.2. (discussed below).[440]
    - Prepare a Green Infrastructure Plan, subject to Executive Officer approval, that contains all the following:

[437] Exhibit C, Regional Board's Late Comments on the Test Claim, pages 15-16, 22-25.

[438] Exhibit C, Regional Board's Late Comments on the Test Claim, page 39.

[439] Exhibit C, Regional Board's Late Comments on the Test Claim, pages 39-40.

[440] Exhibit A, Test Claim, page 423 (test claim permit, Provision C.3.j.i.1.).

- A mechanism (such as SFEI's Green PlanIT tool) to prioritize and map areas for potential and planned projects, both public and private, on a drainage-area specific basis, for implementation by 2020, by 2030, and by 2040, that includes criteria for prioritization and outputs that can be incorporated into the Permittees' long-term planning and capital improvement processes.
- Outcomes from the above-described mechanism, including but not limited to, the prioritization criteria, maps, lists, and all other information, as appropriate. Individual project-specific reviews do not need to be submitted with the Plan, but shall be made available for review upon request.
- Targets for the amount of impervious surface from public and private projects within the Permittee's jurisdiction to be retrofitted by 2020, by 2030, and by 2040.
- A process for tracking and mapping completed projects, public and private, and making the information publicly available online (I.E., SFEI's Green PlanIT tool).
- General guidelines for overall streetscape and project design and construction so that projects have a unified complete design that implements the range of functions associated with the project.
- Standard specifications, and as appropriate, typical design details and related information necessary for the Permittee to implement Green Infrastructure projects in its jurisdiction, which shall be sufficient to address the different street and project types within a Permittee's jurisdiction, as defined by land use and transportation characteristics.
- Requirements that projects be designed to meet the treatment and hydromodification sizing requirements outline in Provisions C.3.c. and C.3.d. For projects that are not subject to these requirements according to Provision C.3.b.ii. (non-regulated projects), Permittees may collectively propose a single approach for how to proceed when project constraints preclude fully meeting the sizing requirements, which can include options for addressing specific issues or scenarios.
- A summary of planning documents the permittee has updated or otherwise modified to incorporate green infrastructure requirements (General Plans, Specific Plans, Complete Street Plans, Active Transportation Plans, Storm Drain Master Plans, Pavement Work Plans, Urban Forestry Plans, Flood Control/Management Plans, and any other plans that may impact the future alignment, configuration or design of impervious surfaces within the Permittee's jurisdiction). These modifications are to be completed by no later than the end of the permit term.

- A workplan identifying how the Permittee will ensure that Green Infrastructure and low impact development are appropriately included in future plans.
- A workplan to complete prioritized projects identified as part of an Alternative Compliance Program or Early Implementation as outlined in Provision C.3.e. or C.3.j.ii.
- An evaluation of prioritized project funding options including, but not limited to: Alternative Compliance funds; grant monies, including transportation project grants from federal, State, and local agencies; existing Permittee resources; new tax or other levies; and other sources of funds.[441]

- Adopt policies, ordinances, and/or other appropriate legal mechanisms to ensure implementation of the Green Infrastructure Plan in accordance with the requirements of this provision.[442]
- Conduct outreach and education in accordance with the following:
  - Conduct public outreach on the requirements of this provision, including outreach coordinated with adoption or revision of standard specifications and planning documents, and with the initiation and planning of infrastructure projects. Such outreach shall include general outreach and targeted outreach to and training for professionals involved in infrastructure planning and design.
  - Train appropriate staff, including planning, engineering, public works maintenance, finance, fire/life safety, and management staff on the requirements of this provision and methods of implementation.
  - Educate appropriate Permittee elected officials (e.g., mayors, city council members, county supervisors, district board members) on the requirements of this provision and methods of implementation.[443]
- Each permittee shall report on its planning progress as follows:
  - Submit documentation in the 2017 Annual Report that its framework or workplan for development of its Green Infrastructure Plan was approved by its governing body, mayor, city manager, or county manager by June 30, 2017.
  - Submit its completed Green Infrastructure Plan with the 2019 Annual Report.

[441] Exhibit A, Test Claim, pages 423-425 (test claim permit, Provision C.3.j.i.2.).

[442] Exhibit A, Test Claim, page 425 (test claim permit, Provision C.3.j.i.3.).

[443] Exhibit A, Test Claim, pages 425-426 (test claim permit, Provision C.3.j.i.4.).

- Submit documentation of its legal mechanisms to ensure implementation of its Green Infrastructure Plan with the 2019 Annual Report.
- Submit a summary of its outreach and education efforts in each Annual Report.[444]

2. Early Implementation – List of Green Infrastructure Projects (Provision C.3.j.ii.):
   - Prepare and maintain a list of Green Infrastructure Projects, public and private, that are already planned for implementation during the permit term and infrastructure projects planned for implementation during the permit term that have potential for Green Infrastructure measures.[445]
   - Submit the list with each Annual Report and a summary of planning or implementation status for each public Green Infrastructure Project and each private Green Infrastructure Project that is not also a Regulated Project as defined in Provision C.3.b.ii. Include a summary of how each public infrastructure project with Green Infrastructure potential will include Green Infrastructure measures to the maximum extent practicable during the permit term. For any public infrastructure project where implementation of Green Infrastructure measures is not practicable, submit a brief description of the project and the reasons Green Infrastructure measures were impracticable to implement.[446]
3. Participation in Processes to Promote Green Infrastructure (Provision C.3.j.iii.):
   - Either individually or collectively, track processes, assemble and submit information, and provide informational materials and presentations as needed to assist relevant regional, State, and federal agencies to plan, design, and fund incorporation of Green Infrastructure measures into local infrastructure projects, including transportation projects. Issues to be addressed include coordinating the timing of funding from different sources, changes to standard designs and design criteria, ranking and prioritizing projects for funding, and implementation of cooperative in-lieu programs.[447]
   - In each Annual Report, report on the goals and outcomes during the reporting year of work undertaken to participate in processes to promote Green Infrastructure.[448]

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[444] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.i.5.).

[445] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.ii.1.).

[446] Exhibit A, Test Claim, page 426 (test claim permit, section C.3.j.ii.2.).

[447] Exhibit A, Test Claim, page 426 (test claim permit, section C.3.j.iii.1.).

[448] Exhibit A, Test Claim, page 427 (test claim permit, section C.3.j.iii.2.).

- In the 2019 Annual Report, submit a plan and schedule for new and ongoing efforts to participate in processes to promote Green Infrastructure.[449]

4. Tracking and Reporting Progress (Provision C.3.j.iv.):

   - Either individually or collectively, develop and implement regionally-consistent methods to track and report implementation of Green Infrastructure measures including treated area and connected and disconnected impervious area on both public and private parcels within their jurisdictions. The methods shall also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met.[450]
   - In each Annual Report, report progress on development and implementation of the tracking methods.[451]
   - In the 2019 Annual Report, submit the tracking methods and report implementation of Green Infrastructure measures including treated area, and connected and disconnected impervious area on both public and private parcels within their jurisdictions.[452]

a) <u>The requirements imposed by Provision C.3.j. are new.</u>

These requirements are new. Under the prior permit, permittees were required to impose low impact development (LID) requirements and hydraulic sizing design criteria on Regulated Projects.[453] Projects that required permittees' review but did not meet the definition of a Regulated Project were encouraged, but not required, to include site

[449] Exhibit A, Test Claim, page 427 (test claim permit, section C.3.j.iii.3.).

[450] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.3.j.iv.1.).

[451] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.2.j.iv.2.).

[452] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.2.j.iv.3.).

[453] Exhibit A, Test Claim, pages 108-114 (test claim permit, Provisions C.3.c. and C.3.d.). Regulated Projects are all projects that are within a permittee's building and planning authority that fall into one of three main categories: 1) development and redevelopment projects for a finite list of land use categories that create or replace 5,000 square feet or more of impervious surface over the project area; 2) all development and redevelopment projects that create or replace 10,000 square feet or more of impervious surface, excluding single family homes that are not part of a larger development project; and 3) Road projects that create 10,000 square feet or more of newly constructed contiguous road surface for new streets, roads, bike lanes, sidewalks, or trails, or when widening existing roads by adding additional lanes. Interior remodels and routine maintenance and repair are exempt from these categories, as are Caltrans projects, and bike lane, sidewalk, or trail projects that are designed to direct stormwater runoff into adjacent vegetated areas or use permeable surfaces. See Exhibit A, Test Claim, pages 101-105 (prior permit, Provision C.3.b.ii.).

design measures, such as minimizing land disturbances, directing roof runoff to vegetated areas, or including restoration of riparian areas and wetlands as a project amenity.[454] Permittees were also required to install ten green streets pilot projects which tested the effectiveness of such projects at treating stormwater through the use of natural feature systems, and ten pilot projects which tested treating mercury and PCBs through retrofitting on-site treatment systems such as detention basins, bioretention units, sand filters, infiltration basins, and treatment wetlands onto existing storm drain systems.[455] LID, green street projects, and retrofitting, are all examples of Green Infrastructure[456]

Although these types of Green Infrastructure were required by the prior permit, there were no prior requirements to have a specific plan for implementing Green Infrastructure into public and private projects which sets targets for the amount of impervious surfaces to be retrofitted within certain timeframes, and to provide guidelines for project design and standard specifications. In addition, there was no prior requirement to create a framework or workplan for developing a Green Infrastructure Plan. While federal law does require permittees to have adequate legal authority to implement permit conditions and submit annual reports on permit conditions' implementation status, and the prior permit specifically required permittees to train staff and conduct outreach for the public on the conditions in Provision C.3. of the prior permit, here the state has specifically imposed a new requirement to develop and implement a Green Infrastructure Plan.[457] Since the plan is new, adopting legal authority to implement the plan, educating people on the plan's requirements, and reporting on the plan's implementation are all new requirements as well. Thus, the activities required for C.3.j.i. are new.

The requirement in Provision C.3.j.ii. to compile a list of all projects already planned for implementation during the permit term that either include Green Infrastructure or are an infrastructure project with potential to add Green Infrastructure measures, is also new. The prior permit required the permittees to list in each Annual Report each Regulated

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[454] Exhibit A, Test Claim, pages 99, 391 (prior permit, Provision C.3.a.i.6.; test claim permit, Provision C.3.a.i.6.).

[455] Exhibit A, Test Claim, pages 105-106, 180-181, and 188-189 (prior permit, Provisions C.3.b.iii., C.11.e., and C.12.e.).

[456] Exhibit A, Test Claim, page 526 (test claim permit, Glossary), which defines Green Infrastructure as "infrastructure that uses vegetation, soils, and natural processes to manage water and create healthier urban environments. At the scale of a city or county, green infrastructure refers to the patchwork of natural areas that provides habitat, flood protection, cleaner air, and cleaner water. At the scale of a neighborhood or site, green infrastructure refers to stormwater management systems that mimic nature by soaking up and storing water."

[457] 33 U.S. Code section 1342(a)(2); 40 C.F.R. section 122.42(c).

Project approved during that fiscal year.[458] All Regulated Projects are required to either treat 100% of their stormwater runoff using LID treatment measures, or to follow an alternative compliance method where it is not feasible to treat 100% through LID, and LID is defined as a type of green infrastructure, meaning most Regulated Projects would also be considered Green Infrastructure Projects.[459] However, the requirement to maintain the list required by Provision C.3.j.ii. is separate from and in addition to the requirement to list approved Regulated Projects, which is still required by the test claim permit..[460] Moreover, not all Green Infrastructure Projects are Regulated Projects, as one of the purposes of the Green Infrastructure Plan is to require all Green Infrastructure Projects to meet the treatment and hydromodification sizing requirements already imposed on regulated projects, and to plan an approach for how to deal with non-regulated projects where project constraints prevent fully meeting the sizing requirements.[461] Although non-Regulated Projects were previously encouraged to include site design measures that could be considered Green Infrastructure under the test claim permit's requirements, such measures were voluntary and there were no requirements to report that a non-Regulated Project chose to incorporate such measures.[462]

Provision C.3.j.ii. also requires permittees to annually report on the planning and implementation status for each public Green Infrastructure Project and private Green Infrastructure Project that is not also a Regulated Project. Although permittees previously reported on Regulated Projects, this requirement specifically calls out public infrastructure and private non-Regulated Projects, and requires specific analysis of information on public infrastructure projects that was not previously required for Regulated Projects, namely a summary of how public infrastructure projects with Green Infrastructure potential included Green Infrastructure to the maximum extent practicable, or a description of the reasons why it was deemed impracticable to implement these measures. Thus, the requirements in C.3.j.ii. are new.

The requirements in Provision C.3.j.iii. to participate in processes to promote Green Infrastructure, which involves tracking processes, assembling and submitting information, and providing informational materials and presentations as needed to assist regional, State, and Federal agencies to plan, design, and fund incorporation of green infrastructure into local infrastructure projects; reporting on the goal and outcomes of the work done to satisfy this requirement in the Annual Report; and submit a plan and schedule for new and ongoing efforts to participate in processes to promote Green

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[458] Exhibit A, Test Claim, pages 106-107, (prior permit, Provision C.3.b.v.1.); 396-397 (test claim permit, Provision C.3.b.iv.2.).

[459] Exhibit A, Test Claim, pages 109-110, (prior permit, Provision C.3.c.i.2.b.).

[460] See Exhibit A, Test Claim, page 396 (test claim permit, Provision C.3.b.iv.2.) (The requirement to annually report on each Regulated Project approved each year).

[461] Exhibit A, Test Claim, page 424, (test claim permit, Provision C.3.j.i.2.g.).

[462] Exhibit A, Test Claim, page 99 (prior permit, Provision C.3.a.i.6.).

Infrastructure in the 2019 Annual Report, are new. Provision C.3.a.i.5. of both the prior permit and this permit require the permittees to "provide outreach adequate to implement the requirements of Provision C.3., including providing educational materials to municipal staff, developers, contractors, construction site operators, and owners/builders, early in the planning process and as appropriate."[463] Although providing educational materials to municipal staff, developers, contractors, construction site operators, and owners/builders sounds similar to the requirement in Provision C.3.j.iii., Provision C.3.j.iii. adds a separate requirement to track processes, assemble, and submit information, and provide the informational materials and presentations to regional, state, and federal agencies. Regional, State, and federal agencies may be involved in implementing infrastructure projects, but the specific roles they play may not always fit into the categories of "municipal staff, developers, contractors, construction site operators, and owners/builders." Additionally, although federal law requires annual reports that include the status of implementing components of the stormwater management program that are established as permit conditions, to the extent it was the State's discretionary decision to require permittees participate in processes to promote Green Infrastructure, the reporting requirements are new.[464] The requirements in Provision C.3.j.iii. are therefore new.

Lastly, Provision C.3.j.iv. requires permittees to develop and implement regionally-consistent methods for tracking and reporting implementing Green Infrastructure measures; to report progress on developing these methods in each Annual Report; and to submit the tracking methods and report implementation of Green Infrastructure measures in the 2019 Annual Report. These requirements are new. Although federal law requires permittees to file an annual report on the status of implementing established permit conditions, proposed changes to the stormwater management program, and a summary of data accumulated throughout the reporting year, to the extent it was the State's discretionary decision to require green infrastructure plans, the reporting requirements in C.3.j.iv. are new.

b) Except for the "early implementation" requirements for a permittee's own public projects, which do not mandate a new program or higher level of service, the remaining requirements in Provision C.3.j. are new, mandated by the state, and impose a new program or higher level of service.

However, the following "early implementation" requirements imposed by Provision C.3.j.ii.1. and 2. are *not* mandated by the state for a permittee's own public projects.

- Prepare and maintain a list of *public* Green Infrastructure Projects that are already planned for implementation during the permit term and *public*

[463] Exhibit A, Test Claim, pages 99, 391 (prior permit, Provision C.3.a.i.5.; test claim permit, Provision C.3.a.i.5.).

[464] United States Code, title 33, section 1342(a)(2); 40 Code of Federal Regulations, section 122.42(c).

infrastructure projects planned for implementation during the permit term that have potential for Green Infrastructure measures.[465]

- Submit the list with each Annual Report and a summary of planning or implementation status for each *public* Green Infrastructure Project that is not also a Regulated Project as defined in Provision C.3.b.ii. Include a summary of how each public infrastructure project with Green Infrastructure potential will include Green Infrastructure measures to the maximum extent practicable during the permit term. For any *public* infrastructure project where implementation of Green Infrastructure measures is not practicable, submit a brief description of the project and the reasons Green Infrastructure measures were impracticable to implement.[466]

The courts have explained that even though the test claim statute or executive order may contain new requirements, the determination of whether those requirements are mandated by the state depends on whether the claimant's participation in the underlying program is voluntary or compelled.[467] When local government elects to participate in the underlying program, then reimbursement under article XIII B, section 6 is not required.[468]

Thus, the issue is whether the underlying decision of the claimants to develop a municipal project is mandated by the state or is a discretionary decision of local government. Activities undertaken at the option or discretion of local government, without legal or practical compulsion, do not trigger a state-mandated program within the meaning or article XIII B, section 6.[469]

There are two distinct theories for determining whether a program is compelled or mandated by the state: legal compulsion and practical compulsion.[470] In the recent case of *Coast Community College Dist. v. Commission on State Mandates* (2022) 13 Cal.5th 800, 815, the California Supreme Court reiterated the legal standards applicable to these two theories of mandate:

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[465] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.ii.1.).

[466] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.ii.2.).

[467] *Department of Finance v. Commission on State Mandates* (*Kern*) (2003) 30 Cal.4th 727, 731.

[468] *Department of Finance v. Commission on State Mandates* (*Kern*) (2003) 30 Cal.4th 727, 743.

[469] *City of Sacramento v. State of California* (1990) 50 Cal.3d 51, 73-76; *Department of Finance v. Commission on State Mandates* (*Kern*) (2003) 30 Cal.4th 727; *Department of Finance v. Commission on State Mandates* (POBRA) (2009) 170 Cal.App.4th 1355, 1365-1366.

[470] *Coast Community College Dist. v. Commission on State Mandates* (2022) 13 Cal.5th 800, 807, 815.

> Legal compulsion occurs when a statute or executive action uses mandatory language that require[s] or command[s] a local entity to participate in a program or service… Stated differently, legal compulsion is present when the local entity has a mandatory, legally enforceable duty to obey. This standard is similar to the showing necessary to obtain a traditional writ of mandate, which requires the petitioning party to establish the respondent has a clear, present, and usually ministerial duty to act. ... Mandate will not issue if the duty is ... mixed with discretionary power.
>
> Thus, as a general matter, a local entity's voluntary or discretionary decision to undertake an activity cannot be said to be legally compelled, even if that decision results in certain mandatory actions.[471]
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> * * *
>
> "[P]ractical compulsion," [is] a theory of mandate that arises when a statutory scheme does not command a local entity to engage in conduct, but rather induces compliance through the imposition of severe consequences that leave the local entity no reasonable alternative but to comply.[472]

Thus, in the absence of legal compulsion, the courts have acknowledged the possibility that a state mandate can be found if local government can show that it faces "certain and severe penalties, such as double taxation or other draconian consequences," leaving local government no choice but to comply with the conditions established by the state.[473]

All costs incurred by a municipality as a project proponent can be analogized to *City of Merced v. State* (1984) 153 Cal.App.3d 777 and *Department of Finance v. Commission on State Mandates* (*Kern*) (2003) 30 Cal.4th 727. In *City of Merced*, the statute at issue required a local government when exercising the power of eminent domain to compensate a business owner for the loss of business goodwill, as part of compensating for the property subject to the taking.[474] The court found that nothing *required* the local entity to exercise the power of eminent domain, and thus any costs experienced as a result of the requirement to compensate for business goodwill was the result of an initial discretionary act.[475]

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[471] *Coast Community College Dist. v. Commission on State Mandates* (2022) 13 Cal.5th 800, 815, internal quotation marks and citations omitted.

[472] *Coast Community College Dist. v. Commission on State Mandates* (2022) 13 Cal.5th 800, 816.

[473] *Coast Community College Dist. v. Commission on State Mandates* (2022) 13 Cal.5th 800, 816-817.

[474] *City of Merced v. State* (1984) 153 Cal.App.3d 777, 782.

[475] *City of Merced v. State* (1984) 153 Cal.App.3d 777, 783.

In *Kern*, the statute at issue required certain local school committees to comply with notice and agenda requirements in conducting their public meetings.[476] There, the Court held that the underlying school site councils and advisory committees were part of several separate voluntary grant-funded programs, and therefore any notice and agenda costs were an incidental impact of participating or continuing to participate in those programs.[477] The Court acknowledged that the district was already participating in the underlying programs, and "as a practical matter, they feel they must participate in the programs, accept program funds, and…incur expenses necessary to comply with the procedural conditions imposed on program participants."[478] However, the Court held that "[c]ontrary to the situation that we described in *City of Sacramento* [*v. State* (1990)] 50 Cal.3d 51, a claimant that elects to discontinue participation in one of the programs here at issue does not face 'certain and severe…penalties' such as 'double…taxation' or other 'draconian' consequences, but simply must adjust to the withdrawal of grant money along with the lifting of program obligations."[479]

Similarly in this case, the permittees have the authority to develop property,[480] but are not legally compelled to develop property. There is no evidence that local agencies are

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[476] *Department of Finance v. Commission on State Mandates* (*Kern*) (2003) 30 Cal.4th 727, 732.

[477] *Department of Finance v. Commission on State Mandates* (*Kern*) (2003) 30 Cal.4th 727, 744-745.

[478] *Department of Finance v. Commission on State Mandates* (*Kern*) (2003) 30 Cal.4th 727, 753.

[479] *Department of Finance v. Commission on State Mandates* (*Kern*) (2003) 30 Cal.4th 727, 754 citing *City of Sacramento v. State* (1990) 50 Cal.3d 51, 74 (The "certain and severe…penalties" and "double…taxation" referred to the situation in *City of Sacramento* in which the state was compelled, by the potential loss of *both* federal tax credits *and* subsidies provided to businesses statewide, to impose mandatory unemployment insurance coverage on public agencies consistent with a change in federal law.).

[480] For example, see Government Code section 23004 (counties *may* purchase, receive by gift or bequest, and hold land within its limits, or elsewhere when permitted by law; and manage, sell, lease, or otherwise dispose of its property as the interests of its inhabitants require); Government Code sections 37350-37353 (cities *may* purchase, lease, receive, hold, and enjoy real and personal property, and control and dispose of it for the common benefit; may erect and maintain buildings for municipal purposes; and may acquire property for parking motor vehicles, and for opening and laying out any street; Government Code 37111 ("When the legislative body deems it necessary that land purchased for park or other purposes be used for construction of public buildings or creation of a civic center, it *may* adopt an ordinance by a four-fifths vote declaring the necessity and providing for such use"); Streets and Highways Code, sections 1800 ("The legislative body of any city *may* do any and all things necessary to lay out, acquire, and construct any section or portion of any street or highway within its

practically compelled, as the only reasonable means necessary to carry out core mandatory functions, to develop or redevelop property and comply with the Green Infrastructure requirements on their own public property.[481] Nor is there evidence that a failure to develop property would subject the claimant to "certain and severe…penalties" such as "double…taxation" or other "draconian" consequences.[482]

Moreover, compliance with the Green Infrastructure requirements on a permittee's own public development is not unique to government, does not provide a governmental service to the public, and thus does not impose a new program or higher level of service since the test claim permit subjects both public and private projects to the requirements.[483]

Thus, the "early implementation" requirements imposed by Provision C.2.j.ii.1. and 2. are not mandated by the state for a permittee's own public projects.

The remaining new requirements in Provisions C.3.j. impose a state-mandated new program or higher level of service, however, and are not triggered by a permittee's local discretionary decision. Permittees are legally compelled to develop and implement the Green Infrastructure Plan outlined in Provision C.3.j., including each of the remaining components for private and public development projects within a permittee's regulatory authority. The subsections within C.3.j. use the mandatory language "shall" to preface each requirement.

Moreover, these activities are mandated by the state, and not the federal government. The California Supreme Court, in *Department of Finance v. Commission on State Mandates*, identified the following test to determine whether certain conditions imposed by an NPDES stormwater permit issued by the Los Angeles Regional Water Board were mandated by the state or federal government:

> If federal law compels the state to impose, or itself imposes, a requirement, that requirement is a federal mandate. On the other hand, if federal law gives the state discretion whether to impose a particular

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jurisdiction as a freeway, and to make any existing street or highway a freeway."); 1801 ("The legislative body of any city *may* close any street or highway within its jurisdiction at or near the point of its intersection with any freeway, or *ma*y make provision for carrying such street or highway over, under, or to a connection with the freeway, and *may* do any and all necessary work on such street or highway.").

[481] *Department of Finance v. Commission on State Mandates* (2009) 170 Cal.App.4th 1355, 1368 (POBRA).

[482] *Department of Finance v. Commission on State Mandates* (*Kern)* (2003) 30 Cal.4th 727, 754 citing *City of Sacramento v. State* (1990) 50 Cal.3d 51, 74.

[483] Exhibit A, Test Claim, pages 488, 496 (Test Claim Permit, Provisions C.11.c.i. and C.12.c.i.) (Stating that Green Infrastructure Projects on both public and private lands can serve towards achieving the stated mercury and PCBs load reduction requirements).

> implementing requirement, and the state exercises its discretion to impose the requirement by virtue of a "true choice," the requirement is not federally mandated.[484]

The courts have also explained "except where a regional board finds the conditions are the *only means* by which the [federal] 'maximum extent practicable' standard can be met, the State exercises a true choice by determining what controls are necessary to meet the standard."[485]

Here, the Regional Board argues that Provision C.3.j. is federally mandated, because the San Francisco Bay is impaired for mercury and PCBs, and the Green Infrastructure Plan is needed to ensure compliance with the respective TMDLs for those pollutants.

> The [Green Infrastructure] Plan is intended to serve as an implementation guide and reporting tool during this and subsequent Permit terms to provide reasonable assurance that urban runoff TMDL wasteload allocations (e.g., for the San Francisco Bay mercury and PCBs TMDLs) will be met, and to set goals for reducing, over the long term, the adverse water quality impacts of urbanization and urban runoff on receiving waters.
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> The [Green Infrastructure planning and tracking] methods shall also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met.[486]

While the EPA supported the inclusion of a Green Infrastructure Plan in its comments on the draft test claim permit, there is nothing that supports that this is the only means of meeting the maximum extent practicable standard. As the court pointed out in *Department of Finance v. Commission on State Mandates (Municipal Stormwater),* when drafting permit conditions regional boards are authorized to impose conditions that are more exacting than what is required by federal law.[487] The federal government approving of a regional board's permit conditions only shows that the conditions would satisfy federal law, not that they are the only means by which to do so, or even that the EPA would have imposed the same conditions if this were a federal permit. Even if the EPA might have included some sort of Green Infrastructure provision in a federal permit, there is no evidence that supports this would have looked identical or even similar to the requirements imposed by the Green Infrastructure Plan, or that these requirements were the only way to meet the maximum extent practicable standard. The

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[484] *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 765.

[485] *Department of Finance v. Commission on State Mandates* (2017) 18 Cal.App.5th 661, 682 citing to *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 768, emphasis added.

[486] Exhibit C, Regional Board's Late Comments on the Test Claim, page 14 quoting findings in the test claim permit.

[487] *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 768.

Regional Board has therefore exercised a true choice in making these requirements mandated by the state.

Finally, these activities constitute a new program or higher level of service. Courts have found two ways in which a mandated program constitutes a new program or higher level of service. The first is if the activities carry out the governmental function of providing services to the public.[488] The second is if the activities impose unique requirements on local government that do not apply to all residents and entities within the state.[489] Here, the requirements are unique to government and provide a governmental service to the public. The Fact Sheet described the importance of Green Infrastructure as follows:

> Available information suggests that mercury is distributed more uniformly throughout the Bay Area landscape than is the case for PCBs. Therefore, a focus on highly contaminated areas (with mercury) may not be enough to achieve the TMDL-required load reductions. A critical part of the strategy to reduce urban runoff mercury loads will be the widespread implementation of green infrastructure control measures to intercept mercury-containing sediment and stormwater before it is discharged to receiving water.
>
> […]
>
> Some Bay Area drainages contain notably elevated PCBs concentrations in suspended or bedded sediment (e.g., > 500 ppb in bedded sediment). A recent analysis of soil PCBs and mercury data collected in the Bay Area identifies 15 sites where maximum concentrations exceed 3.8 mg/kg for PCBs and 1.6 mg/kg for total mercury. Areas with moderately high PCBs concentrations (e.g., 100-500 ppb) were found throughout areas where historical industrial activity involved use of PCBs (McKee and Yee 2015). Placing green infrastructure in highly- and moderately-contaminated areas will form an important element in achieving the PCBs TMDL-required load reductions. However, green infrastructure implementation is a long-term proposition and there is value in placing green infrastructure across the broader landscape to intercept PCBs before they are discharged to receiving water.[490]

Thus, by requiring permittees to develop and implement a Green Infrastructure Plan, to require early implementation of the plan for Green Infrastructure Projects approved to

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[488] *Carmel Valley Fire Protection Dist. v. State of California* (1987) 190 Cal.App.3d 521, (finding that regulations requiring that firefighters be given protective clothing and equipment constituted a new program or higher level of service since fire protection is a basic function of local government).

[489] *County of Los Angeles v. Department of Industrial Relations* (1989) 214 Cal.App.3d 1538, (finding that regulations imposing certain safety precautions for all elevators, both public and private alike, was not unique to local government).

[490] Exhibit A, Test Claim, pages 639, 652 (test claim permit, Fact Sheet).

be implemented during the permit term, to participate in processes to promote Green Infrastructure, and to track and report progress, the Regional Board is requiring permittees to exercise its authority over regulating development and redevelopment projects within its jurisdiction, which is both a governmental service to the public as well as a requirement imposed uniquely on local governments and not on all residents or entities within the state.

Accordingly, the following requirements in Provision C.3.j. mandate a new program or higher level of service within the meaning of article XIII B, section 6 of the California Constitution:

1. Green Infrastructure Plan Development (Provision C.3.j.i.):
    - Prepare a framework or workplan describing specific tasks and timeframes for development for its Green Infrastructure Plan, to be approved by the Permittee's governing body, mayor, city manager, or county manager by June 30, 2017. This framework or workplan shall include a statement of purpose, tasks, and timeframe needed to complete all requirements in Provision C.3.j.i.2 (discussed below).[491]
    - Prepare a Green Infrastructure Plan, subject to Executive Officer approval, that contains all the following:
        - A mechanism (such as SFEI's Green PlanIT tool) to prioritize and map areas for potential and planned projects, both public and private, on a drainage-area specific basis, for implementation by 2020, by 2030, and by 2040, that includes criteria for prioritization and outputs that can be incorporated into the Permittees' long-term planning and capital improvement processes.
        - Outcomes from the above-described mechanism, including but not limited to, the prioritization criteria, maps, lists, and all other information, as appropriate. Individual project-specific reviews do not need to be submitted with the Plan, but shall be made available for review upon request.
        - Targets for the amount of impervious surface from public and private projects within the Permittee's jurisdiction to be retrofitted by 2020, by 2030, and by 2040.
        - A process for tracking and mapping completed projects, public and private, and making the information publicly available online (I.E., SFEI's Green PlanIT tool).
        - General guidelines for overall streetscape and project design and construction so that projects have a unified complete design that implements the range of functions associated with the project.

[491] Exhibit A, Test Claim, page 423 (test claim permit, Provision C.3.j.i.1.).

- Standard specifications, and as appropriate, typical design details and related information necessary for the Permittee to implement Green Infrastructure Projects in its jurisdiction, which shall be sufficient to address the different street and project types within a Permittee's jurisdiction, as defined by land use and transportation characteristics.
- Requirements that projects be designed to meet the treatment and hydromodification sizing requirements outline in Provisions C.3.c. and C.3.d. For projects that are not subject to these requirements according to Provision C.3.b.ii. (non-regulated projects), Permittees may collectively propose a single approach for how to proceed when project constraints preclude fully meeting the sizing requirements, which can include options for addressing specific issues or scenarios.
- A summary of planning documents the permittee has updated or otherwise modified to incorporate Green Infrastructure requirements (General Plans, Specific Plans, Complete Street Plans, Active Transportation Plans, Storm Drain Master Plans, Pavement Work Plans, Urban Forestry Plans, Flood Control/Management Plans, and any other plans that may impact the future alignment, configuration or design of impervious surfaces within the Permittee's jurisdiction). These modifications are to be completed by no later than the end of the permit term.
- A workplan identifying how the Permittee will ensure that Green Infrastructure and low impact development are appropriately included in future plans.
- A workplan to complete prioritized projects identified as part of an Alternative Compliance Program or Early Implementation as outlined in Provision C.3.e. or C.3.j.ii.
- An evaluation of prioritized project funding options including, but not limited to: Alternative Compliance funds; grant monies, including transportation project grants from federal, State, and local agencies; existing Permittee resources; new tax or other levies; and other sources of funds.[492]

- Adopt policies, ordinances, and/or other appropriate legal mechanisms to ensure implementation of the Green Infrastructure Plan in accordance with the requirements of this provision.[493]
- Conduct outreach and education in accordance with the following:
  - Conduct public outreach on the requirements of this provision, including outreach coordinated with adoption or revision of standard specifications

[492] Exhibit A, Test Claim, pages 423-425 (test claim permit, Provision C.3.j.i.2.).

[493] Exhibit A, Test Claim, page 425 (test claim permit, Provision C.3.j.i.3.).

and planning documents, and with the initiation and planning of infrastructure projects. Such outreach shall include general outreach and targeted outreach to and training for professionals involved in infrastructure planning and design.

- Train appropriate staff, including planning, engineering, public works maintenance, finance, fire/life safety, and management staff on the requirements of this provision and methods of implementation.
- Educate appropriate Permittee elected officials (e.g., mayors, city council members, county supervisors, district board members) on the requirements of this provision and methods of implementation.[494]

- Each permittee shall report on its planning progress as follows:
  - Submit documentation in the 2017 Annual Report that its framework or workplan for development of its Green Infrastructure Plan was approved by its governing body, mayor, city manager, or county manager by June 30, 2017.
  - Submit its completed Green Infrastructure Plan with the 2019 Annual Report.
  - Submit documentation of its legal mechanisms to ensure implementation of its Green Infrastructure Plan with the 2019 Annual Report.
  - Submit a summary of its outreach and education efforts in each Annual Report.[495]

2. Early Implementation – List of Green Infrastructure Projects (Provision C.3.j.ii.):
   - *Except for a permittee's own public project (which does not mandate a new program or higher level of service)*, prepare and maintain a list of Green Infrastructure Projects, public and private, that are already planned for implementation during the permit term and infrastructure projects planned for implementation during the permit term that have potential for Green Infrastructure measures.[496]
   - *Except for a permittee's own public project (which does not mandate a new program or higher level of service)*, submit the list with each Annual Report and a summary of planning or implementation status for each public Green Infrastructure Project and each private Green Infrastructure Project that is not also a Regulated Project as defined in Provision C.3.b.ii. Include a summary of how each public infrastructure project with Green Infrastructure potential will include Green Infrastructure measures to the maximum extent practicable

[494] Exhibit A, Test Claim, pages 425-426 (test claim permit, Provision C.3.j.i.4.).

[495] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.i.5.).

[496] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.ii.1.).

during the permit term. For any public infrastructure project where implementation of Green Infrastructure measures is not practicable, submit a brief description of the project and the reasons Green Infrastructure measures were impracticable to implement.[497]

3. Participation in Processes to Promote Green Infrastructure (Provision C.3.j.iii.):
    - Either individually or collectively, track processes, assemble and submit information, and provide informational materials and presentations as needed to assist relevant regional, State, and federal agencies to plan, design, and fund incorporation of Green Infrastructure measures into local infrastructure projects, including transportation projects. Issues to be addressed include coordinating the timing of funding from different sources, changes to standard designs and design criteria, ranking and prioritizing projects for funding, and implementation of cooperative in-lieu programs.[498]
    - In each Annual Report, report on the goals and outcomes during the reporting year of work undertaken to participate in processes to promote Green Infrastructure.[499]
    - In the 2019 Annual Report, submit a plan and schedule for new and ongoing efforts to participate in processes to promote Green Infrastructure.[500]
4. Tracking and Reporting Progress (Provision C.3.j.iv.):
    - Either individually or collectively, develop and implement regionally-consistent methods to track and report implementation of Green Infrastructure measures including treated area and connected and disconnected impervious area on both public and private parcels within their jurisdictions. The methods shall also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met.[501]
    - In each Annual Report, report progress on development and implementation of the tracking methods.[502]
    - In the 2019 Annual Report, submit the tracking methods and report implementation of Green Infrastructure measures including treated area, and

[497] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.ii.2.).

[498] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.iii.1.).

[499] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.3.j.iii.2.).

[500] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.3.j.iii.3.).

[501] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.3.j.iv.1.).

[502] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.2.j.iv.2.).

connected and disconnected impervious area on both public and private parcels within their jurisdictions.[503]

ii. Provisions C.11.c. and C.12.c. mandate a new program or higher level of service to prepare a reasonable assurance analysis of future mercury and PCBs load reductions and reporting. However, implementing Green Infrastructure Projects to reduce mercury and PCB loads is not new and does not mandate a new program or higher level of service.

As part of permittees' load reduction allocations under the mercury and PCBs TMDLs, Provisions C.11.c. and C.12.c. each require permittees to reduce their mercury and PCBs loads by minimum amounts by June 30, 2020 (during the term of the test claim permit), through implementing sufficient green infrastructure projects.[504] This deadline can be extended to December 31, 2020 if the permittees provide sufficient documentation that control measures that will attain the load reduction will be implemented by December 31, 2020.[505] Both public and private Green Infrastructure Projects count towards these requirements, as well as any projects that were implemented during the prior permit term if the load reduction was not realized or credited until this permit term.[506] The Fact Sheet explains that the interim load reduction requirement for mercury is intended to set a clear performance expectation during the permit term toward achieving the TMDL and is feasible since it is approximately equivalent to the load reductions achieved during the prior permit through Green Infrastructure:

> This green infrastructure load reduction requirement is feasible in that these load reductions are approximately equivalent to the scale of load reduction achieved during the Previous Permit term through green infrastructure and C.3- related treatment controls (Integrated Monitoring Report 2014). It is reasonable to expect that a similar or greater pace of redevelopment plus green infrastructure implementation on public property can be achieved during this Permit term. The green infrastructure load reduction requirement is warranted because it is important to provide a clear performance expectation for Permittees for green infrastructure implementation because widespread and effective green infrastructure implementation will be an important component of achieving the load

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[503] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.2.j.iv.3.).

[504] Exhibit A, Test Claim, pages 488-490, 495-497 (test claim permit, Provisions C.11.c. and C.12.c.).

[505] Exhibit A, Test Claim, pages 488, 496 (test claim permit, Provisions C.11.c.ii.1. and C.12.c.ii.1.).

[506] Exhibit A, Test Claim, pages 488, 496 (test claim permit, Provisions C.11.c.i., C.11.c.ii.1., C.12.c.i., and C.12.c.ii.1.).

reductions necessary to achieve the mercury TMDL wasteload allocation.[507]

Similarly, the Fact Sheet also found that the PCBs load reductions required this permit term are achievable based on the information learned and reported on from pilot projects in the prior term.[508]

Permittees are also required prepare a reasonable assurance analysis, showing that mercury load reductions of at least 10 kg/year and PCBs load reductions of at least 3 kg/year will be realized by 2040 through implementing Green Infrastructure Projects.[509] The Fact Sheet recognizes that the planning, financing, and implementation of Green Infrastructure could take 25 years or more; that load reduction benefits from the implementation of Green Infrastructure will be realized over an extended time frame; and, thus the reasonable assurance provisions require permittees to "rigorously and quantitatively demonstrate" the specified reductions "throughout the permit area will be achieved over the course of the next 25 years (i.e., by 2040) through implementation of green infrastructure throughout the permit area."[510]

Provisions C.11.c. and C.12.c. impose the following requirements:

1. Implementing Green Infrastructure Projects (C.11.c.ii.1. and C.12.c.ii.1.). Permittees shall implement sufficient Green Infrastructure Projects to collectively reduce mercury loads by 48 g/year by June 30, 2020, and PCBs loads by 120 g/year by June 30, 2020, respectively.[511] The share of these load reduction requirements within each county to collectively achieve the reduction requirements by June 30, 2020, are as follows:

    - Alameda Permittees: Mercury 15 g/year; PCBs 37 g/year
    - Contra Costa Permittees: Mercury 9 g/year; PCBs 23 g/year
    - San Mateo Permittees: Mercury 6 g/year; PCBs 15 g/year
    - Santa Clara Permittees: Mercury 16 g/year; PCBs 37 g/year
    - Solano Permittees: Mercury 2 g/year; PCBs 8 g/year[512]

[507] Exhibit A, Test Claim, page 639 (test claim permit, Fact Sheet).

[508] Exhibit A, Test Claim, page642 (test claim permit, Fact Sheet).

[509] Exhibit A, Test Claim, pages 489-490 497 (test claim permit, Provisions C.11.c.ii.2. and C.12.c.ii.2.).

[510] Exhibit A, Test Claim, page 640 (test claim permit, Fact Sheet); see also page 652 (test claim permit, Fact Sheet).

[511] Exhibit A, Test Claim, pages 488 and 496 (test claim permit, Provisions C.11.c.ii. and C.12.c.ii.).

[512] Exhibit A, Test Claim, pages 489 and 496 (Table 11.1. and 12.2.).

2. Reasonable Assurance Analysis (C.11.c.ii.2. and C.12.c.ii.2.). Prepare a reasonable assurance analysis of future mercury and PCBs load reductions by doing the following:

   - Quantify the relationship between areal extent of Green Infrastructure implementation and mercury/PCBs load reductions, taking into consideration scale of contamination of the treated area as well as the pollutant removal effectiveness of likely Green Infrastructure strategies.[513]
   - Estimate the amount and characteristics of land area that will be treated through Green Infrastructure by 2020, by 2030, and by 2040.[514]
   - Estimate the amount of mercury/PCBs load reductions that will result from Green Infrastructure implementation by 2020, by 2030, and by 2040.[515]
   - Quantitatively demonstrate that mercury load reductions of at least 10 kg/year and PCBs load reductions of at least 3 kg/year will be realized by 2040 through implementing Green Infrastructure Projects.[516]
   - Ensure that the calculation methods, models, model inputs, and model assumptions used in this analysis have been validated through a peer review process.[517]

3. Reporting (C.11.c.iii. and C.12.c.iii.)

   - Submit in the 2018 Annual Report as part of the reporting required for Provisions C.11.b.iii.2. and C.12.b.iii.3., the quantitative relationship between Green Infrastructure implementation and mercury and PCBs load reductions.

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[513] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.a., C.12.c.ii.2.a.).

[514] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.b., C.12.c.ii.2.b.).

[515] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.c., C.12.c.ii.2.c.).

[516] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.ii.2.d., C.12.c.ii.2.d.). The Fact Sheet explains that the planning, financing, and implementation of green infrastructure will take a long time, as much as 25 years or more. To ensure permittees are working effectively and expeditiously towards implementing effective green infrastructure controls, the test claim permit requires permittees to prepare a reasonable assurance analysis to quantitatively demonstrate mercury load reductions of 10 kg/year and PCBs load reductions of 3 kg/year will be attained within 25 years (i.e., by 2040) by implementing green infrastructure throughout the permit area. See Exhibit A, Test Claim, pages 640, 652 (test claim permit, Fact Sheet.).

[517] Exhibit A, Test Claim, pages 489-490, 497 (test claim permit, Provisions C.11.c.ii.2.e. and C.12.c.ii.2.e.).

This submittal shall include all data used and a full description of models and model inputs relied on to establish this relationship.[518]

- Submit in the 2020 Annual Report an estimate of the amount and characteristics of land area that will be treated through Green Infrastructure implementation by 2020, 2030, and 2040. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.[519]
- Submit in the 2020 Annual Report a reasonable assurance analysis to quantitatively demonstrate that mercury load reductions of at least 10 kg/yr and PCBs load reductions of at least 3 kg/year will be realized by 2040 through implementation of Green Infrastructure Projects. This submittal shall include all data used and a full description of models and model inputs relied on to make the demonstration and documentation of peer review of the reasonable assurance analysis.[520]
- Beginning with the 2019 Annual Report, submit as part of reporting for C.11.b.iii.2. and C.12.b.iii.4., an estimate of the amount of mercury and PCBs load reductions resulting from Green Infrastructure implementation during the term of the Permit. This submittal shall include all data used and a full description of models and model inputs relied on to generate this estimate.[521]

  a. Provisions C.11.c.ii.1. and C.12.c.ii.1., which require permittees to reduce mercury loads by 48 g/year and PCBs loads by 120 g/year, respectively, by June 30, 2020, through Green Infrastructure Projects, do not mandate a new program or higher level of service.

First, the Commission finds that the requirement to implement Green Infrastructure Projects to achieve the interim mercury and PCBs load reductions by June 30, 2020, is not new.

As indicated above, the prior permit implemented the WLAs set in the mercury and PCBs TMDLs.[522] Under the prior permit's receiving water limitations and discharge prohibitions, permittees were required to comply with the Basin Plan, which included the

[518] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.1., C.12.c.iii.1.).

[519] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.2., C.12.c.iii.2.).

[520] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.3., C.12.c.iii.3.).

[521] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.4. and C.12.c.iii.4.).

[522] Exhibit A, Test Claim, pages 295 and 299 (prior permit, Fact Sheet, Findings C.11-1. and C.12.).

TMDL WLAs for mercury, and prohibited the permittees from violating water quality standards for these pollutants, including the standards for both mercury and PCBs.[523] To achieve these water quality standards, the prior permit required permittees to implement control measures *and* other actions required in Provisions C.2. through C.15. of the prior permit.[524] Provision C.3.c. of the prior permit required all Regulated Projects, including public and private regulated projects, to treat 100 percent of their stormwater runoff through onsite low impact development (LID), which is a type of Green Infrastructure.[525] Thus, under prior law, permittees were already required to impose Green Infrastructure requirements on any Regulated Projects within their jurisdictions, based on their regulatory authority and for their own public projects, to reduce their mercury and PCBs loads to meet water quality standards. The Fact Sheet notes that the amount of mercury load reductions required to be achieved through Green Infrastructure by Provisions C.11.c. and C.12.c. of the test claim permit were deemed feasible because they are equivalent to the scale of load reductions achieved through the Green Infrastructure and other C.3-related treatment controls implemented during the prior permit term; and the PCBs load reductions were similarly found to be achievable based on information learned from pilot projects in the prior term.[526] Thus, implementing Green Infrastructure requirements to satisfy the TMDL wasteload allocations for mercury and PCBs on public and private Regulated Projects (the definition of which has not changed since the prior permit), is not new, but continues the existing obligation to reduce mercury and PCBs loads to meet the wasteload allocations.

In addition, the state has not mandated compliance with these provisions by requiring Green Infrastructure on a permittee's own public projects. Although the test claim permit says that permittees "shall implement green infrastructure projects" during the permit term, it also specifies that both private and public projects count towards

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[523] Exhibit A, Test Claim, page 91 (prior permit, Provision B.2); California Code of Regulations, title 23, section 3915 (Register 2007, No. 45) (codifying the San Francisco Bay mercury TMDL adopted by R2-2006-005); see also, Exhibit A, Test Claim, page 178 (prior permit, Provision C.11., which identified the same WLA for mercury of 82 kg/yr for urban runoff, "to be achieved by February 2028 and, as a way to measure progress an interim loading milestone of 120 kg/yr, halfway between the current load and the allocation, should be achieved by February 2018.") and pages 185, 220 (prior permit, Provision C.12., which states the purpose of the PCBs control provisions was to "achieve Waste Load Allocations adopted under Total Maximum Daily Loads" and "to implement the urban runoff requirements of the PCBs TMDL and reduce PCBs loads to make substantial progress toward achieving the urban runoff PCBs load allocation."); Exhibit X (2), Basin Plan 2007, page 57.

[524] Exhibit A, Test Claim, page 92 (prior permit, Provision C.1.).

[525] Exhibit A, Test Claim, page 108 (prior permit, Provisions C.3.c.).

[526] Exhibit A, Test Claim, pages 639, 642 (test claim permit, Fact Sheet).

achieving the required reductions.[527] Permittees have the option of satisfying this requirement entirely through approving private projects and requiring LID or other Green Infrastructure measures as permit conditions. No evidence has been presented to support a finding that requiring Green Infrastructure on private projects would not be able to meet the load reduction requirements of the test claim permit. Even if a permittee was required to install Green Infrastructure on their own public projects to meet the TMDL requirements, these costs would not be mandated by the state. As explained above, activities undertaken at the option or discretion of local government, without legal or practical compulsion, do not trigger a state-mandated program within the meaning or article XIII B, section 6.[528] In this case, the permittees have the authority to develop property,[529] but are not legally compelled to develop property. There is no evidence that local agencies are practically compelled, as the only reasonable means necessary to carry out core mandatory functions, to develop or redevelop property and comply with the Green Infrastructure requirements on their own public property.[530] Nor is there evidence that a failure to develop property would subject

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[527] Exhibit A, Test Claim, pages 488, 496 (test claim permit, Provisions C.11.c.i., and C.12.c.i.).

[528] *City of Sacramento v. State of California* (1990) 50 Cal.3d 51, 73-76; *Department of Finance v. Commission on State Mandates* (*Kern*) (2003) 30 Cal.4th 727; *Department of Finance v. Commission on State Mandates* (POBRA) (2009) 170 Cal.App.4th 1355, 1365-1366.

[529] For example, see Government Code section 23004 (counties *may* purchase, receive by gift or bequest, and hold land within its limits, or elsewhere when permitted by law; and manage, sell, lease, or otherwise dispose of its property as the interests of its inhabitants require); Government Code sections 37350-37353 (cities *may* purchase, lease, receive, hold, and enjoy real and personal property, and control and dispose of it for the common benefit; may erect and maintain buildings for municipal purposes; and may acquire property for parking motor vehicles, and for opening and laying out any street; Government Code 37111 ("When the legislative body deems it necessary that land purchased for park or other purposes be used for construction of public buildings or creation of a civic center, it *may* adopt an ordinance by a four-fifths vote declaring the necessity and providing for such use"); Streets and Highways Code, sections 1800 ("The legislative body of any city *may* do any and all things necessary to lay out, acquire, and construct any section or portion of any street or highway within its jurisdiction as a freeway, and to make any existing street or highway a freeway."); 1801 ("The legislative body of any city *may* close any street or highway within its jurisdiction at or near the point of its intersection with any freeway, or *ma*y make provision for carrying such street or highway over, under, or to a connection with the freeway, and *may* do any and all necessary work on such street or highway.").

[530] *Department of Finance v. Commission on State Mandates* (2009) 170 Cal.App.4th 1355, 1368 (POBRA).

the claimant to "certain and severe…penalties" such as "double…taxation" or other "draconian" consequences.[531]

Moreover, implementing the Green Infrastructure requirements on a permittee's own public development is not unique to government and does not impose a new program or higher level of service since the test claim permit subjects both public and private projects to the requirements.

Accordingly, although the test claim permit may result in increased costs to implement Green Infrastructure requirements to achieve water quality standards for mercury and PCBs on more projects (which, alone, does not trigger the reimbursement requirement under article XIII B, section 6),[532] Provisions C.11.c.ii.1. and C.12.c.ii.1. do not mandate a new program or higher level of service.

b. Provisions C.11.c.ii.2., C.11.c.iii.1., C.11.c.iii.2., C.11.c.iii.3., C.12.c.ii.2., C.12.c.iii.1., C.12.c.iii.2., and C.12.c.iii.3. mandate a new program or higher level of service to prepare a reasonable assurance analysis of their future mercury and PCBs reductions that will be achieved through Green Infrastructure and to submit one-time reports on information based on the reasonable assurance analysis. However, the annual reporting requirements in Provisions C.11.c.iii.4. and C.12.c.iii.4. are not new and do not mandate a new program or higher level of service.

Provisions C.11.c.ii.2. and C.12.c.ii.2. require the permittees to prepare a reasonable assurance analysis of *future* mercury and PCBs load reductions that quantifies the relationship between the area of Green Infrastructure implementation and the loads reduced, taking into consideration the scale of contamination and the pollutant removal effectiveness of the Green Infrastructure strategies; estimates the amount of land area that will be treated through Green Infrastructure and the loads reduced by 2020, 2030, and 2040; quantitatively demonstrates permittees will achieve the specific load reductions for mercury and PCBs through Green Infrastructure by 2040; and ensures that the calculation methods, models, model inputs, and model assumptions used in the analysis are validated through a peer review process [533] The Fact Sheet explains that the permittees can use the reasonable assurance guidelines already underway in Southern California to comply with this requirement:

> Fortunately, the permittees in the Bay Area can take advantage of related (reasonable assurance analysis) efforts already underway in Southern California. The Los Angeles Regional Water Board has produced a useful set of guidelines for conducting a Reasonable Assurance Analysis (RAA) for the watershed management programs that are required through their

[531] *Department of Finance v. Commission on State Mandates* (*Kern)* (2003) 30 Cal.4th 727, 754 citing *City of Sacramento v. State* (1990) 50 Cal.3d 51, 74.

[532] *City of Anaheim v. State of California* (1987) 189 Cal.App.3d 1478, 1483.

[533] Exhibit A, Test Claim, pages 489-490, 497 (test claim permit, Provisions C.11.c.ii.2. and C.12.c.ii.2.).

> MS4 permits. [Fn. omitted.] These guidelines provide an excellent reference and starting point for the RAA required through C.11/12.c in terms of the mechanics of the analysis, BMP identification, critical condition selection, choice of models, model calibration criteria, modeling inputs, and model outputs. The crucial feature of the Southern California RAAs is that they must demonstrate with sufficient analytical rigor that the suite of foreseeable control measures to reduce loads will result in compliance with final WLAs. The RAA performed for PCBs and mercury for the San Francisco Bay Area will be similar in many respects to the type of analysis described in the Southern California guidance document, but they must also account for the local watershed characteristics as well as what has been learned about the distribution, fate, and transport characteristics of PCBs and mercury.[534]

The Fact Sheet further states that preparing the reasonable assurance analysis will be a step-wise process, requiring the permittees to "establish the relationship between areal extent of green infrastructure implementation and mercury load reductions, estimate the amount and characteristics of land area that will be treated through green infrastructure in future years, and estimate the amount of mercury load reductions that will result from green infrastructure implementation by specific future years. Ultimately, the reasonable assurance analysis will require the use of one or more models."[535]

In addition, Provisions C.11.c.iii. and C.12.c.iii. require permittees to include the reasonable assurance information in several stages in the Annual Reports. In the 2018 Annual Report, they provide the quantitative relationship between Green Infrastructure and mercury/ PCBs load reduction, including all data used and a full description of the models and model inputs relied on.[536] Beginning with the 2019 Annual Report, permittees provide an estimate of the mercury and PCBs loads reduced through Green Infrastructure during the permit term, including all data and a description of the models and model inputs used.[537] And in the 2020 Annual Report, they estimate the amount and characteristics of land area that will be treated through Green Infrastructure by 2020, 2030, and 2040, and give the reasonable assurance analysis which quantitatively demonstrates they will realize 10 kg/year mercury load reduction and 3 kg/year PCBs load reduction through Green Infrastructure by 2040, including all data used and a description of the models and model inputs relied on.[538]

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[534] Exhibit A, Test Claim, page 640 (test claim permit, Fact Sheet).

[535] Exhibit A, Test Claim, page 640 (test claim permit, Fact Sheet).

[536] Exhibit A, Test Claim, pages 490 and 497 (test claim permit, Provisions C.11.c.iii.1. and C.12.c.iii.1.)

[537] Exhibit A, Test Claim, pages 490 and 497 (test claim permit, Provisions C.11.c.iii.4. and C.12.c.iii.4.).

[538] Exhibit A, Test Claim, pages 490 and 497 (test claim permit, Provisions C.11.c.iii.2., C.11.c.iii.3., C.12.c.iii.3., and C.12.c.iii.2.)

Preparing a reasonable assurance analysis of future mercury and PCBs load reductions is new. Federal law requires annual assessments of the controls used by the permittees to ensure compliance with water quality standards during the permit term, including the WLAs established in TMDLs, and an annual report that includes the implementation status of all permit conditions.[539] Federal law does not require a reasonable assurance analysis of *future* reductions, however. In addition, the prior permit did not require a reasonable assurance analysis.[540] Thus, this requirement is new.

However, the requirement in Provisions C.11.c.iii.4. and C.12.c.iii.4. to provide an estimate beginning with the 2019 Annual Report of the mercury and PCBs loads reduced through Green Infrastructure during the permit term, including all data and a description of the models and model inputs used, is not new.[541] Federal law requires stormwater programs to be accompanied with an estimate of the expected reduction of pollutant loads, an annual assessment of the program, and annual reports that identify the status of implementing the stormwater management programs established as permit conditions, a summary of data including monitoring data accumulated during the year, and identification of water quality improvements.[542] The prior permit also required the permittees to file annual reports on the estimated loads of mercury and PCBs reduced as a result of the pilot projects.[543] Thus, the annual reporting required by C.11.c.iii.4. and C.12.c.iii.4. is not new.

The remaining reporting requirements all relate to the reasonable assurance analysis and are one-time in nature:

- Submit in the 2018 Annual Report as part of the reporting required for Provisions C.11.b.iii.2. and C.12.b.iii.3., the quantitative relationship between Green Infrastructure implementation and mercury and PCBs load reductions. This submittal shall include all data used and a full description of models and model inputs relied on to establish this relationship.[544]
- Submit in the 2020 Annual Report an estimate of the amount and characteristics of land area that will be treated through Green Infrastructure implementation by 2020, 2030, and 2040. This submittal shall include all data

[539] Code of Federal Regulations, title 40, section 122.42(c).

[540] Exhibit A, Test Claim, pages 178-191 (prior permit, Provisions C.11. and C.12.).

[541] Exhibit A, Test Claim, pages 490 and 497 (test claim permit, Provisions C.11.c.iii.4. and C.12.c.iii.4.).

[542] Code of Federal Regulations, title 40, sections 122.26(d)(2)(iv); 122.42(c).

[543] Exhibit A, Test Claim pages 178-191, 206 (test claim permit, Provisions C.11., C.12., C.16.).

[544] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.1., C.12.c.iii.1.).

used and a full description of models and model inputs relied on to generate this estimate.[545]

- Submit in the 2020 Annual Report a reasonable assurance analysis to quantitatively demonstrate that mercury load reductions of at least 10 kg/yr and PCBs load reductions of at least 3 kg/year will be realized by 2040 through implementation of Green Infrastructure Projects. This submittal shall include all data used and a full description of models and model inputs relied on to make the demonstration and documentation of peer review of the reasonable assurance analysis.[546]

These reports are not required by federal law or the prior permit and, thus, they are new.

The Commission also finds that the requirements to prepare a reasonable assurance analysis of future mercury and PCBs load reductions and the new one-time reporting requirements are mandated by the state. The California Supreme Court, in *Department of Finance v. Commission on State Mandates*, identified the following test to determine whether certain conditions imposed by an NPDES stormwater permit issued by the Los Angeles Regional Water Board were mandated by the state or federal government:

> If federal law compels the state to impose, or itself imposes, a requirement, that requirement is a federal mandate. On the other hand, if federal law gives the state discretion whether to impose a particular implementing requirement, and the state exercises its discretion to impose the requirement by virtue of a "true choice," the requirement is not federally mandated.[547]

The courts have also explained "except where a regional board finds the conditions are the *only means* by which the [federal] 'maximum extent practicable' standard can be met, the State exercises a true choice by determining what controls are necessary to meet the standard."[548]

Here, the Regional Board argues that all activities required by Provisions C.11. and C.12. are federally mandated, because the San Francisco Bay is impaired for mercury and PCB, and these provisions are needed to ensure compliance with the respective TMDLs for those pollutants.

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[545] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.2., C.12.c.iii.2.).

[546] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.3., C.12.c.iii.3.).

[547] *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 765.

[548] *Department of Finance v. Commission on State Mandates* (2017) 18 Cal.App.5th 661, 682 citing to *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 768, emphasis added.

> Both TMDLs require municipal stormwater agencies to take aggressive action to reduce mercury and PCBs in stormwater discharges and envision that these load reductions will be implemented in successive municipal stormwater permits. Both TMDLS recognized that identification of control measures that will effectively implement the load allocations will be a process of trial and error, and will not be possible within one permit term. U.S. EPA echoed this in its comments on the draft permit, stating, "EPA supports the Water Board's inclusion of specific numeric mercury and PCB milestones and deadlines within this permit cycle." EPA noted that these numeric milestones were consistent with federal guidance and recognized that the "pollutant-specific values are interim milestones to achieve step-wise progress in this permit as well as to measure progress towards attaining the final TMDL wasteload allocations (mercury in 2028 and PCBs in 2030)…." Accordingly, the TMDL provisions in the permit, described below, are (1) required pursuant to 303(d); (2) even if not a federal mandate, are not part of a new program and do not impose a higher level of service, and are not unique to local governments.[549]

Although the TMDLs require permittees to implement control measures to reduce mercury and PCBs loads, the reasonable assurance analysis of future mercury and PCBs load reductions and the new reporting one-time reporting requirements were imposed at the discretion of the Regional Board and there is no evidence in the record to support a finding that the requirements are the only means by which the federal MEP standard can be met.

In addition, these new state-mandated requirements are uniquely imposed on local government and provide a governmental service to the public and, thus, impose a new program or higher level of service.[550] Provisions C.11. and C.12. implement TMDLs restricting the discharge of pollutants into the San Francisco Bay. Although these TMDLs apply to all dischargers, both public and private entities, the specific requirements here are to prepare a reasonable assurance analysis, and include specific information found in the reasonable assurance analysis in one-time annual reports. These are requirements uniquely imposed on permittees, utilizing knowledge possessed through their regulatory permitting authority for projects built within their jurisdiction. They also provide the governmental service of helping to achieve necessary mercury and PCBs load reductions.

Accordingly, the following requirements imposed by Provisions C.11.c.ii.2., C.11.c.iii.1.-3., C.12.c.ii.2., C.12.c.iii.1.-3., mandate a new program or higher level of service:

- Prepare a reasonable assurance analysis of future mercury and PCBs load reductions by doing the following:

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[549] Exhibit C, Regional Board's Late Comments on the Test Claim, page 13.

[550] *Carmel Valley Fire Protection Dist. v. State of California* (1987) 190 Cal.App.3d 521, 537.

- Quantify the relationship between areal extent of Green Infrastructure implementation and mercury and PCBs load reductions, taking into consideration the scale of contamination of the treated area as well as the pollutant removal effectiveness of likely green infrastructure strategies.[551]
- Estimate the amount and characteristics of land area that will be treated through Green Infrastructure by 2020, 2030, and 2040.[552]
- Estimate the amount of mercury/PCBs load reductions that will result from Green Infrastructure implementation by 2020, 2030, and 2040.[553]
- Quantitatively demonstrate that mercury load reductions of at least 10 kg/yr and PCBs load reductions of at least 3 kg/yr will be realized by 2040 through the implementation of Green Infrastructure Projects.[554]
- Ensure that the calculation methods, models, model inputs, and modeling assumptions used to fulfill provisions C.11.c.ii.2.a.-d. and C.12.c.ii.2.a.-d. above have been validated through a peer review process.[555]

- Submit in the 2018 Annual Report as part of the reporting required for Provisions C.11.b.iii.2. and C.12.b.iii.3., the quantitative relationship between Green Infrastructure implementation and mercury and PCBs load reductions. This submittal shall include all data used and a full description of the models and model inputs relied on to establish this relationship.[556]
- Submit in the 2020 Annual Report an estimate of the amount and characteristics of land area that will be treated through Green Infrastructure implementation by 2020, 2030, and 2040. This submittal shall include all data used and a full description of the models and model inputs relied on to generate this estimate.[557]

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[551] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.a., C.12.c.ii.2.a.).

[552] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.b., C.12.c.ii.2.b.).

[553] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.c., C.12.c.ii.2.c.).

[554] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.ii.2.d., C.12.c.ii.2.d.).

[555] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.ii.2.e., C.12.c.ii.2.e.).

[556] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.1., C.12.c.iii.1.).

[557] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.2., C.12.c.iii.2.).

- Submit in the 2020 Annual Report a reasonable assurance analysis to demonstrate quantitatively that mercury load reductions of at least 10 kg/yr and PCBs load reductions of at least 3 kg/yr will be realized by 2040 through the implementation of Green Infrastructure Projects. This submittal shall include all data used and a full description of models and model inputs relied on to make the demonstration and documentation of peer review of the reasonable assurance analysis.[558]

    e. Most of the requirements in Provisions C.11.a. and C.11.b., regarding control measures to achieve mercury load reductions in accordance with the mercury TMDL, are not new and do not mandate a new program or higher level of service. However, the requirement in Provision C.11.a.iii.1. to report on progress towards developing a list of the watersheds and management areas where control measures are currently being implemented or will be implemented during the permit term, is new and imposes a state-mandated new program or higher level of service.

For the reasons below, the Commission finds that except for the requirement to provide a progress report on preparing the list of watersheds and management areas where control measures are implemented or will be implemented during the permit term (C.11.a.iii.1.), the remaining requirements imposed by Provisions C.11.a. and b. are *not* new and do not constitute a new program or higher level of service.

i. Most of the requirements in Provisions C.11.a. and C.11.b. relating to the reduction of mercury are not new, except for the requirement to report on progress toward developing a list of the watersheds and management areas where mercury control measures are currently being implemented or will be implemented during the permit term (C.11.a.iii.1.), which is new.

The plain language of Provision C.11.a. says that permittees shall "implement mercury source and treatment control measures and pollution prevention strategies to reduce mercury loads throughout the [permit area][559] by doing all of the following:

- Identify the watersheds or portions of watersheds (management areas) in which mercury control measures are currently being implemented and those in which new control measures will be implemented during the permit term, as well as identify the control measures that are currently being implemented and those that will be implemented in each watershed and management area.[560]

[558] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.3., C.12.c.iii.3.).

[559] Exhibit A, Test Claim, page 486 (test claim permit, Provision C.11.a.i.).

[560] Exhibit A, Test Claim, page 486 (test claim permit, Provisions C.11.a.ii.1. and 2.).

- Submit a schedule for control measure implementation.[561]
- Implement mercury source and treatment control measures and pollution prevention strategies and quantify mercury load reductions achieved by using the accounting methods established according to Provision C.11.b.[562]
- By April 1, 2016, report on progress towards developing a list of the watersheds and portions of watersheds (management areas) where mercury control measures are currently being implemented, and those in which control measures will be implemented during the permit term, as well as the monitoring data and other information used to select these watersheds and management areas.[563]
- In the 2016 Annual Report, report the list of watersheds and management areas where mercury controls are currently being implemented or will be implemented during the permit term, the specific control measures that are currently being implemented and those that will be implemented in these watersheds and management areas, and an implementation schedule for these control measures.[564] This report shall also include:
    - The number, type, and locations and/or frequency (if applicable) of control measures;
    - The description, scope, and start date of pollution prevention measures;
    - For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural BMPs or other relevant milestones for non-structural BMPs), and a schedule for milestone achievement; and
    - Clear statements of the roles and responsibilities of each participating Permittee for implementation of pollution prevention or control measures identified in C.11.a.ii.2.[565]
- Beginning with the 2017 Annual Report and continuing in all Annual Reports, update all the information required by Provision C.11.a.iii.2. as necessary to account for new control measures implemented, but not described in the 2016 Annual Report.[566]

Provision C.11.b. requires permittees to develop and implement an assessment methodology and data collection program to quantify in a technically sound manner

[561] Exhibit A, Test Claim, page 486 (test claim permit, Provision C.11.a.ii.3.)

[562] Exhibit A, Test Claim, page 486 (test claim permit, Provision C.11.a.ii.4.).

[563] Exhibit A, Test Claim, page 486 (test claim permit, Provision C.11.a.iii.1.).

[564] Exhibit A, Test Claim, pages 486-487 (test claim permit, Provision C.11.a.iii.2.).

[565] Exhibit A, Test Claim, page 487 (test claim permit, Provision C.11.a.ii.2.a-d.).

[566] Exhibit A, Test Claim, page 487 (test claim permit, Provision C.11.a.iii.3.).

mercury loads reduced through implementation of pollution prevention, source control, and treatment control measures, including mercury source control, stormwater treatment, green infrastructure, and other measures. This assessment methodology shall be used to demonstrate progress towards achieving the load reductions required in this permit term and the program area wasteload allocations.[567] The Fact Sheet states that the reasonable and technically sound load reduction accounting system was based on information submitted by the permittees in their 2014 Integrated Monitoring Report.[568] The test claim permit therefore describes the activities required by this task as "documenting the method described in the Fact Sheet or any alternative methodology, updating and refining the accounting system to account for new information, justifying assumptions, analytical methods, sampling schemes and parameters used to quantify the load reduction for each type of control measure, and indicating what information will be collected and submitted to confirm the calculated load reduction for each control measure implemented."[569] Provision C.11.b. requires the following tasks:

- Adequately quantify the mercury load reductions achieved through implementing pollution prevention, source control, and treatment control efforts.[570]
- Submit the chosen assessment methodology and data collection program with the 2016 Annual Report for executive approval.[571]
- Beginning with the 2017 Annual Report, annually report the mercury loads reduced using either the default or an approved alternative assessment methodology, to demonstrate the cumulative mercury load reduced from each control measure implemented since the beginning of the permit term; and submit all supporting data and information necessary to substantiate the load reduction estimates, including appropriate reference to the control measure descriptions required under C.11.a.[572]
- Beginning with the 2018 Annual Report, submit any necessary refinements to the measurement and estimation methodologies to assess mercury load reductions in the subsequent permit term for Executive Officer approval.[573]

The Commission finds that most of these requirements are *not* new and, thus, do not constitute a new program or higher level of service, except for the requirement to provide a progress report on preparing the list of watersheds and management areas

[567] Exhibit A, Test Claim, page 487 (test claim permit, Provision C.11.b.i.).

[568] Exhibit A, Test Claim, page 638 (test claim permit, Fact Sheet).

[569] Exhibit A, Test Claim, page 487 (test claim permit, Provision C.11.b.i.).

[570] Exhibit A, Test Claim, page 488 (test claim permit, Provisions C.11.b.ii.).

[571] Exhibit A, Test Claim, page 488 (test claim permit, Provisions C.11.b.iii.1.).

[572] Exhibit A, Test Claim, page 488 (test claim permit, Provisions C.11.b.iii.2.).

[573] Exhibit A, Test Claim, page 488 (test claim permit, Provisions C.11.b.iii.3.).

where control measures are implemented or will be implemented during the permit term (C.11.a.iii.1.), which is new.

The requirements to select and implement control measures and mercury source and treatment control measures in selected watersheds in accordance with Provisions C.11.a.i. and C.11.a.ii.1., 2., and 4., are not new and do not impose a new program or higher level of service. As indicated above, the mercury TMDL became effective in February 2008, before the December 1, 2009 effective date of the prior permit.[574] TMDLs calculate the maximum amount of each constituent pollutant that the water body can assimilate and still meet water quality standards.[575] The TMDL and the wasteload allocations allocated to dischargers are required by federal law to be established at levels necessary to meet water quality standards.[576] And existing federal law requires permittees to meet water quality standards by implementing controls to reduce pollutants in urban runoff from commercial, residential, industrial, and construction land uses or activities, and to have the legal authority to control the discharges to their MS4.[577]

Moreover, meeting water quality standards for mercury is not new to the claimants; narrative criteria or objectives existed in the Basin Plan before the TMDLs were adopted.[578] The Basin Plan provided that surface waters shall not contain concentrations of chemical constituents in amounts that adversely affected any designated beneficial use.[579] The Basin Plan also had a water quality objective for

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[574] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, page 4; California Code of Regulations, title 23, section 3915; Exhibit A, Test Claim, page 207 (prior permit, Provision C.21.).

[575] United States Code, title 33, section 1313(d); Code of Federal Regulations, title 40, section 130.7(c).

[576] Code of Federal Regulations, title 40, section 130.2(h), 130.7(c)(1) ("TMDLs hall be established for all pollutants preventing or expected to prevent attainment of water quality standards"); *Communities for a Better Environment v. State Water Resources Control Bd.* (2003) 109 Cal.App.4th 1089, 1095-1096.

[577] United States Code, title 33, section 1342(p)(3)(B)(iii) (Permits for discharges from municipal storm sewers "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods"); Code of Federal Regulations, title 40, section 122.26(d)(2)(i)(A-D) and (iv)(A-D).

[578] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, pages 6, 10 (Before the adoption of the TMDL for mercury, the Basin Plan provided that surface waters shall not contain concentrations of chemical constituents in amounts that adversely affected any designated beneficial use. In 1998, the Regional Board adopted a 303(d) impaired water body list classifying all of San Francisco Bay as impaired due to mercury.)

[579] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, page 6.

mercury in surface waters not to exceed a 4-day average of 0.025 ug/l, and a one-hour average of 2.1 ug/l.[580]

In addition, compliance with the wasteload allocations adopted in the mercury TMDL was required under the prior permit by performing the same activities as required by the test claim permit. The prior permit's discharge prohibitions and receiving water limitations in Provisions A and B required and prohibited the following:

- Permittees shall, within their respective jurisdictions, effectively prohibit the discharge of non-stormwater (materials other than stormwater) into, storm drain systems and watercourses.[581]
- It shall be prohibited to discharge rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas.[582]
- The discharge shall not cause conditions of nuisance or adversely affect the beneficial uses of the waters, including from "[s]ubstances present in concentrations or quantities that would cause deleterious effects on aquatic biota, wildlife, waterfowl, or that render of these unfit for human consumption."[583]
- The discharge shall not cause or contribute to a violation of any applicable water quality standard for receiving waters.[584]

The Basin Plan was amended to include the wasteload allocations adopted in the mercury TMDL.[585]

The prior permit, in Provision C.1. then required the permittees to "comply with Discharge Prohibitions A.1 and A.2 and Receiving Water Limitations B.1 and B.2 through the timely implementation of control measures *and* other actions specified in Provisions C.2 through C.15" of the prior permit.[586] The prior permit, in Provision C.8.e., also imposed monitoring requirements to ensure compliance with water quality standards, including pollutants of concern monitoring (including monitoring for mercury, a category 1 pollutant), to quantify annual loads or concentrations of pollutants of concern from tributaries to the Bay; quantify the decadal-scale loading or concentration trends of pollutants of concern from small tributaries to the Bay; and quantify the projected impacts of management actions (including control measures) on tributaries

[580] Exhibit X (2) Basin Plan 2007, page 68.

[581] Exhibit A, Test Claim, page 91 (prior permit, Provision A.1.).

[582] Exhibit A, Test Claim, page 91 (prior permit, Provision A.2.).

[583] Exhibit A, Test Claim, page 91 (prior permit, Provision B.1.).

[584] Exhibit A, Test Claim, page 91 (prior permit, Provision B.2.).

[585] California Code of Regulations, title 23, section 3915.

[586] Exhibit A, Test Claim, page 92 (Prior Permit, Provision C.1.), emphasis added.

and identifying where these management actions should be implemented to have the greatest beneficial impact.[587] Provision C.11. of the prior permit specifically required the permittees to develop and implement a monitoring program to quantify mercury loads and loads reduced through source control, treatment, and other management measures pursuant to Provision C.11.g.[588] These requirements are consistent with existing federal law, which requires the claimants to monitor compliance with the effluent limitations identified in an NPDES permit, implement best management practices to control the pollutants, and report monitoring results at least once per year, or within 24 hours for any noncompliance which may endanger health or the environment.[589]

Thus, the permittees were required by prior state and federal laws to select and implement control measures of their choosing to meet the water quality standards for mercury. These prior requirements also implement a 1999 precedential order from the State Water Resources Control Board requiring permits to achieve water quality standards in protected waters through the implementation of control measures.[590] Therefore, the claimants had an existing duty to comply with the water quality standards for mercury when the prior permit was adopted through the selection and implementation of control measures in their water bodies and, therefore, these requirements are not new.

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[587] Exhibit A, Test Claim, pages 163-166 (prior permit, Provision C.8.e.).

[588] Exhibit A, Test Claim, page 182 (prior permit, Provision C.11.g.).

[589] United States Code, title 33, section 1342(p)(3)(B)(iii) requires that permits for discharges from municipal storm sewers "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as . . . the State determines appropriate for the control of such pollutants." Emphasis added. See also, Code of Federal Regulations, title 40, sections 122.41 (conditions applicable to all permits, including monitoring and reporting requirements); section 122.44(i) (monitoring requirements to ensure compliance with permit limitations); section 122.48 (requirements for recording and reporting monitoring results); and Part 127 (electronic reporting).

[590] Exhibit A, Test Claim, page 234 (prior permit, Fact Sheet); Exhibit X (6), State Water Resources Control Board Order WQ 2015-0075, pages 11-12, which describes the Water Board's 1999 Order; see also *Building Industry Association of San Diego County v. State Water Resources Control Board* (2004) 124 Cal.App.4th 866, 880 (holding permit provisions requiring compliance with water quality standards are proper under federal law); *Natural Resources Defense Council, Inc. v. County of Los Angeles* (2013) 725 F.3d 1194, 1199, 1206-1207 (holding that if a permittee's monitoring data shows that the level of pollutants in federally protected water bodies exceeds those allowed under the permit, then, as a matter of permit construction, the monitoring data conclusively demonstrates that the County Defendants are not "in compliance" with the Permit conditions.).

Moreover, the requirements to select and implement control measures to reduce the discharge of mercury to protected waters in selected watersheds in accordance with the TMDL is not unique to government and does not provide a governmental service to the public and, therefore, does not impose a new program or higher level of service.[591] The TMDL for mercury also imposed wasteload allocations on private industrial dischargers, including Chevron, Conoco, Martinez Refining Company, Valero, C&H Sugar, requiring these dischargers to reduce their discharges to meet water quality standards for mercury by implementing "effective programs to control mercury sources and loading."[592] Thus, compliance with the mercury TMDL by implementing control measures is not uniquely imposed on government and does not provide a *governmental* service to the public, but applies equally to public and private entities that discharge to the Bay. In this respect, the TMDL requirements are no different from the alleged mandated activities in *County of Los Angeles v. Department of Industrial Relations*.[593] In that case, the County sought reimbursement for complying with earthquake and fire safety regulations applicable to elevators in public buildings.[594] The "County acknowledges that the elevator safety regulations apply to all elevators, not just those which are publicly owned."[595] The court concluded that therefore the regulations "do not impose a 'unique requirement' on local government, [and] they do not meet the second definition of 'program' established by [County of Los Angeles I]."[596] Similarly, in *City of Richmond*, state law exempted public safety employees from the requirement to pay death benefits to a deceased employee's survivors under workers compensation statutes.[597] After the state repealed the exemption for public safety employees, the city sought reimbursement for the payment of workers compensation death benefits, which had to be made in addition to a PERS death benefit.[598] The court denied reimbursement, finding that the payment of death benefits under the workers

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[591] *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56; *Carmel Valley Fire Protection Dist. v. State of California* (1987) 190 Cal.App.3d 521, 537; *Department of Finance v. Commission on State Mandates* (2021) 59 Cal.App.5th 546, 557.

[592] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, pages 16-17, 24.

[593] *County of Los Angeles v. Department of Industrial Relations* (1989) 214 Cal.App.3d 1538, 1545.

[594] *County of Los Angeles v. Department of Industrial Relations* (1989) 214 Cal.App.3d 1538, 1545.

[595] *County of Los Angeles v. Department of Industrial Relations* (1989) 214 Cal.App.3d 1538, 1545.

[596] *County of Los Angeles v. Department of Industrial Relations* (1989) 214 Cal.App.3d 1538, 1545.

[597] *City of Richmond v. Commission on State Mandates* (1998) 64 Cal.App.4th 1190, 1193-1194.

[598] *City of Richmond v. Commission on State Mandates* (1998) 64 Cal.App.4th 1190, 1196.

compensation statutes was not unique to government. The court agreed with the Commission; "[t]hat [the test claim statute] affects only local government does not compel the conclusion that it imposes a unique requirement on local government."[599]

Therefore, the requirements to select and implement mercury source and treatment control measures in selected watersheds in accordance with Provisions C.11.a.i. and C.11.a.ii.1., 2., and 4., do not mandate a new program or higher level of service.

Provision C.11.a.ii.3. requires the permittees to submit a schedule of control measure implementation during the permit term. This requirement is not new. Federal law requires a proposed management program, which shall include a description of the structural and source control measure to control pollutants that are to be implemented during the life of the permit, an estimate of the expected resulting pollutant loads reduced, and a proposed schedule for implementing such controls.[600] Thus, it is not a new requirement to provide a schedule for control measures to be implemented during the permit term. Thus, Provisions C.11.a.ii.3. does not mandate a new program or higher level of service.

Provisions C.11.b.i. and ii. require permittees to develop and implement an assessment methodology and data collection program that will be used to quantify in a technically sound manner the mercury load reduced through the implementation of pollution prevention, source control, and treatment control measures, by either using the default methodology identified in the Fact Sheet (which is derived from 2014 Integrated Monitoring Report required by the prior permit), or modifying the program.[601] This is not a new requirement and does not mandate a new program or higher level of service. The prior permit required permittees to develop and implement a monitoring program to quantify their mercury loads and loads reduced through source control, treatment and other management measures.[602] Provision C.11.g.ii. of the prior permit specified this would be done by either: 1) quantifying through estimates the annual mercury load reduced through pollution prevention, source control, and treatment control efforts or other relevant efforts; 2) quantifying the mercury load as a rolling five-year annual average using data on flow and water column mercury concentrations; or 3) quantitatively demonstrating that the mercury concentration of suspended sediment that best represents sediment discharged with urban runoff is below the target of 0.2 mg mercury/kg dry weight. Permittees were required to report their chosen methods and a full description of the measurement and estimation methodology and rationale for the approach in their 2010 Annual Report; and report the results of their chosen monitoring/measurement approach concerning the loads assessment and estimate of

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[599] *City of Richmond v. Commission on State Mandates* (1998) 64 Cal.App.4th 1190, 1197.

[600] Code of Federal Regulations title 40 section 122.26 (d)(2)(iv).

[601] Exhibit A, Test Claim, pages 487-488 (test claim permit, Provision C.11.b.i. and ii.).

[602] Exhibit A, Test Claim, page182 (prior permit, Provision C.11.g.i.).

loads reduced in the 2014 Integrated Monitoring Report.[603] The 2014 Integrated Monitoring Report was used as the basis for the default assessment methodology and data collection described in the Fact Sheet for Provision C.11.b. of the test claim permit.[604] Thus, using the existing methodology developed under the prior permit is not new and developing a new methodology is not required by the test claim permit, but a choice provided to the permittees. In addition, and as stated above, federal law requires a permittee's management program include an estimate of the expected resulting pollutant loads reduced.[605] Moreover, the mercury TMDL requires private dischargers to also monitor their discharges and document their mercury effluent concentrations, ongoing source control activities, and mercury loads avoided as a result, which is substantially the same as developing a data collection program, and thus the requirements are not unique to government or provide a governmental service to the public.[606] Therefore, requiring permittees to develop and implement an assessment methodology and data collection program in accordance with Provisions C.11.b.i. and ii. is not a new program or higher level of service, but was required for all dischargers by federal law and the TMDL, and the prior permit adopted for the local agency permittees, which implemented the mercury TMDL.

Moreover, the following reporting requirements imposed by Provisions C.11.b.iii.1.-3. are not new.

- Submit the chosen assessment methodology and data collection program with the 2016 Annual Report for executive approval.[607]
- Beginning with the 2017 Annual Report, annually report the mercury loads reduced using either the default or an approved alternative assessment methodology, to demonstrate the cumulative mercury load reduced from each control measure implemented since the beginning of the permit term; and submit all supporting data and information necessary to substantiate the load reduction estimates, including appropriate reference to the control measure descriptions required under C.11.a.[608]
- Beginning with the 2018 Annual Report, submit any necessary refinements to the measurement and estimation methodologies to assess mercury load reductions in the subsequent permit term for Executive Officer approval.[609]

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[603] Exhibit A, Test Claim, pages 182-183 (prior permit, Provision C.11.g.iii.).

[604] Exhibit A, Test Claim, pages 638-639 (test claim permit, Fact Sheet).

[605] Code of Federal Regulations title 40 section 122.26 (d)(2)(iv).

[606] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, page 24.

[607] Exhibit A, Test Claim, page 488 (test claim permit, Provisions C.11.b.iii.1.).

[608] Exhibit A, Test Claim, page 488 (test claim permit, Provisions C.11.b.iii.2.).

[609] Exhibit A, Test Claim, page 488 (test claim permit, Provisions C.11.b.iii.3.).

Under federal law, a permittee, when obtaining an NPDES permit, is required to identify a proposed management program that includes measures to control pollutants during the life of the permit, an estimate of the expected pollutant loads reduced as a result of those measures, and a proposed schedule for implementing such controls.[610] Federal law then requires that an annual report be filed by the permittees by the anniversary date of the issuance of the permit and include the following information:

- The status of implementing the components of the stormwater management program that are established as permit conditions.
- Proposed changes to the stormwater management programs that are established as permit conditions. Such proposed changes shall be consistent with Code of Federal Regulations, title 40, 122.26(d)(2)(iii) (which requires a permittee to provide information, as specified, characterizing the quality and quantity of discharges covered in the permit application).
- Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit.
- A summary of data, including monitoring data, that is accumulated throughout the reporting year.
- Annual expenditures and budget for the year following each annual report.
- A summary describing the number and nature of enforcement actions, inspections, and public education programs.
- Identification of water quality improvements or degradation.[611]

As indicated above, the permittees were already required by the prior permit to use control measures to reduce the discharge of mercury and, thus, were required by federal law to report the status of that program, the mercury loads reduced, and any necessary refinements to the measurement and estimation methodologies chosen to assess mercury load reductions.[612] The prior permit also required the permittees, in Provision C.11.g.iii., to identify the monitoring and measurement approach the permittees chose to use in the 2010 annual report and to report the mercury loads assessment and loads reduced in the 2014 Integrated Monitoring Report.[613] Thus, none of the activities required by Provision C.11.b. are new.

In contrast, Provision C.11.a.iii.1. requires permittees to submit a report on their *progress towards developing* the list of where control measures will be implemented and the monitoring data and other information used to select them. This progress report answers a separate question than the information that is to be included in the 2016

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[610] Code of Federal Regulations title 40 section 122.26 (d)(2)(iv).

[611] Code of Federal Regulations, title 40, section 122.42(c).

[612] Exhibit A, Test Claim, page 178 (prior permit, Provision C.11.).

[613] Exhibit A, Test Claim, pages 182-183 (prior permit, Provision C.11.g.iii.).

Annual Report under Provision C.11.a.iii.2., namely verifying that the permittee is working to prepare the list and is using data and other information likely to result in a satisfactorily completed list. It also has a separate and additional deadline from any other previously required reports of April 1, 2016. Therefore, the following is a new requirement within Provision C.11.a.iii.1.:

- By April 1, 2016, report on progress towards developing a list of the watersheds and portions of watersheds (management areas) where mercury control measures are currently being implemented, and those in which control measures will be implemented during the permit term, as well as the monitoring data and other information used to select these watersheds and management areas.[614]

ii. The new requirement imposed by Provision C.11.a.iii.1. to file a progress report with the Regional Board by April 1, 2016, is mandated by the state and imposes a new program or higher level of service within the meaning of article XIII B, section 6 of the California Constitution.

The California Supreme Court, in *Department of Finance v. Commission on State Mandates*, identified the following test to determine whether certain conditions imposed by an NPDES stormwater permit issued by the Los Angeles Regional Water Board were mandated by the state or the federal government:

> If federal law compels the state to impose, or itself imposes, a requirement, that requirement is a federal mandate. On the other hand, if federal law gives the state discretion whether to impose a particular implementing requirement, and the state exercises its discretion to impose the requirement by virtue of a "true choice," the requirement is not federally mandated.[615]

As indicated in the court's decision, this is the long-standing test identified in prior case law to determine if requirements imposed by state statute or executive order are mandated by the state or the federal government when the state is implementing federal law.[616]

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[614] Exhibit A, Test Claim, page 486 (test claim permit, Provision C.11.a.iii.1.).

[615] *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 765.

[616] See *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 764-765, where the court explains the following prior decisions: *City of Sacramento v. State of California* (1990) 50 Cal.3d 51, which addressed local governments' reimbursement claims for the costs of extending unemployment insurance protection to their employees pursuant to a federal statute that induced the state's compliance with a carrot and stick; *County of Los Angeles v. Commission on State Mandates* (1995) 32 Cal.App.4th 805, addressing a state statute that required local governments to provide indigent criminal defendants with experts for the preparation of their defense in accordance with federal law; and *Hayes v. Commission on State Mandates* (1992) 11

The courts have also explained "except where a regional board finds the conditions are the only means by which the [federal] 'maximum extent practicable' standard can be met, the State exercises a true choice by determining what controls are necessary to meet the standard."[617] "That the . . . Regional Board found the permit requirements were 'necessary' to meet the standard establishes only that the . . . Regional Board exercised its discretion."[618]

Here, the mercury TMDL is required by federal law since the waterbodies were 303(d) listed as impaired because of mercury. Regional boards are then required by federal law to include effluent limits compliant with "all applicable water quality standards" and "consistent with the assumptions and requirements of any available wasteload allocation for the discharge" in NPDES permits.[619] The permits can also include such other provisions as the permitting agency determines to be appropriate for the control of pollutants.[620]

However, the specific new activity found in Provision C.11.a.iii.1. was for permittees to submit a separate report by April 1, 2016 on their progress towards developing a list of the watersheds and management areas where mercury control measures are currently being implemented and those in which new control measures will be implemented during the permit term, as well as the monitoring data and other information used to select these watersheds and management areas. This progress report is in addition to the Annual Report, as demonstrated by the fact that permittees are required to submit the finished version of the list of watersheds and management areas later that same year in their 2016 Annual Report.[621] Federal law does not require NPDES stormwater permittees to submit an additional report on their progress in preparing the required information about where control measures are being implemented. Thus, the Regional Board exercised discretion when it required permittees to report by April 1, 2016 on progress towards developing the list of watersheds and management areas where mercury control measures are being implemented and those where control measures will be implemented, as well as the monitoring data and other information used to identify the areas.

Cal.App.4th 1564, which addressed state special education statutes implementing the federal Education of the Handicapped Act.

[617] *Department of Finance v. Commission on State Mandates* (2017) 18 Cal.App.5th 661, 682 citing to *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 768, emphasis added.

[618] *Department of Finance v. Commission on State Mandates* (2017) 18 Cal.App.5th 661, 682.

[619] Code of Federal Regulations, title 40, section 122.44(d)(1)(vii).

[620] United States Code, title 33, section 1342(p)(3)(B)(iii).

[621] See Exhibit A, Test Claim, page 487 (test claim permit, Provision C.11.a.iii.2.).

Moreover, the requirement of Provision C.11.a.iii.1. constitutes a new program or higher level of service. The requirement to submit a progress report is uniquely imposed on local agency permittees. The Regional Board has mandated that the permittees prepare this progress report and schedule as part of their BMPs to comply with the WLA assigned to MS4 permittees identified in the TMDL to achieve water quality standards for urban runoff and, thus, the requirement also provides a governmental service to the public.[622]

Accordingly, the Commission finds that Provision C.11.a.iii.1. mandates a new program or higher level of service by requiring permittees to perform the following activity:

- By April 1, 2016, report on progress towards developing a list of the watersheds and portions of watersheds (management areas) where mercury control measures are currently being implemented, and those in which control measures will be implemented during the permit term, as well as the monitoring data and other information used to select these watersheds and management areas.[623]

    f. Provisions C.12.a., C.12.d., and C.12.e., regarding control measures to achieve PCBs load reductions, impose some state-mandated new programs or higher levels of service to submit specific reports; prepare an implementation plan and schedule of future actions, and a reasonable assurance analysis showing control measures will be fully implemented in the future to achieve the PCBs TMDL wasteload allocations by 2030; and sample caulks and sealants in storm drains and roadway infrastructures. The remaining requirements are not new and do not mandate a new program or higher level of service.

Provision C.12. imposes requirements discussed below to achieve interim load reductions for PCBs during the term of the test claim permit, and to ultimately achieve the aggregate wasteload allocation of 1.6 kg/yr by March 2030, in accordance with the PCBs TMDL.[624]

i. Most of the requirements in Provision C.12.a. are not new and, thus, do not mandate a new program or higher level of service, except for some of the reporting requirements, which are new.

Provision C.12.a.i. requires permittees to "implement PCBs source and treatment control measures and pollution prevention strategies" to achieve the PCBs load reductions outlined in Table 12.1 throughout the permit area.[625] Table 12.1 identifies the following "PCBs Load Reductions Performance Criteria by County":

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[622] See *Carmel Valley Fire Protection District v. State of California* (1987) 190 Cal.App.3d 521, 537-538.

[623] Exhibit A, Test Claim, page 486 (test claim permit, Provision C.11.a.iii.1.).

[624] Exhibit A, Test Claim, page 492 (test claim permit, Provision C.12.).

[625] Exhibit A, Test Claim, page 492 (test claim permit, Provision C.12.a.i.).

County	PCBs Load Reduction (g/yr) by June 30, 2018	PCBs Load Reduction (g/yr) by June 30, 2020
Alameda Permittees	160	940
Contra Costa Permittees	90	560
San Mateo Permittees	60	370
Santa Clara Permittees	160	940
Solano Permittees: Suisun City, Vallejo, Fairfield	30	190
Totals	**500**	**3000**[626]

Provision C.12.a.ii.4. explains that "For all Permittees combined, the county-specific average annual PCBs load reduction performance criteria shall total 0.5 kg/yr by June 30, 2018, and 3.0 kg/yr by June 30, 2020. The June 30, 2020, deadline shall be extended to December 31, 2020, if the Permittees provide documentation that control measures that will attain the load reduction will be implemented by December 31, 2020."[627]

Provision C.12.a.iv. also states that the permittees may meet the load reductions as a group, rather than by county, and can use an alternative method of distributing the county load reductions if they choose, but all permittees within a county shall use the same method of distributing the county load reductions.[628]

To implement this, the plain language of Provision C.12.a. requires the following:

- Identify the watersheds or portions of watersheds (management areas) in which PCBs control measures are currently being implemented and those in which new control measures will be implemented during the permit term, as well as identify the control measures that are currently being implemented and those that will be implemented in each watershed and management area.[629]

  The Fact Sheet identifies potential control measures including the removal, capping, and paving of contaminated sediment in newly developed or redeveloped areas; retrofits or other treatment controls, such as green infrastructure; cleanup of contaminated private properties; control measures to prevent discharge to storm drains of PCBs in building materials during

[626] Exhibit A, Test Claim, page 493 (test claim permit, Table 12.1.).

[627] Exhibit A, Test Claim, page 492 (test claim permit, Provision C.12.a.ii.4.).

[628] Exhibit A, Test Claim, pages 492-493 (test claim permit, Provision C.12.a.ii.4.).

[629] Exhibit A, Test Claim, page 492 (test claim permit, Provisions C.12.a.ii.1 and 2.).

demolition; and enhanced operation and maintenance control measures to reduce loads of mercury and PCBs, including street sweeping, drain inlet cleaning, pump station maintenance, and PCBs captured by full trash capture devices.[630]

- Submit a schedule for control measure implementation.[631]
- Implement sufficient control measures to achieve the permit-area-wide PCBs load reduction of 0.5 kg/year by June 30, 2018 and 3.0 kg/yr by June 30, 2020, or the county-specific load reduction performance criteria outlined in table 12.1.[632]
- By April 1, 2016, report progress towards developing a list of the watersheds and portions of watersheds (management areas) where PCBs control measures are currently being implemented and those in which PCBs control measures will be implemented during the permit term, including watersheds containing contaminated sites that were referred to the Water Board, as well as the monitoring data and other information used to select these watersheds and management areas.[633]
- In the 2016 Annual Report, report the list of watersheds and management areas where control measures are currently being implemented or will be implemented during the permit term, along with the specific control measures that are currently being implemented, and those that will be implemented in those watersheds and management areas and an implementation schedule for those control measures.[634] Include the following:
    - The number, type, and locations and/or frequency (if applicable) of control measures;
    - A cumulative listing of all potentially PCBs-contaminated sites permittees have discovered and referred to the Water Board to date, with a brief summary description of each site and where to obtain further information;
    - The description, scope, and start date of PCBs control measures;
    - For each structural control and non-structural BMP, interim implementation progress milestones (e.g. construction milestones for structural controls or other relevant implementation milestones for structural controls or non-structural BMPs) and a schedule for milestone achievement; and

[630] Exhibit A, Test Claim, pages 647-649 (test claim permit, Fact Sheet).

[631] Exhibit A, Test Claim, page 492 (test claim permit, Provision C.12.a.ii.3.)

[632] Exhibit A, Test Claim, page 492 (test claim permit, Provision C.12.a.ii.4.).

[633] Exhibit A, Test Claim, page 493 (test claim permit, Provision C.12.a.iii.1.).

[634] Exhibit A, Test Claim, pages 492-494 (test claim permit, Provision C.12.a.iii.2.).

- Clear statements of the roles and responsibilities of each participating permittee for implementation of pollution prevention or identified control measures.[635]

- Beginning with the 2017 Annual Report, update all information required in C.12.a.iii.2. as necessary to account for new control measures implemented but not described in the 2016 Annual Report.[636]

The Commission finds that the requirements to identify watersheds and implement PCBs source and treatment control measures and pollution prevention strategies to achieve PCBs load reductions in accordance with Provisions C.12.a.i., C.12.a.ii.1., C.12.a.ii.2., and C.12.a.ii.4. are not new and do not mandate a new program or higher level of service.

Before the adoption of the TMDL, the Basin Plan contained a narrative water quality objective stating that controllable water quality factors shall not cause a detrimental increase in toxic substances found in bottom sediments or aquatic life.[637] In addition, in May 2000, the CTR established numeric water quality criteria of 0.00017 ug/L total PCBs in water that apply to the San Francisco Bay.[638] The CTR is a water quality standard that applies to "'all waters' for 'all purposes and programs under the CWA.'"[639] However, all segments of the San Francisco Bay were not meeting the narrative and CTR water quality standards, were listed as impaired for PCBs, and were 303(d) listed in 1998.[640] Thus, the permittees had actual knowledge that PCBs loads had to be reduced in 1998.

The Regional Board adopted the PCBs TMDL on February 13, 2008; it was approved by the State Board on October 20, 2009; was approved by the Office of Administrative Law on March 1, 2010; and was approved by the U.S. EPA on March 29, 2010.[641] This was happening concurrently to drafting the prior permit, which became effective on December 1, 2009.[642]

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[635] Exhibit A, Test Claim, page 494 (test claim permit, Provisions C.12.a.iii.2.a-e.).

[636] Exhibit A, Test Claim, page 494 (test claim permit, Provision C.12.a.iii.3.).

[637]Exhibit X (2) Basin Plan 2007, page 57 (section 3.3.2); Exhibit X (5), Order R2-2008-0012, PCBs TMDL, page 5.

[638] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, pages 1, 5.

[639] *Santa Monica Baykeeper v. Kramer Metals, Inc.* (2009) 619 F.Supp.2d 914, 927.

[640] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, page 5.

[641] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, page 3; California Code of Regulations, title 23, section 3919.6.

[642] Exhibit A, Test Claim, page 207 (prior permit, Provision 21.).

TMDLs calculate the maximum amount of each constituent pollutant that the water body can assimilate and still meet water quality standards.[643] The TMDL and the wasteload allocations allocated to dischargers are required by federal law to be established at levels necessary to meet water quality standards.[644] Meeting water quality standards for these pollutants is not new to the claimants. Existing federal law requires permittees to meet water quality standards by implementing controls to reduce pollutants in urban runoff from commercial, residential, industrial, and construction land uses or activities, and to have the legal authority to control the discharges to their MS4.[645] In addition, and as explained above, narrative and numeric criteria or objectives existed in the Basin Plan and the CTR before the TMDLs were adopted. Moreover, the prior permit implemented the PCBs TMDL, stating that one of the goals was to "achieve Waste Load Allocations adopted under Total Maximum Daily Loads" and "to implement the urban runoff requirements of the PCBs TMDL and reduce PCBs loads to make substantial progress toward achieving the urban runoff PCBs load allocation."[646] Thus, compliance with the water quality standards and the wasteload allocations adopted in the PCBs TMDL was required under the prior permit and, as explained below, the prior permit imposed the same activities as required by the test claim permit.

In addition, the prior permit required the permittees to identify watersheds and implement PCBs source and treatment control measures and pollution prevention strategies to achieve PCBs load reductions in accordance with the wasteload allocations set by the TMDL. The prior permit's discharge prohibitions and receiving water limitations in Provisions A and B prohibited discharges that cause or contribute to a violation of any applicable water quality standard for receiving waters,[647] including those for PCBs, and also required the following:

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[643] United States Code, title 33, section 1313(d); Code of Federal Regulations, title 40, section 130.7(c).

[644] Code of Federal Regulations, title 40, section 130.2(h), 130.7(c)(1) ("TMDLs shall be established for all pollutants preventing or expected to prevent attainment of water quality standards"); *Communities for a Better Environment v. State Water Resources Control Bd.* (2003) 109 Cal.App.4th 1089, 1095-1096.

[645] United States Code, title 33, section 1342(p)(3)(B)(iii) (Permits for discharges from municipal storm sewers "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods"); Code of Federal Regulations, title 40, section 122.26(d)(2)(i)(A-D) and (iv)(A-D).

[646] Exhibit A, Test Claim, pages 185, 220 (prior permit, Provision C.12. and Fact Sheet); see also "The C.12 provisions are consistent with the regulatory approach and implementation plan of the San Francisco Bay PCBs TMDL adopted by the Water Board." (Exhibit A, Test Claim, page 299 (prior permit, Fact Sheet).)

[647] Exhibit A, Test Claim, page 91 (prior permit, Provision B.2.).

- Permittees shall, within their respective jurisdictions, effectively prohibit the discharge of non-stormwater (materials other than stormwater) into, storm drain systems and watercourses.[648]
- It shall be prohibited to discharge rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas.[649]
- The discharge shall not cause conditions of nuisance or adversely affect the beneficial uses of the waters, including from "[s]ubstances present in concentrations or quantities that would cause deleterious effects on aquatic biota, wildlife, waterfowl, or that render of these unfit for human consumption."[650]

The prior permit, in Provision C.1., then required the permittees to "comply with Discharge Prohibitions A.1 and A.2 and Receiving Water Limitations B.1 and B.2 through the timely implementation of control measures *and* other actions specified in Provisions C.2 through C.15" of the prior permit.[651] The Fact Sheet for the prior permit explains the "State Water Resources Control Board ("State Water Board") Order WQ 1999-05, is a precedential order requiring that municipal stormwater permits achieve water quality standards and water quality standard based discharge prohibitions through the implementation of control measures, by which Permittees' compliance with the permit can be determined" and that the "Water Board Order specifically requires that Provision C.1 include language that Permittees shall comply with water quality standards based discharge prohibitions and receiving water limitations through timely implementation of control measures and other actions to reduce pollutants in the discharges."[652] Thus, pursuant to the plain language of Provision C.1., the permittees were required by the prior permit to implement control measures of their choosing *and* the specific control actions specified in Provision C.12. to meet the water quality standards for PCBs.

The prior permit also imposed monitoring requirements to ensure compliance with water quality standards, including pollutants of concern monitoring in Provision C.8.e. (including monitoring for PCBs, a category 1 pollutant), to quantify annual loads or concentrations of pollutants of concern from tributaries to the Bay; quantify the decadal-scale loading or concentration trends of pollutants of concern from small tributaries to the Bay; and quantify the projected impacts of management actions (including control measures) on tributaries and identifying where these management actions should be

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[648] Exhibit A, Test Claim, page 91 (prior permit, Provision A.1.).

[649] Exhibit A, Test Claim, page 91 (prior permit, Provision A.2.).

[650] Exhibit A, Test Claim, page 91 (prior permit, Provision B.1.).

[651] Exhibit A, Test Claim, page 92 (prior permit, Provision C.1.), emphasis added.

[652] Exhibit A, Test Claim, page 234 (prior permit, Fact Sheet).

implemented to have the greatest beneficial impact.[653] Provision C.12.g. of the prior permit required the permittees to develop and implement a monitoring program to quantify PCBs loads and loads reduced through source control, treatment, and other management measures implemented with the pilot projects, and directs the reader to "see C.11.g for details," which addresses the same requirement under the prior permit for mercury.[654] Provision C.11.g. of the prior permit required compliance by either: 1) quantifying through estimates the annual loads reduced through pollution prevention, source control, and treatment control efforts or other relevant efforts; 2) quantifying the load as a rolling five-year annual average using data on flow and water column mercury concentrations; or 3) quantitatively demonstrating that the concentration of suspended sediment that best represents sediment discharged with urban runoff is below the target. Permittees were required to report their chosen methods and a full description of the measurement and estimation methodology and rationale for the approach in their 2010 Annual Report; and report the results of their chosen monitoring/measurement approach concerning the loads assessment and estimate of loads reduced in the 2014 Integrated Monitoring Report.[655] Since the prior permit treated Provisions C.11.g. and C.12.g. for mercury and PCBs consistently, the specific requirements for reporting under C.11.g. also apply to Provision C.12.g. of the prior permit. These requirements are consistent with existing federal law, which requires the claimants to monitor compliance with the effluent limitations identified in an NPDES permit, implement best management practices to control the pollutants, and report monitoring results at least once per year, or within 24 hours for any noncompliance which may endanger health or the environment.[656]

Thus, the claimants had an existing duty to comply with the water quality standards for PCBs under the prior permit by identifying watersheds and implementing control measures of their choosing to reduce the discharge of PCBs in accordance with the PCBs TMDL to meet water quality standards. Though Provision C.12.a.ii.4. of the test claim permit sets a specific requirement that these control measures attain aggregate, region-wide PCBs load reductions totaling 0.5 kg/yr by June 30, 2018 and 3 kg/year by

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[653] Exhibit A, Test Claim, pages 163-166 (prior permit, Provision C.8.e.).

[654] Exhibit A, Test Claim, page 190 (prior permit, Provision C.12.g.).

[655] Exhibit A, Test Claim, pages 182-183 (prior permit, Provision C.11.g.iii.).

[656] United States Code, title 33, section 1342(p)(3)(B)(iii) requires that permits for discharges from municipal storm sewers "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as . . . the State determines appropriate for the control of such pollutants." Emphasis added. See also, Code of Federal Regulations, title 40, sections 122.41 (conditions applicable to all permits, including monitoring and reporting requirements); section 122.44(i) (monitoring requirements to ensure compliance with permit limitations); section 122.48 (requirements for recording and reporting monitoring results); and Part 127 (electronic reporting).

June 30, 2020, these interim deadlines are consistent with the resolution adopting the PCBs TMDL, as stated in the opening paragraph of Provision C.12., which set an aggregate, region-wide wasteload allocation for permittees of 1.6 kg/year to be achieved by 2030.[657]

Moreover, the requirements to select and implement control measures to reduce the discharge of PCBs to protected waters in selected watersheds in accordance with the TMDL is not unique to government and does not provide a governmental service to the public and, therefore, does not impose a new program or higher level of service.[658] The TMDL for PCBs also imposed wasteload allocations on private industrial dischargers, including Chevron, Conoco, and C&H Sugar, requiring these dischargers to reduce their discharges to meet water quality standards for PCBs by implementing "best management practices to maintain optimum treatment performance for solids removal and the identification and management of controllable sources.[659] Thus, compliance with the PCBs TMDL by implementing control measures is not uniquely imposed on government and does not provide a *governmental* service to the public, but applies equally to public and private entities that discharge to the Bay and are assigned a wasteload allocation. In this respect, the TMDL requirements are no different from the alleged mandated activities in *County of Los Angeles v. Department of Industrial Relations*.[660] In that case, the County sought reimbursement for complying with earthquake and fire safety regulations applicable to elevators in public buildings.[661] The "County acknowledges that the elevator safety regulations apply to all elevators, not just those which are publicly owned."[662] The court concluded that therefore the regulations "do not impose a 'unique requirement' on local government, [and] they do not meet the second definition of 'program' established by [County of Los Angeles I]."[663] Similarly, in *City of Richmond*, state law exempted public safety employees from the requirement to pay death benefits to a deceased employee's survivors under workers compensation

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[657] Exhibit A, Test Claim, page 492 (test claim permit, Provision C.12.).

[658] *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56; *Carmel Valley Fire Protection Dist. v. State of California* (1987) 190 Cal.App.3d 521, 537; *Department of Finance v. Commission on State Mandates* (2021) 59 Cal.App.5th 546, 557.

[659] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, pages 9, 11.

[660] *County of Los Angeles v. Department of Industrial Relations* (1989) 214 Cal.App.3d 1538, 1545.

[661] *County of Los Angeles v. Department of Industrial Relations* (1989) 214 Cal.App.3d 1538, 1545.

[662] *County of Los Angeles v. Department of Industrial Relations* (1989) 214 Cal.App.3d 1538, 1545.

[663] *County of Los Angeles v. Department of Industrial Relations* (1989) 214 Cal.App.3d 1538, 1545.

statutes.[664] After the state repealed the exemption for public safety employees, the city sought reimbursement for the payment of workers compensation death benefits, which had to be made in addition to a PERS death benefit.[665] The court denied reimbursement, finding that the payment of death benefits under the workers compensation statutes was not unique to government. The court agreed with the Commission; "[t]hat [the test claim statute] affects only local government does not compel the conclusion that it imposes a unique requirement on local government."[666]

Therefore, the requirements in Provisions C.12.a.i., C.12.a.ii.1., C.12.a.ii.2., and C.12.a.ii.4., are not new and do not mandate a new program or higher level of service.

Provision C.12.a.ii.3. requires the permittees to submit a schedule of control measure implementation during the permit term.[667] This requirement is not new. Federal law requires a proposed management program, which shall include a description of the structural and source control measure to control pollutants that are to be implemented during the life of the permit, an estimate of the expected resulting pollutant loads reduced, and a proposed schedule for implementing such controls.[668] Accordingly, it is not a new requirement to provide a schedule for control measures to be implemented during the permit term. Thus, Provision C.12.a.ii.3. does not mandate a new program or higher level of service.

In addition, some of the reporting requirements in Provision C.12.a.iii. are not new and do not mandate a new program or higher level of service. Provision C.12.a.iii. requires the permittees to include the following information in their 2016 Annual Report:

- A list of watersheds and management areas where control measures are currently being implemented or will be implemented during the term of the permit.
- A list of specific control measures currently being implemented and those that will be implemented, along with an implementation schedule.
- The number, type, and locations or frequency of control measures.
- A cumulative listing of all potentially PCB-contaminated sites permittees have discovered and referred to the Water Board to date, with a brief summary description of each site and where to obtain further information.
- The description, scope, and start date, of PCBs control measures.

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[664] *City of Richmond v. Commission on State Mandates* (1998) 64 Cal.App.4th 1190, 1193-1194.

[665] *City of Richmond v. Commission on State Mandates* (1998) 64 Cal.App.4th 1190, 1196.

[666] *City of Richmond v. Commission on State Mandates* (1998) 64 Cal.App.4th 1190, 1197.

[667] Exhibit A, Test Claim, page 492 (test claim permit, Provision C.12.a.ii.3.).

[668] Code of Federal Regulations title 40 section 122.26 (d)(2)(iv).

- For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural controls or other relevant implementation milestones for structural controls and non-structural BMPs) and a schedule for milestone achievement.
- Clear statements of the roles and responsibilities of each participating permittee for implementation of pollution prevention or control measures.[669]

Provision C.12.a.iii.3. then requires, beginning with the 2017 Annual Report and continuing in all Annual Reports, the permittees to update the above information as necessary to account for new control measures implemented but not described in the 2016 Annual Report.[670]

Under federal law, in order to obtain an NPDES permit, a permittee is required to identify a proposed management program that includes measures to control pollutants during the life of the permit, an estimate of the expected pollutant loads reduced as a result of those measures, and a proposed schedule for implementing such controls.[671] Federal law then requires that an annual report be filed by the permittees by the anniversary date of the issuance of the permit and include the following information:

- The status of implementing the components of the stormwater management program that are established as permit conditions.
- Proposed changes to the stormwater management programs that are established as permit conditions. Such proposed changes shall be consistent with Code of Federal Regulations, title 40, 122.26(d)(2)(iii) [which requires a permittee to provide information, as specified, characterizing the quality and quantity of discharges covered in the permit application].
- Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit.
- A summary of data, including monitoring data, that is accumulated throughout the reporting year.
- Annual expenditures and budget for the year following each annual report.
- A summary describing the number and nature of enforcement actions, inspections, and public education programs.
- Identification of water quality improvements or degradation.[672]

In addition, and as stated above, the permittees had to report their measurement and estimation methodology for the reduction of PCBs and the rationale for their approach in

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[669] Exhibit A, Test Claim, pages 493-494 (test claim permit, Provision C.12.a.iii.2.).

[670] Exhibit A, Test Claim, page 494 (test claim permit, Provision C.12.a.iii.3.).

[671] Code of Federal Regulations title 40 section 122.26 (d)(2)(iv).

[672] Code of Federal Regulations, title 40, section 122.42(c).

the 2010 Annual Report; and report the results of their chosen monitoring/measurement approach concerning the loads assessment and estimate of loads reduced in the 2014 Integrated Monitoring Report. Thus, reporting the following information required by Provision C.12.a.ii.2. of the test claim permit is not new:

- A list of watersheds and management areas where control measures are currently being implemented or will be implemented during the term of the permit.
- A list of specific control measures currently being implemented and those that will be implemented, along with an implementation schedule.
- The number, type, and locations or frequency of control measures.
- The description, scope, and start date, of PCBs control measures.

Moreover, the requirement to update the above information beginning with the 2017 Annual Report to account for new control measures implemented but not described in the 2016 Annual Report, as required by Provision C.12.a.iii.3., is not new but is required by the existing federal requirement to annually report "revisions, if necessary, to the assessment of controls."[673]

However, prior law did not require the permittees to report the following new information in the 2016 Annual Report, in accordance with Provision C.12.a.iii.2.:

- A cumulative listing of all potentially PCB-contaminated sites permittees have discovered and referred to the Water Board to date, with a brief summary description of each site and where to obtain further information.
- For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural controls or other relevant implementation milestones for structural controls and non-structural BMPs) and a schedule for milestone achievement.
- Clear statements of the roles and responsibilities of each participating permittee for implementation of pollution prevention or control measures.[674]

In addition, while reporting where control measures are being implemented or will be implemented during the permit term is not new and required by federal law, Provision C.12.a.iii.1. requires permittees to report on their progress towards developing the list of where control measures will be implemented and the monitoring data and other information used to identify them by April 1, 2016. This answers a separate question from the information to be included in the 2016 Annual Report, namely verifying that the permittee is working on preparing the list in compliance with the permit terms and is using data that will likely result in a satisfactorily completed list. This report also has a deadline of April 1, 2016, separate and in addition to the annual reports already required, further demonstrating it is a new requirement.

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[673] Code of Federal Regulations, title 40, section 122.42(c).

[674] Exhibit A, Test Claim, pages 493-494 (test claim permit, Provision C.12.a.iii.2.).

Therefore, the following are new requirements imposed by Provisions C.12.a.iii.1. and C.12.a.iii.2.:

- By April 1, 2016, report on progress towards developing a list of the watersheds and portions of watersheds (management areas) where PCBs control measures are currently being implemented, and those in which control measures will be implemented during the permit term, as well as the monitoring data and other information used to select these watersheds and management areas.[675]
- In the 2016 Annual Report, include the following information:
    - A cumulative listing of all potentially PCB-contaminated sites permittees have discovered and referred to the Water Board to date, with a brief summary description of each site and where to obtain further information.
    - For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural controls or other relevant implementation milestones for structural controls and non-structural BMPs) and a schedule for milestone achievement.
    - Clear statements of the roles and responsibilities of each participating permittee for implementation of pollution prevention or control measures for PCBs.[676]

ii. The required activities for Provision C.12.d., which require an implementation plan and schedule of future actions, and a reasonable assurance analysis for attaining the PCBs TMDL wasteload allocation by 2030, are new requirements.

Provision C.12.d. says that "Permittees shall prepare a plan and schedule for PCBs control measure implementation and reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030," and submit the plan and schedule in the 2020 Annual Report.[677] To implement this, the plain language in section C.12.d. requires the following:

- Prepare a PCBs control measures implementation plan, which must identify all technically and economically feasible PCBs control measures to be implemented (including green infrastructure projects).[678]

[675] Exhibit A, Test Claim, page 492 (test claim permit, Provisions C.12.a.ii.1. and C.12.a.iii.1.).

[676] Exhibit A, Test Claim, pages 493-494 (test claim permit, Provision C.12.a.iii.2.).

[677] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.).

[678] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.1.).

- Include a schedule for PCBs control measure implementation according to which these technically and economically feasible PCBs control measures will be fully implemented by 2030.[679]
- Provide an evaluation and quantification of the PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.[680]
- Prepare a reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030.[681]
- Submit the plan and schedule required by Provision C.12.d. in the 2020 Annual Report.[682]

The Fact Sheet explains that achievement of the allocations for stormwater runoff in 20 years pursuant to the PCBs TMDL will be challenging and the long-term plan and schedule required by Provision C.12.d. will help lay the foundation for an implementation timeframe that is longer than stated in the TMDL:

> The PCBs TMDL anticipated the challenge of achieving the urban runoff load reductions required to meet the TMDL allocations within the twenty-year implementation time frame. The TMDL implementation plan states that
>
> *"... achievement of the allocations for stormwater runoff, which is projected to take 20 years, will be challenging. Consequently, the Water Board will consider modifying the schedule for achievement of the load allocations for stormwater runoff provided that dischargers have complied with all applicable permit requirements and accomplished all of the following:*
>
> *• A diligent effort has been made to quantify PCBs loads and the sources of PCBs in the discharge;*
>
> *• Documentation has been prepared that demonstrates that all technically and economically feasible and cost-effective control measures recognized by the Water Board have been fully implemented, and evaluates and quantifies the PCBs load reduction of such measures;*
>
> *• A demonstration has been made that achievement of the allocation will require more than the remaining 10 years originally envisioned; and*

[679] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.2.).

[680] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.3.).

[681] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.i.).

[682] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.iii.).

> • *A plan has been prepared that includes a schedule for evaluating the effectiveness and feasibility of additional control measures and implementing additional controls as appropriate.*"
>
> Provision C.12.d provides the opportunity for Permittees to describe the full suite of actions that will be required to achieve the TMDL along with realistic timelines for this achievement. The load reductions for PCBs are difficult and time-consuming to achieve because of the distribution of sources in the landscape; challenges associated with finding and reducing these existing sources; and unpredictability related to demolition of PCBs containing structures. Further, some part of the expected PCB load reduction will come from long-term implementation of control strategies (like green infrastructure) that extend beyond the current implementation timeframe of the TMDL. The long-term plan and schedule required by this provision will help lay the foundation for an implementation timeframe that is longer than that stated in the TMDL.[683]

The Commission finds that the requirements imposed by Provision C.12.d. are new. Federal law requires a proposed management program for the permit term, which describes structural and source control measures to be implemented and a schedule for implementation, and further requires the assessment of the loads reduced and a fiscal analysis of the necessary capital and operational and maintenance expenditures and the source of funds to carry out the program.[684] However these federal requirements are specifically looking at the controls to be implemented during the permit term, while the requirements in Provision C.12.d. are looking all the way out to 2030.

Although permittees were required by the prior permit to attain the wasteload allocation set out in the PCBs TMDL,[685] there was no requirement for the permittees to create a control measures implementation plan and a reasonable assurance analysis laying out which control measures they intend to implement in order to achieve the wasteload allocations of the TMDL by 2030 and a schedule of when these control measures will be fully implemented in the future to achieve compliance by 2030. Nor was there a prior requirement to provide evaluations and quantifications of the load reductions these control measures will achieve in the future to 2030, or to evaluate their costs, efficiency and significant environmental impacts. Thus, the requirements in Provision C.12.d. are new.

[683] Exhibit A, Test Claim, page 653 (test claim permit, Fact Sheet).

[684] Code of Federal Regulations, title 40, section122.26 (d)(2)(iv)-(vi).

[685] Exhibit A, Test Claim, page 185 (prior permit, Provision C.12.).

iii. The activities required for Provision C.12.e., which require collecting and analyzing samples of caulks and sealants used in storm drains and roadway infrastructure, are new.

Provision C.12.e. requires permittees to evaluate the presence of PCBs in caulks and sealants used in storm drains or roadway infrastructure in public rights-of-way.[686] This section requires permittees to do the following:

- Collect at least 20 composite samples from throughout the permit-area of the caulks and sealants used in storm drains or roadway infrastructure in public rights-of-way.[687]
- Analyze the samples taken for PCBs in such a way that is able to detect a minimum PCB concentration of 200 parts per billion.[688]
- Report on the results of this investigation, including all data gathered, no later than the 2018 Annual Report.[689]

Under section C.12.b. of the prior permit, the permittees were required to develop a sampling and analysis plan to evaluate PCBs at construction sites that involve demolition activities, including research on when, where, and which materials potentially contain PCBs. The permittees were required to implement the plan at a minimum of ten sites throughout the combined permittees' jurisdictional areas, and then develop and select BMPs to pilot test at five sites to reduce or prevent the discharge of PCBs during demolition and remodeling, and submit various reports including their results in the 2014 Integrated Monitoring Report.[690] The Fact Sheet to the prior permit indicates that Provision C.12.b. addressed PCBs that were used in a variety of building materials "like caulk and adhesives" and, thus, the "pilot tests and reporting results will help determine if control measures for PCBs from these sources should be implemented in a more widespread fashion in the next permit term" as follows:

> PCBs are used in a variety of building materials like caulks and adhesives. PCBs contained in such materials can be liberated and transported in runoff during and after demolition and renovation activities. At this point, it is not known how extensive this type of PCB contamination is in the region. Therefore, the expectation for this permit term is that Permittees conduct pilot studies (Provision C.12.b) that includes evaluation of the presence of PCBs in such materials, sampling and analysis, and BMP development to prevent PCBs in these materials from being released into the environment during demolition and renovation. Conducting these pilot

[686] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.).

[687] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.ii.).

[688] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.ii.).

[689] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.iii.).

[690] Exhibit A, Test Claim, pages 185-186 (prior permit, Provision C.12.b.).

tests and reporting results will help determine if control measures for PCBs from these sources should be implemented in a more widespread fashion in the next permit term.[691]

Provision C.12.c. of the prior permit also required the permittees to identify five drainage areas that contain high levels of PCBs and investigate and abate on-land locations with elevated PCB concentrations, including public rights-of-way and stormwater conveyances, with accumulated sediments. To comply, the permittees had to identify potential source areas, validate the existence of elevated PCB concentrations through "surface soil/sediment sampling and analysis," and determine whether runoff from such locations is likely to convey soils and sediments with PCBs to municipal stormwater conveyances and conduct abatement program in portions of drainages under their jurisdiction.[692]

Thus, the permittees were aware of the PCB issues with caulk and sealants under the prior permit and were required to investigate and abate five drainage areas with elevated PCB concentrations in sediment, including in public rights-of-way and storm drains.

The requirements in Provision C.12.e. of the test claim permit are new, however. There was no prior requirement to sample caulks and sealants used *in storm drains or roadway infrastructure in public rights-of-way*. The Fact Sheet notes this requirement was added because the Washington Department of Ecology discovered that caulks and sealants containing PCBs were used inside the City of Tacoma's storm drains during a repair back in the 1970's.[693] "There is reason to believe that such use was not isolated to one location," and given that limited sampling of Bay Area structures built between 1950 and 1980 found PCBs contaminations at levels similar to those built in other parts of North America and Europe, it is plausible that a similar problem might be found in Permittee's storm drains.[694]

Accordingly, the requirements in Provision C.12.e. are new.

iv. The new requirements imposed in Provisions C.12.a.iii.1., C.12.a.iii.2., C.12.d., and C.12.e. to comply with the PCBs TMDL constitute state-mandated new programs or higher levels of service within the meaning of article XIII B, section 6 of the California Constitution.

As discussed above, the following activities required by Provisions C.12.a.iii.1.-2., C.12.d., and C.12.e., with respect to the PCBs TMDL, are new:

1. PCBs Reporting (Provisions C.12.a.iii.1. and C.12.a.iii.2.):

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[691] Exhibit A, Test Claim, pages 300-301 (prior permit, Fact Sheet).

[692] Exhibit A, Test Claim, pages 186-187 (prior permit, Provision C.12.c.).

[693] Exhibit A. Test Claim, page 653 (test claim permit, Fact Sheet, Provision C.12.e.).

[694] Exhibit A, Test Claim, pages 645, 653, (test claim permit, Fact Sheet, Finding C.12.-10, Provision C.12.e.).

- By April 1, 2016, report on progress towards developing a list of the watersheds and portions of watersheds (management areas) where PCBs control measures are currently being implemented, and those in which control measures will be implemented during the permit term, as well as the monitoring data and other information used to select these watersheds and management areas.[695]
- In the 2016 Annual Report, include the following information:
    - A cumulative listing of all potentially PCB-contaminated sites permittees have discovered and referred to the Water Board to date, with a brief summary description of each site and where to obtain further information.
    - For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural controls or other relevant implementation milestones for structural controls and non-structural BMPs) and a schedule for milestone achievement.
    - Clear statements of the roles and responsibilities of each participating permittee for implementation of pollution prevention or control measures for PCBs.[696]

2. Prepare PCBs control measures implementation plan, schedule, and reasonable assurance analysis to achieve the PCBs TMDL wasteload allocations by 2030 (Provision C.12.d.):
    - Prepare a PCBs control measures implementation plan, which must identify all technically and economically feasible PCBs control measures to be implemented (including green infrastructure projects).[697]
    - Include a schedule for PCBs control measure implementation according to which these technically and economically feasible PCBs control measures will be fully implemented by 2030.[698]
    - Provide an evaluation and quantification of the PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.[699]

[695] Exhibit A, Test Claim, page 492 (test claim permit, Provisions C.12.a.ii.1. and C.12.a.iii.1.).

[696] Exhibit A, Test Claim, pages 493-494 (test claim permit, Provision C.12.a.iii.2.).

[697] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.1.).

[698] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.2.).

[699] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.3.).

- Prepare a reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030.[700]
- Submit the plan and schedule required by Provision C.12.d. in the 2020 Annual Report.[701]

3. Evaluate the presence of PCBs in caulks/sealants in storm drain or roadway infrastructure in public rights-of-way (Provision C.12.e.):
   - Collect at least 20 samples from throughout the permit-area of the caulks and sealants used in storm drains or roadway infrastructure in public rights-of-way.[702]
   - Analyze the samples taken for PCBs in such a way that is able to detect a minimum PCB concentration of 200 parts per billion.[703]
   - Report on the results of this investigation, including all data gathered, no later than the 2018 Annual Report.[704]

The Commission finds these new requirements are mandated by the state.

The California Supreme Court, in *Department of Finance v. Commission on State Mandates*, identified the following test to determine whether certain conditions imposed by an NPDES stormwater permit issued by the Los Angeles Regional Water Board were mandated by the state or the federal government:

> If federal law compels the state to impose, or itself imposes, a requirement, that requirement is a federal mandate. On the other hand, if federal law gives the state discretion whether to impose a particular implementing requirement, and the state exercises its discretion to impose the requirement by virtue of a "true choice," the requirement is not federally mandated.[705]

As indicated in the court's decision, this is the long-standing test identified in prior case law to determine if requirements imposed by state statute or executive order are mandated by the state or the federal government when the state is implementing federal law.[706]

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[700] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.i.).

[701] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.iii.).

[702] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.ii.).

[703] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.ii.).

[704] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.iii.).

[705] *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 765.

[706] See *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 764-765, where the court explains the following prior decisions: *City of Sacramento v.*

The courts have also explained "except where a regional board finds the conditions are the only means by which the [federal] 'maximum extent practicable' standard can be met, the State exercises a true choice by determining what controls are necessary to meet the standard."[707] "That the . . . Regional Board found the permit requirements were 'necessary' to meet the standard establishes only that the . . . Regional Board exercised its discretion."[708]

Here, the PCBs TMDL is required by federal law since the waterbodies were 303(d) listed as impaired because of PCBs.[709] Regional Boards are then required by federal law to include effluent limits "consistent with the assumptions and requirements of any available wasteload allocation for the discharge" in NPDES permits.[710] The permits can also include such other provisions as the permitting agency determines to be appropriate for the control of pollutants.[711]

The Regional Board determined that these new requirements were appropriate for the control of PCBs and, as explained in the sections above, these activities are not required by federal law. Thus, the Regional Board exercised a true choice when imposing these requirements, making them mandated by the state.

Moreover, the new state-mandated requirements to implement the PCBs TMDL impose a new program or higher level of service since carry they out the governmental function of providing services to the public, or to implement a state policy, impose unique requirements on local governments and do not apply generally to all residents and entities in the state.[712] Although the TMDL imposes requirements to reduce the discharge of PCB on both public and private dischargers, the new requirements

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State of California (1990) 50 Cal.3d 51, which addressed local governments' reimbursement claims for the costs of extending unemployment insurance protection to their employees pursuant to a federal statute that induced the state's compliance with a carrot and stick; *County of Los Angeles v. Commission on State Mandates* (1995) 32 Cal.App.4th 805, addressing a state statute that required local governments to provide indigent criminal defendants with experts for the preparation of their defense in accordance with federal law; and *Hayes v. Commission on State Mandates* (1992) 11 Cal.App.4th 1564, which addressed state special education statutes implementing the federal Education of the Handicapped Act.

[707] *Department of Finance v. Commission on State Mandates* (2017) 18 Cal.App.5th 661, 682 citing to *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 768, emphasis added.

[708] *Department of Finance v. Commission on State Mandates* (2017) 18 Cal.App.5th 661, 682.

[709] Exhibit X (5), Order R2-2008-0012, PCBs TMDL, page 1 (Finding 3).

[710] Code of Federal Regulations, title 40, section 122.44(d)(1)(vii).

[711] United States Code, title 33, section 1342(p)(3)(B)(iii).

[712] *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56.

imposed by Provisions C.12.a.iii.1.-2., C.12.d., and C.12.e. to submit specific reports, prepare an implementation plan and schedule of future actions and a reasonable assurance analysis showing control measures will be fully implemented in the future to achieve the PCBs TMDL wasteload allocations by 2030, and to sample caulks and sealants in storm drains and roadway infrastructures, are uniquely imposed on the local agency permittees and do not apply generally to all dischargers.

Moreover, the new requirements carry out the governmental function of providing services to the public.[713] The waters in the San Francisco Bay were impaired for PCBs, which threaten the health of humans, as described above. The purpose of these new requirements is to reduce the discharge of PCBs in urban runoff to the receiving waters, to lay the foundation for an implementation timeframe so that urban runoff dischargers will be able to comply with the final wasteload allocations by 2030, and to identify potential sources of PCBs in storm drains and roadways controlled by local government so that these potential sources of PCB discharges can be controlled.[714]

Accordingly, the Commission finds that the new requirements imposed by Provisions C.12.a.iii.1.-2., C.12.d., and C.12.e. mandate a new program or higher level of service.

C. Pursuant to Government Code 17556(d), There Are No Costs Mandated by the State When the Claimants Have the Authority to Impose Fees Sufficient to Pay for the New State-Mandated Requirements.

As indicated above, the following activities constitute state-mandated new programs or higher levels of service:

1. Green Infrastructure Plan (Provision C.3.j.i.-iv.):
   a. Green Infrastructure Plan (Provision C.3.j.i.)
      - Prepare a framework or workplan describing specific tasks and timeframes for development for its Green Infrastructure Plan, to be approved by the Permittee's governing body, mayor, city manager, or county manager by June 30, 2017. This framework or workplan shall include a statement of purpose, tasks, and timeframe needed to complete all requirements in Provision C.3.j.i.2. (discussed below).[715]
      - Prepare a Green Infrastructure Plan, subject to Executive Officer approval, that contains all the following:
        - A mechanism (such as SFEI's Green PlanIT tool) to prioritize and map areas for potential and planned projects, both public and private, on a drainage-area specific basis, for implementation by 2020, by 2030, and by

[713] *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 56; *Department of Finance v. Commission on State Mandates* (2021) 59 Cal.App.5th 546, 629-630.

[714] Exhibit A, Test Claim, pages 647, 652-653, (test claim permit, Fact Sheet, Provisions C.12.a., C.12.d., and C.12.e.).

[715] Exhibit A, Test Claim, page 423 (test claim permit, Provision C.3.j.i.1.).

2040, that includes criteria for prioritization and outputs that can be incorporated into the Permittees' long-term planning and capital improvement processes.

- Outcomes from the above-described mechanism, including but not limited to, the prioritization criteria, maps, lists, and all other information, as appropriate. Individual project-specific reviews do not need to be submitted with the Plan, but shall be made available for review upon request.
- Targets for the amount of impervious surface from public and private projects within the Permittee's jurisdiction to be retrofitted by 2020, by 2030, and by 2040.
- A process for tracking and mapping completed projects, public and private, and making the information publicly available online (I.E., SFEI's Green PlanIT tool).
- General guidelines for overall streetscape and project design and construction so that projects have a unified complete design that implements the range of functions associated with the project.
- Standard specifications, and as appropriate, typical design details and related information necessary for the Permittee to implement Green Infrastructure Projects in its jurisdiction, which shall be sufficient to address the different street and project types within a Permittee's jurisdiction, as defined by land use and transportation characteristics.
- Requirements that projects be designed to meet the treatment and hydromodification sizing requirements outline in Provisions C.3.c. and C.3.d. For projects that are not subject to these requirements according to Provision C.3.b.ii. (non-regulated projects), Permittees may collectively propose a single approach for how to proceed when project constraints preclude fully meeting the sizing requirements, which can include options for addressing specific issues or scenarios.
- A summary of planning documents the permittee has updated or otherwise modified to incorporate Green Infrastructure requirements (General Plans, Specific Plans, Complete Street Plans, Active Transportation Plans, Storm Drain Master Plans, Pavement Work Plans, Urban Forestry Plans, Flood Control/Management Plans, and any other plans that may impact the future alignment, configuration or design of impervious surfaces within the Permittee's jurisdiction). These modifications are to be completed by no later than the end of the permit term.
- A workplan identifying how the Permittee will ensure that Green Infrastructure and low impact development are appropriately included in future plans.

- A workplan to complete prioritized projects identified as part of an Alternative Compliance Program or Early Implementation as outlined in Provision C.3.e. or C.3.j.ii.
- An evaluation of prioritized project funding options including, but not limited to: Alternative Compliance funds; grant monies, including transportation project grants from federal, State, and local agencies; existing Permittee resources; new tax or other levies; and other sources of funds.[716]

- Adopt policies, ordinances, and/or other appropriate legal mechanisms to ensure implementation of the Green Infrastructure Plan in accordance with the requirements of this provision.[717]
- Conduct outreach and education in accordance with the following:
  - Conduct public outreach on the requirements of this provision, including outreach coordinated with adoption or revision of standard specifications and planning documents, and with the initiation and planning of infrastructure projects. Such outreach shall include general outreach and targeted outreach to and training for professionals involved in infrastructure planning and design.
  - Train appropriate staff, including planning, engineering, public works maintenance, finance, fire/life safety, and management staff on the requirements of this provision and methods of implementation.
  - Educate appropriate Permittee elected officials (e.g., mayors, city council members, county supervisors, district board members) on the requirements of this provision and methods of implementation.[718]
- Each permittee shall report on its planning progress as follows:
  - Submit documentation in the 2017 Annual Report that its framework or workplan for development of its Green Infrastructure Plan was approved by its governing body, mayor, city manager, or county manager by June 30, 2017.
  - Submit its completed Green Infrastructure Plan with the 2019 Annual Report.
  - Submit documentation of its legal mechanisms to ensure implementation of its Green Infrastructure Plan with the 2019 Annual Report.

[716] Exhibit A, Test Claim, pages 423-425 (test claim permit, Provision C.3.j.i.2.).

[717] Exhibit A, Test Claim, page 425 (test claim permit, Provision C.3.j.i.3.).

[718] Exhibit A, Test Claim, pages 425-426 (test claim permit, Provision C.3.j.i.4.).

- Submit a summary of its outreach and education efforts in each Annual Report.[719]

b. Early Implementation – List of Green Infrastructure Projects (Provision C.3.j.ii.):

- *Except for a permittee's own public project (which does not mandate a new program or higher level of service)*, prepare and maintain a list of Green Infrastructure Projects, public and private, that are already planned for implementation during the permit term and infrastructure projects planned for implementation during the permit term that have potential for Green Infrastructure measures.[720]
- *Except for a permittee's own public project (which does not mandate a new program or higher level of service)*, submit the list with each Annual Report and a summary of planning or implementation status for each public Green Infrastructure Project and each private Green Infrastructure Project that is not also a Regulated Project as defined in Provision C.3.b.ii. Include a summary of how each public infrastructure project with Green Infrastructure potential will include Green Infrastructure measures to the maximum extent practicable during the permit term. For any public infrastructure project where implementation of Green Infrastructure measures is not practicable, submit a brief description of the project and the reasons Green Infrastructure measures were impracticable to implement.[721]

c. Participation in Processes to Promote Green Infrastructure (Provision C.3.j.iii.):

- Either individually or collectively, track processes, assemble and submit information, and provide informational materials and presentations as needed to assist relevant regional, State, and federal agencies to plan, design, and fund incorporation of Green Infrastructure measures into local infrastructure projects, including transportation projects. Issues to be addressed include coordinating the timing of funding from different sources, changes to standard designs and design criteria, ranking and prioritizing projects for funding, and implementation of cooperative in-lieu programs.[722]
- In each Annual Report, report on the goals and outcomes during the reporting year of work undertaken to participate in processes to promote Green Infrastructure.[723]

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[719] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.i.5.).

[720] Exhibit A, Test Claim, page 426 (test claim permit, Provision C.3.j.ii.1.).

[721] Exhibit A, Test Claim, page 426 (test claim permit, section C.3.j.ii.2.).

[722] Exhibit A, Test Claim, page 426 (test claim permit, section C.3.j.iii.1.).

[723] Exhibit A, Test Claim, page 427 (test claim permit, section C.3.j.iii.2.).

- In the 2019 Annual Report, submit a plan and schedule for new and ongoing efforts to participate in processes to promote Green Infrastructure.[724]

d. Tracking and Reporting Progress (Provision C.3.j.iv.):

- Either individually or collectively, develop and implement regionally-consistent methods to track and report implementation of Green Infrastructure measures including treated area and connected and disconnected impervious area on both public and private parcels within their jurisdictions. The methods shall also address tracking needed to provide reasonable assurance that wasteload allocations for TMDLs, including the San Francisco Bay PCBs and mercury TMDLs, and reductions for trash, are being met.[725]
- In each Annual Report, report progress on development and implementation of the tracking methods.[726]
- In the 2019 Annual Report, submit the tracking methods and report implementation of Green Infrastructure measures including treated area, and connected and disconnected impervious area on both public and private parcels within their jurisdictions.[727]

2. Reasonable Assurance Analysis (Provisions C.11.c.ii.2., C.11.c.iii.1.-3., C.12.c.ii.2., and C.12.c.iii.1.-3.):

- Prepare a reasonable assurance analysis of future mercury and PCBs load reductions by doing the following:
  - Quantify the relationship between areal extent of Green Infrastructure implementation and mercury and PCBs load reductions, taking into consideration the scale of contamination of the treated area as well as the pollutant removal effectiveness of likely green infrastructure strategies.[728]
  - Estimate the amount and characteristics of land area that will be treated through Green Infrastructure by 2020, 2030, and 2040.[729]

[724] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.3.j.iii.3.).

[725] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.3.j.iv.1.).

[726] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.2.j.iv.2.).

[727] Exhibit A, Test Claim, page 427 (test claim permit, Provision C.2.j.iv.3.).

[728] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.a., C.12.c.ii.2.a.).

[729] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.b., C.12.c.ii.2.b.).

- Estimate the amount of mercury/PCBs load reductions that will result from Green Infrastructure implementation by 2020, 2030, and 2040.[730]
- Quantitatively demonstrate that mercury load reductions of at least 10 kg/yr and PCBs load reductions of at least 3 kg/yr will be realized by 2040 through implementation of Green Infrastructure Projects.[731]
- Ensure that the calculation methods, models, model inputs, and modeling assumptions used to fulfill provisions C.11.c.ii.2.a.-d. and C.12.c.ii.2.a.-d. above have been validated through a peer review process.[732]

- Submit in the 2018 Annual Report as part of the reporting required for Provisions C.11.b.iii.2. and C.12.b.iii.3., the quantitative relationship between Green Infrastructure implementation and mercury and PCBs load reductions. This submittal shall include all data used and a full description of the models and model inputs relied on to establish this relationship.[733]
- Submit in the 2020 Annual Report an estimate of the amount and characteristics of land area that will be treated through Green Infrastructure implementation by 2020, 2030, and 2040. This submittal shall include all data used and a full description of the models and model inputs relied on to generate this estimate.[734]
- Submit in the 2020 Annual Report a reasonable assurance analysis to demonstrate quantitatively that mercury load reductions of at least 10 kg/yr and PCBs load reductions of at least 3 kg/yr will be realized by 2040 through the implementation of Green Infrastructure Projects. This submittal shall include all data used and a full description of models and model inputs relied on to make the demonstration and documentation of peer review of the reasonable assurance analysis.[735]

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[730] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.c., C.12.c.ii.2.c.).

[731] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.ii.2.d., C.12.c.ii.2.d.).

[732] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.ii.2.e., C.12.c.ii.2.e.).

[733] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.1., C.12.c.iii.1.).

[734] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.2., C.12.c.iii.2.).

[735] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.3., C.12.c.iii.3.).

3. Progress Report on List of Watersheds and Management Areas Where Mercury Control Measures are or will be Implemented (Provision C.11.a.iii.1.):

    - By April 1, 2016, report on progress towards developing a list of the watersheds and portions of watersheds (management areas) where mercury control measures are currently being implemented, and those in which control measures will be implemented during the permit term, as well as the monitoring data and other information used to select these watersheds and management areas.[736]

4. PCBs Reporting (Provisions C.12.a.iii.1. and C.12.a.iii.2.):

    - By April 1, 2016, report on progress towards developing a list of the watersheds and portions of watersheds (management areas) where PCBs control measures are currently being implemented, and those in which control measures will be implemented during the permit term, as well as the monitoring data and other information used to select these watersheds and management areas.[737]
    - In the 2016 Annual Report, include the following information:
        - A cumulative listing of all potentially PCB-contaminated sites permittees have discovered and referred to the Water Board to date, with a brief summary description of each site and where to obtain further information.
        - For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural controls or other relevant implementation milestones for structural controls and non-structural BMPs) and a schedule for milestone achievement.
        - Clear statements of the roles and responsibilities of each participating permittee for implementation of pollution prevention or control measures for PCBs.[738]

5. Prepare PCBs control measures implementation plan, schedule, and reasonable assurance analysis to achieve the PCBs TMDL wasteload allocations by 2030 (Provision C.12.d.):

    - Prepare a PCBs control measures implementation plan, which must identify all technically and economically feasible PCBs control measures to be implemented (including green infrastructure projects).[739]

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[736] Exhibit A, Test Claim, page 486 (test claim permit, Provision C.11.a.iii.1.).

[737] Exhibit A, Test Claim, page 492 (test claim permit, Provisions C.12.a.ii.1. and C.12.a.iii.1.).

[738] Exhibit A, Test Claim, pages 493-494 (test claim permit, Provision C.12.a.iii.2.).

[739] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.1.).

- Include a schedule for PCBs control measure implementation according to which these technically and economically feasible PCBs control measures will be fully implemented by 2030.[740]
- Provide an evaluation and quantification of the PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.[741]
- Prepare a reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030.[742]
- Submit the plan and schedule required by Provision C.12.d. in the 2020 Annual Report.[743]

6. Evaluate the presence of PCBs in caulks/sealants in storm drain or roadway infrastructure in public rights-of-way (Provision C.12.e.):
    - Collect at least 20 samples from throughout the permit-area of the caulks and sealants used in storm drains or roadway infrastructure in public rights-of-way.[744]
    - Analyze the samples taken for PCBs in such a way that is able to detect a minimum PCB concentration of 200 parts per billion.[745]
    - Report on the results of this investigation, including all data gathered, no later than the 2018 Annual Report.[746]

The last issue in determining whether reimbursement is required under article XIII B, section 6 is whether these new mandated activities result in increased costs mandated by the state. Government Code section 17514 defines "costs mandated by the state" as any increased costs that a local agency or school district incurs as a result of any statute or executive order that mandates a new program or higher level of service. Government Code section 17564(a) further requires that no claim shall be made nor shall any payment be made unless the claim exceeds $1,000. Increased costs

[740] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.2.).

[741] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.3.).

[742] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.i.).

[743] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.iii.).

[744] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.ii.).

[745] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.ii.).

[746] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.iii.).

mandated by the state requires a showing of "increased actual expenditures of limited tax proceeds that are counted against the local government's spending limit."[747]

In addition, a finding of costs mandated by the state means that none of the exceptions in Government Code section 17556 apply to deny the claim. As relevant here, Government Code section 17556(d) states that the Commission shall not find costs mandated by the state when:

> The local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the mandated program or increased level of service. This subdivision applies regardless of whether the authority to levy charges, fees, or assessments was enacted or adopted prior to or after the date on which the statute or executive order was enacted or issued.

The claimant contends that the activities result in increased costs mandated by the state within the meaning of article XIII B, section 6 and Government Code section 17514. The identified costs the claimant alleges it spent in fiscal years 2014-2015, 2015-2016, and 2016-2017 implementing mandated activities in the test claim permit total $9,454,799.39, of which $3,718,706.52 came from projects it began during the prior permit term before this test claim permit's effective date.[748] It further asserts that future projects needed to complete all the requirements in the test claim permit are expected to cost $72,600,000 total, plus $145,000 per year for annual maintenance costs. The claimant made a statewide costs estimate for fiscal year 2016-2017 of costs totaling $18,135,921.[749]

The claimant acknowledged that it received some funding for installing full trash capture systems and green streets projects through grants from the EPA and the Proposition 84 State Water Grant Program, but insists that it is unlikely that it will be able to avail itself of any future grant opportunities because all other available grants are highly competitive and have steep fund matching requirements.[750] The claimant also acknowledged that it funds some of its activities through its Clean Water Fund, which is obtained through revenue on property tax assessments, and a solid waste franchise surcharge, as well as several other City revenue sources that are restricted to roadway projects, of which green street projects qualify.[751]

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[747] *County of Sonoma v. Commission on State Mandates* (2000) 84 Cal.App.4th 1264, 1283; *County of Los Angeles v. Commission on State Mandates* (2003) 110 Cal.App.4th 1176, 1185.

[748] Exhibit A, Test Claim 16-TC-03, filed June 30, 2017, page 47 (Declaration of Thomas Ruark, City Engineer, City of Union City).

[749] Exhibit A, Test Claim 16-TC-03, filed June 30, 2017, page 31 (Written Narrative).

[750] Exhibit A, Test Claim 16-TC-03, filed June 30, 2017, pages 23, 34 (Written Narrative).

[751] Exhibit A, Test Claim 16-TC-03, filed June 30, 2017, page 34 (Written Narrative).

The Regional Board asserts that these funding sources, as well as others used by other municipalities under the test claim permit, demonstrate that claimants can fund these programs without using their tax revenue. Examples of how other municipalities have done this include: increased stormwater fees; "excess litter fees" on identified types of high trash-generating businesses; encouraging property owners to participate in a Business Improvement District or Community Benefits District where the property owners vote to pay assessments for maintenance and beautification projects within a district; partnerships with Caltrans; vehicle registration fees; federal, state and local grants; Measure A and J grants; gas tax; and development impact fees.[752]

As explained below, the Commission finds that the new state-mandated activities result in costs mandated by the state for some of the activities based on the following findings:

1. There is substantial evidence in the record that permittees incurred costs exceeding $1,000 and used proceeds of taxes to comply with the test claim permit.
2. Pursuant to Government Code section 17556(d), permittees have regulatory fee authority sufficient as a matter of law to fund the new state-mandated activities related to developing and implementing the Green Infrastructure Plan (Provision C.3.j.i.-iv.), and thus, there are no costs mandated by the state for these activities.
3. The Permittees have constitutional and statutory authority to charge property-related fees for the reasonable assurance analysis of future mercury and PCBs load reductions (C.11.c.ii.2., C.11.c.iii.1.-3., C.12.c.ii.2., and C.12.c.iii.1.-3.); required mercury progress report on list of watersheds and management areas where control measures are or will be implemented (C.11.a.iii.); PCBs reporting (C.12.a.iii.1. and 2.); PCBs control measures implementation plan (C.12.d.); and PCBs caulk and sealant testing (C.12.e.). However, from January 1, 2016 (the beginning date of the potential period of reimbursement) to December 31, 2017, these fees are subject to the voter approval requirement in article XIII D, section 6(c), and therefore fee authority is not sufficient as a matter of law.[753] Under these limited circumstances, Government Code section 17556(d) does not apply, and there are costs mandated by the state.[754] Any fee revenues received must be identified as offsetting revenue. In addition, reimbursement for this mandate

[752] Exhibit C, Regional Board's Late Comments on the Test Claim, pages 10-12.

[753] See *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351, and *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 579-581.

[754] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 579-581; Government Code sections 57350 and 57351 (SB 231, eff. January 1, 2018, which overturned *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351; *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 195.

from any source, including but not limited to, service fees collected, federal funds, other state funds, and other funds that are not a claimant's local proceeds of taxes shall be identified and deducted from this claim.

On or after January 1, 2018, there are no costs mandated by the state to comply with these activities because the claimants have constitutional and statutory authority to charge property-related fees for these costs subject only to the voter protest provisions of article XIII D, which is sufficient as a matter of law to cover the costs of the mandated activities within the meaning of Government Code section 17556(d).[755]

Based on *Paradise Irrigation District* case and the Legislature's enactment of Government Code sections 57350 and 57351 (which overturned *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351), there are no costs mandated by the state on or after January 1, 2018, to comply with these activities, because claimants have constitutional and statutory authority to charge property-related fees for these costs subject only to the voter protest provisions of article XIII D, which is sufficient as a matter of law to cover the costs of the mandated activities within the meaning of Government Code section 17556(d).

1. There Is Substantial Evidence in the Record that Permittees Incurred Increased Costs and Used Proceeds of Taxes to Comply with the Test Claim Permit.

a. The reimbursement requirement in article XIII B, section 6 was included because of the tax and spend limitations in articles XIII A and XIII B and is triggered only when the state forces the expenditure of local proceeds of taxes; section 6 was not intended to reach beyond taxation or to protect nontax sources.

In 1978, the voters adopted Proposition 13, which added article XIII A to the California Constitution. Article XIII A reduced the authority of local government to impose property taxes by providing "the maximum amount of any ad valorem tax on real property shall not exceed one percent (1%) of the full cash value of such property," and the one percent (1%) tax was to be collected by counties and "apportioned according to law to the districts within the counties…"[756] In addition to limiting the property tax, section 4 also restricts a local government's ability to impose special taxes by requiring a two-thirds approval by the voters.[757]

Article XIII B was adopted by the voters as Proposition 4, less than 18 months after the addition of article XIII A to the state Constitution, and was billed as "the next logical step

[755] See *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, and Government Code sections 57350 and 57351 (which overturned *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal.App.4th 1351).

[756] California Constitution, article XIII A, section 1 (effective June 7, 1978).

[757] California Constitution, article XIII A, section 4 (effective June 7, 1978).

to Proposition 13."[758] While article XIII A is aimed at controlling ad valorem property taxes and the imposition of new special taxes, "the thrust of article XIII B is toward placing certain limitations on the growth of appropriations at both the state and local government level; in particular, article XIII B places limits on the authorization to expend the 'proceeds of taxes.'"[759] "Proceeds of taxes," in turn, includes "all tax revenues," as well as proceeds from "regulatory licenses, user charges, and user fees to the extent those proceeds exceed the costs reasonably borne by that entity in providing the regulation, product, or service," and proceeds from the investment of tax revenues.[760] And, with respect to local governments, the section reiterates that "proceeds of taxes" includes state subventions other than mandate reimbursement, and, with respect to the State's spending limit, excludes such state subventions.[761] Article XIII B does not restrict the growth in appropriations financed from nontax sources, such as "user fees based on reasonable costs."[762] And appropriations subject to limitation do not include "[a]ppropriations for debt service."[763]

Proposition 4 also added article XIII B, section 6, which was specifically "designed to protect the tax revenues of local governments from state mandates that would require the expenditure of such revenues."[764] The California Supreme Court, in *County of Fresno v. State of California*,[765] explained:

> Section 6 was included in article XIII B in recognition that article XIII A of the Constitution severely restricted the taxing powers of local governments. (See *County of Los Angeles I, supra*, 43 Cal.3d at p. 61.) The provision was intended to preclude the state from shifting financial responsibility for carrying out governmental functions onto local entities that were ill equipped to handle the task. (*Ibid*.; see *Lucia Mar Unified School Dist. v. Honig* (1988) 44 Cal.3d 830, 836, fn. 6.) Specifically, it was

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[758] *County of Placer v. Corin* (1980) 113 Cal.App.3d 443, 446.

[759] *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 762; *County of Placer v. Corin* (1980) 113 Cal.App.3d 443, 446.

[760] California Constitution, article XIII B, section 8(c) (added, Nov. 7, 1979; amended by Proposition 111, June 5, 1990), emphasis added.

[761] California Constitution, article XIII B, section 8(c) (added, Nov. 7, 1979; amended by Proposition 111, June 5, 1990), emphasis added.

[762] *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487; see also, *County of Placer v. Corin* (1980) 113 Cal.App.3d 443, 451 (finding that revenues from a local special assessment for the construction of public improvements are not "proceeds of taxes" subject to the appropriations limit).

[763] California Constitution, article XIII B, section 9 (added Nov. 7, 1979; amended by Proposition 111, June 5, 1990).

[764] *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487.

[765] *County of Fresno v. State of California* (1991) 53 Cal.3d 482.

> designed to protect the tax revenues of local governments from state mandates that would require expenditure of such revenues. Thus, although its language broadly declares that the "state shall provide a subvention of funds to reimburse ... local government for the costs [of a state-mandated new] program or higher level of service," read in its textual and historical context section 6 of article XIII B requires subvention only when the costs in question can be recovered *solely from tax revenues*.[766]

The California Supreme Court concluded articles XIII A and XIII B work "in tandem," for the purpose of precluding "the state from shifting financial responsibility for carrying out governmental functions to local agencies, which are 'ill equipped' to assume increased financial responsibilities *because of the taxing and spending limitations that articles XIII A and XIII B impose.*"[767] Accordingly, reimbursement under article XIII B, section 6 is only required when a mandated new program or higher level of service forces local government to incur "increased actual expenditures of limited tax proceeds that are counted against the local government's spending limit."[768]

b. <u>There is substantial evidence in the record that the claimants incurred increased costs exceeding $1,000 and used their local "proceeds of taxes" to comply with the new state-mandated activities.</u>

Consistent with these constitutional principles, reimbursement under article XIII B, section 6 is only required if the claimants show, with substantial evidence in the record,[769] they have incurred increased costs mandated by the state within the meaning of Government Code section 17514. When alleged mandated activities do not compel the increased expenditure of local "proceeds of taxes," reimbursement under section 6 is not required.[770] Government Code section 17514 defines "costs mandated by the state" as any increased costs a local agency or school district incurs as a result of any

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[766] *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487, emphasis in original.

[767] *Department of Finance v. Commission on State Mandates* (2016) 1 Cal.5th 749, 763, emphasis added.

[768] *County of Sonoma v. Commission on State Mandates* (2000) 84 Cal.App.4th 1264, 1283; *County of Los Angeles v. Commission on State Mandates* (2003) 110 Cal.App.4th 1176, 1185.

[769] Government Code section 17559.

[770] *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487 (Reimbursement is required only when "the costs in question can be recovered solely from tax revenues."). See also, *County of Sonoma v. Commission on State Mandates* (2000) 84 Cal.App.4th 1264, 1283; *County of Los Angeles v. Commission on State Mandates* (2003) 110 Cal.App.4th 1176, 1189; *Bell Community Redevelopment Agency v. Woosley* (1985) 169 Cal.App.3d 24, 32; *Redevelopment Agency v. Commission on State Mandates* (1997) 55 Cal.App.4th 976, 986-987; *City of El Monte v. Commission on State Mandates* (2000) 83 Cal.App.4th 266, 281.

statute or executive order that mandates a new program or higher level of service. Government Code section 17564(a) further requires that no claim shall be made nor shall any payment be made unless the claim exceeds $1,000.

The claimant filed declarations showing it has incurred shared costs and individual direct costs exceeding the $1,000 threshold to comply with the test claim permit.[771] For example, for its costs to implement the Green Infrastructure Plan and mercury and PCBs controls, the claimant filed a declaration by Union City's City Engineer, Thomas Ruark, stating that the city has budgeted $15,000 to retain a consultant that will assist in preparing "some of the tasks listed in the Framework for Green Infrastructure Plan Development."[772] Ruark also declared that the claimant paid $106,466 in fiscal years 2015-2016 and 2016-2017 to the Alameda County Clean Water Program (ACCWP) in support of compliance actions, of which he asserted $2,124 in fiscal year 2015-2016 went towards Green Infrastructure Plan development, and $5,377 in fiscal year 2016-2017 went towards Green Infrastructure Plan development and GIS development and support required by provisions C.3., C.11., and C.12.[773] These numbers were confirmed by James Scanlin of the ACCWP in his own declaration.[774] Ruark also identified some of the initial costs for staff time reviewing agendas and attending meetings for working groups that addressed requirements in C.3.j., C.11., and C.12., totaling $2,587.14.[775]

However, reimbursement is not required to the extent the claimants receive fee revenue and used that revenue to pay for the state-mandated activities, or used any other revenues, including but not limited to grant funding, assessment revenue, and federal funds, that are not the claimants' proceeds of taxes. When state-mandated activities do not compel the increased expenditure of local "proceeds of taxes," reimbursement under section 6 is not required.[776]

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[771] Exhibit A, Test Claim, page 47 (Declaration of Thomas Ruark, City Engineer, City of Union City).

[772] Exhibit A, Test Claim, page 44 (Declaration of Thomas Ruark, City Engineer, City of Union City).

[773] Exhibit A, Test Claim, page 46 (Declaration of Thomas Ruark, City Engineer, City of Union City).

[774] Exhibit A, Test Claim, pages 77-78 (Declaration of James Scanlin, Associate Environmental Compliance Specialist, Alameda County).

[775] Exhibit A, Test Claim, page 47 (Declaration of Thomas Ruark, City Engineer, City of Union City).

[776] *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487 (Reimbursement is required only when "the costs in question can be recovered solely from tax revenues."). See also, *County of Sonoma v. Commission on State Mandates* (2000) 84 Cal.App.4th 1264, 1283; *County of Los Angeles v. Commission on State Mandates* (2003) 110 Cal.App.4th 1176, 1189; *Bell Community Redevelopment Agency v. Woosley* (1985) 169 Cal.App.3d 24, 32; *Redevelopment Agency v. Commission on State Mandates*

The declarations state that although the claimant has partially funded its costs through grants and the claimant's Clean Water Fund, it is unlikely to be able to receive future grants, and the Clean Water Fund is already largely consumed by existing stormwater mandate costs and is funded through property tax assessments and a solid waste surcharge, neither of which the claimant has authority to increase under Proposition 218.[777]

The Regional Board's late comments argue that besides sewer fees, they can also levy regulatory fees for the mercury, PCBs, and green infrastructure provisions by collecting fees from developers.[778] Permittees are not required to use taxes to pay for the costs of the program, because they can levy fees, such as inspection fees, permitting fees, or for new storm drain connections on new development.[779] Besides the grants the claimant acknowledged in its declarations, other permittees have found other ways to fund program compliance, such as forming Business Improvement Districts or Community Benefit Districts, which vote to pay additional assessments to fund maintenance and beautification projects within the district, or by partnering with Caltrans on specific projects.[780]

There is also evidence in the administrative records for both this Test Claim and its predecessor that at least some permittees have adopted stormwater fees to cover costs to comply with their NPDES permits, such as Alameda County, the cities of Alameda and San Jose, and the Vallejo Sanitation and Flood Control District.[781]

There is no evidence in the record, however, that the claimant used fee or grant revenue for all of the mandated activities here. The State has not filed any evidence rebutting the claimant's assertion that proceeds of taxes were used to pay for the new state mandated activities.

Accordingly, there is substantial evidence in the record that the claimant incurred increased costs exceeding $1,000 and used its proceeds of taxes to comply with the test claim permit. The analysis must continue, however, to determine whether the exceptions in Government Code section 17556 apply.

(1997) 55 Cal.App.4th 976, 986-987; *City of El Monte v. Commission on State Mandates* (2000) 83 Cal.App.4th 266, 281.

[777] Exhibit A, Test Claim, page 48 (Declaration of Thomas Ruark, City Engineer, City of Union City).

[778] Exhibit C, Regional Board's Late Comments on the Test Claim, page 7.

[779] Exhibit C, Regional Board's Late Comments on the Test Claim, pages 9-10.

[780] Exhibit C, Regional Board's Late Comments on the Test Claim, page 11.

[781] Exhibit X (7), Alameda Clean Water Protection Fee, page 4; Exhibit X (8), City of Alameda Sewer and Stormwater Fees, page 2; Exhibit X (9), City of San Jose Stormwater Fees, pages 1-2; Exhibit X (10), Vallejo Sanitation and Flood Control District Stormwater Rate Equity Study 2013, page 10.

2. Pursuant to Government Code Section 17556(d), Permittees Have Authority to Impose Regulatory Fees on Development Sufficient as a Matter of Law to Fund the New State-Mandated Activities Related to Developing and Implementing the Green Infrastructure Plan Requirements (Provision C.3.j.i.-iv.), and thus, There Are No Costs Mandated by the State for These Activities. Permittees also Have Authority to Impose Property-Related Stormwater Fees Sufficient as a Matter of Law to Fund the Remaining New State-Mandated Activities Imposed by Provisions C.11.c.ii.2., C.11.c.iii.1.-3., C.12.c.ii.2., C.12.c.iii.1.-3., C.11.a.iii.1., C.12.a.iii.1.-2., C.12.d., and C.12.e., Beginning January 1, 2018, and, thus, There Are No Costs Mandated by the State for Those Activities Beginning January 1, 2018.

Government Code section 17556(d) provides that the Commission "shall not find costs mandated by the state, as defined in Section 17514" if the Commission finds that "the local agency or school district has the authority to levy service charges, fees, or assessments sufficient to pay for the mandated program or increased level of service."

The claimant argues that although it has a Clean Water Fund that is funded by property tax assessments and a solid waste franchise surcharge, most of this fund is already consumed by existing stormwater compliance costs, and it has no authority to increase these sources without seeking voter approval.[782]

The Regional Board's late comments argue that permittees have the ability to craft regulatory development fees capable of covering the costs associated with implementing any mandated mercury, PCBs, and green infrastructure provisions.[783]

There is no question that local agencies have the authority to charge fees for stormwater programs. Cities and counties have authority under the California Constitution to make and enforce ordinances and resolutions to protect and ensure the general welfare within their jurisdiction, which is commonly referred to as the "police power."[784] That authority includes the power to impose fees or charges that are directed toward a particular activity or industrial or commercial sector, known as "regulatory fees;" fees or charges based on services or benefits received from government, known as "user fees;" fees or charges imposed as a condition of development of real property, known as "development fees;" and fees or charges (or assessments) levied on all property owners within the jurisdiction, which after Proposition 218 are commonly described as "property-related fees or assessments." In addition, a number of provisions of the Government Code provide express authority to

[782] Exhibit A, Test Claim, page 34 (Written Narrative).

[783] Exhibit C, Regional Board's Late Comments on the Test Claim, page 7.

[784] California Constitution, article XI, section 7. See also, *Marblehead Land Co. v. City of Los Angeles* (1931) 47 F.2d 528, 532.

impose or increase regulatory fees,[785] fees for development of real property,[786] and property-based assessments, fees and charges.[787] Each of these fees or charges is subject to differing limitations pursuant to Propositions 218 and 26.[788]

The analysis below will address those limitations separately, because only property-related fees and assessments are subject to the notice, hearing, and majority approval or protest provisions of articles XIII D.

"Regulatory," "development," and "user" fees or charges are not subject to voter approval or majority protest. Broadly, these categories of fees are those that are targeted toward certain activities or sectors of industrial or commercial activity, or certain benefits received from the government or burdens created by the activity or the entity, rather than imposed on all property owners as an incident of property ownership.[789] Such fees may be adopted as an ordinance or resolution in the context of the legislative body's normal business,[790] subject only to the limitations of article XIII C, section 1(e), which, largely turn on establishing the relationship between the revenues raised and the uses to which they are put, and the amount charged and the benefits received or burdens created by the payor.[791]

As explained below, the courts have held that there are no costs mandated by the state pursuant to Government Code section 17556(d) when local government has the authority to charge regulatory fees pursuant to article XIII C or property-related fees that

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[785] See, for example, Government Code section 37101 ("The legislative body may license, for revenue and regulation, and fix the license tax upon, every kind of lawful business transacted in the city.").

[786] Government Code section 66001 provides for development fees under the Mitigation Fee Act requiring local entity to identify the purpose of the fee and the uses to which revenues will be put, to determine a reasonable relationship between the fee's use and the type of project or projects on which the fee is imposed.

[787] See, for example, Health and Safety Code section 5471 (fees for storm drainage maintenance and operation); Government Code sections 38902 (providing for sewer standby charges); 53750 et seq. (Proposition 218 Omnibus Implementation Act, describing procedures for adoption of assessments, fees and charges); 53751 (as amended in 2017, providing that fees for sewer services includes storm sewers).

[788] California Constitution, articles XIII C and XIII D.

[789] See *Apartment Assn. of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, 842.

[790] See, for example, *City and County of San Francisco v. Boss* (1948) 83 Cal.App.2d 445, 450 ("If revenue is the primary purpose and regulation is merely incidental the imposition is a tax; while if regulation is the primary purpose the mere fact that incidentally a revenue is also obtained does not make the imposition a tax").

[791] California Constitution, article XIII C, section 1(e).

are subject only to the voter protest provisions of article XIII D, section 6 of the California Constitution.

a. Case law establishes that the exception to the subvention requirement found in Government Code section 17556(d) is a legal inquiry, not a practical one.

The California Supreme Court upheld the constitutionality of Government Code section 17556(d) in County of Fresno.[792] The court, in holding that the term "costs" in article XIII B, section 6, excludes expenses recoverable from sources other than taxes, stated:

> Section 6 was included in article XIII B in recognition that article XIII A of the Constitution severely restricted the taxing powers of local governments. (See *County of Los Angeles I, supra*, 43 Cal.3d at p. 61.) The provision was intended to preclude the state from shifting financial responsibility for carrying out governmental functions onto local entities that were ill equipped to handle the task. (*Ibid.*; see *Lucia Mar Unified School Dist. v. Honig* (1988) 44 Cal.3d 830, 836, fn. 6 [244 Cal.Rptr. 677, 750 P.2d 318].) Specifically, it was designed to protect the tax revenues of local governments from state mandates that would require expenditure of such revenues. Thus, although its language broadly declares that the "state shall provide a subvention of funds to reimburse ... local government for the costs [of a state-mandated new] program or higher level of service," read in its textual and historical context section 6 of article XIII B requires subvention only when the costs in question can be recovered solely from tax revenues.[793]

Following the logic of *County of Fresno*, the Third District Court of Appeal in *Connell v. Superior Court* held that the Santa Margarita Water District, and other similarly situated districts, had statutory authority to raise rates on water, notwithstanding argument and evidence that the amount by which the district would be forced to raise its rates would render the water unmarketable.[794] The district acknowledged the existence of fee authority, but argued it was not "sufficient," within the meaning of section 17556(d).[795] The court held that "[t]he Districts in effect ask us to construe 'authority,' as used in the statute, as a practical ability in light of surrounding economic circumstances. However, this construction cannot be reconciled with the plain language of [section 17556(d)] and would create a vague standard not capable of reasonable adjudication."[796] The court

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[792] *County of Fresno v. State of California* (1990) 53 Cal.3d. 482.

[793] *County of Fresno v. State of California* (1990) 53 Cal.3d. 482, 487.

[794] *Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 402.

[795] *Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 398.

[796] *Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 401.

concluded: "Thus, the economic evidence presented by SMWD to the Board was irrelevant and injected improper factual questions into the inquiry."[797]

More recently, the Third District Court of Appeal endorsed and followed *Connell* in *Paradise Irrigation District*: "[w]e also reject the Water and Irrigation Districts' claim that, as a matter of practical reality, the majority protest procedure allows water customers to defeat the Districts' authority to levy fees."[798] Instead, the court held, "[w]e adhere to our holding in *Connell* that the inquiry into fee authority constitutes an issue of law rather than a question of fact."[799] Further, the 2021 decision of the Second District Court of Appeal in *Department of Finance v. Commission on State Mandates* found that "[e]ven if we assume that drafting or enforcing a law that imposes fees to pay for inspections would be difficult, the issue is whether the local governments have the authority to impose such a fee, not how easy it would be to do so."[800] And, the 2022 decision of the Third District Court of Appeal in *Department of Finance v. Commission on State Mandates* found that "The sole issue before us is whether permittees have 'the authority, i.e., the right or power, to levy fees sufficient to cover the costs of the state-mandated program' . . . The inquiry is an issue of law, not a question of fact."[801]

Accordingly, the rule from these cases is that where the claimant has "authority, i.e., the right or power, to levy fees sufficient to cover the costs" of a state mandated program, reimbursement is not required, notwithstanding other factors that may make the exercise of that authority impractical, undesirable, or difficult.[802]

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[797] *Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 401.

[798] *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 195.

[799] *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 195.

[800] *Department of Finance v. Commission on State Mandates* (2021) 59 Cal.App.5th 546, 564, citing *Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 401.

[801] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 585.

[802] *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487; *Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 401-402.

b. Permittees have authority to impose regulatory fees on development sufficient as a matter of law to fund the new state-mandated activities related to developing and implementing the Green Infrastructure Plan (Section C.3.j.i.-iv.), which are sufficient as a matter of law to cover the costs of the activities within the meaning of Government Code section 17556(d) and thus, there are no costs mandated by the state for these activities.

i. Permittees have constitutional and statutory authority to impose regulatory fees, which are exempt from the definition of "tax" under article XIII C of the California Constitution as long as the fees meet a threshold of reasonableness and proportionality.

Article XI, section 7 of the California Constitution provides: "A county or city may make and enforce within its limits all local, police, sanitary, and other ordinances and regulations not in conflict with general laws."[803] Interpreting this provision, and its predecessor, the courts have held that a local legislative body with police power "has a wide discretion" and its laws or ordinances "are invested with a strong presumption of validity."[804] The courts have held that "the power to impose valid regulatory fees does not depend on legislatively authorized taxing power but exists pursuant to the direct grant of police power under article XI, section 7, of the California Constitution."[805] Accordingly, ordinances or laws regulating legitimate businesses or other activities within a city or county, as well as regulating the development and use of real property, have generally been upheld.[806] In addition, "[t]he services for which a regulatory fee may be charged include those that are "'incident to the issuance of [a] license or permit, investigation, inspection, administration, maintenance of a system of supervision and

[803] California Constitution, article XI, section 7.

[804] *Marblehead Land Co. v. City of Los Angeles* (1931) 47 F.2d 528, 532.

[805] *Mills v. County of Trinity* (1980) 108 Cal.App.3d 656, 662 (in which a taxpayer challenged a county ordinance that imposed new and increased fees for county services in processing subdivision, zoning, and other land-use applications that had been adopted without a two-thirds affirmative vote of the county electors).

[806] See *Ex parte Junqua* (1909) 10 Cal.App. 602 (police power "embraces the right to regulate any class of business, the operation of which, unless regulated, may, in the judgment of the appropriate local authority, interfere with the rights of others…."); *Sullivan v. City of Los Angeles Dept. of Building & Safety* (1953) 116 Cal.App.2d 807 (recognizing broad power to regulate not only nuisances but things or activities that may become nuisances or injurious to public health); *California Building Industry Assn. v. City of San Jose* (2015) 61 Cal.4th 435 (recognizing broad authority of municipality to regulate land use).

enforcement.'"[807] The courts also hold that water pollution prevention is a valid exercise of government police power.[808]

Moreover, as noted above, a number of provisions of the Government Code provide express authority to impose or increase regulatory fees,[809] and fees for development of real property,[810] and property-based assessments, fees, and charges.[811]

Thus, there is no dispute that the claimants have authority, both statutory and constitutional (recognized in case law), to impose fees, including regulatory and development fees.[812] The issue in dispute is how far that authority goes and whether Propositions 218 and 26 impose procedural and substantive restrictions that so weaken that authority as to render it insufficient within the meaning of Government Code section 17556(d).

As discussed above, Proposition 13 of 1978 added article XIII A to the California Constitution, with the intent to limit local governments' power to impose or increase taxes.[813] Proposition 13 generally limited the rate of any ad valorem tax on real property to one percent; limited increases in the assessed value of real property to two percent annually absent a change in ownership; and required that any changes in state taxes enacted to increase revenues and special taxes imposed by local government

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[807] *Department of Finance v. Commission on State Mandates* (2021) 59 Cal.App.5th 546, 562, quoting *California Assn. of Prof. Scientists v. Department of Fish & Game* (2000) 79 Cal.App.4th 935, 945.

[808] *Freeman v. Contra Costa County Water Dist.* (1971) 18 Cal.App.3d 404, 408.

[809] See, for example, Government Code section 37101 ("The legislative body may license, for revenue and regulation, and fix the license tax upon, every kind of lawful business transacted in the city").

[810] Government Code section 66001 provides for development fees under the Mitigation Fee Act requiring local entity to identify the purpose of the fee and the uses to which revenues will be put, to determine a reasonable relationship between the fee's use and the type of project or projects on which the fee is imposed.

[811] See, for example, Government Code sections 38902 (providing for sewer standby charges); 53750 et seq. (Proposition 218 Omnibus Implementation Act, describing procedures for adoption of assessments, fees and charges); 53751 (as amended in 2017, providing that fees for sewer services includes storm sewers).

[812] See also, *Ayers v. City Council of City of Los Angeles* (1949) 34 Cal.2d 31 (Upholding conditions imposed by the City on subdivision development, in the absence of any clear restriction or limitation on the City's police power); *Associated Home Builders etc. Inc. v. City of Walnut Creek* (1971) 4 Cal.3d 633 (upholding state statute and local ordinance requiring dedication or in-lieu fees for parks and recreation as a condition of subdividing for residential building).

[813] See, e.g., *County of Fresno v. State of California* (1991) 53 Cal.3d 482.

must be approved by a two-thirds vote of the electors.[814] Proposition 13, however, did not define "special taxes"; a series of judicial decisions tried to define the difference between fees and taxes, and in so doing, diminished Proposition 13's import by allowing local governments to generate revenue without a two-thirds vote.[815]

In 1996, Proposition 218 added article XIII C to ensure and reiterate voter approval requirements for general and special taxes, because it was not clear whether Proposition 62, which enacted statutory provisions to ensure that all new local taxes be approved by a vote of the local electorate, bound charter jurisdictions.[816] As added by Proposition 218, article XIII C defined all taxes as general or special, and provided that special districts have no power to impose general taxes; and for any other local government, general taxes require approval by a majority of local voters, and special taxes require a two-thirds majority voter approval.[817]

Interpreting the newly-reiterated limitation on local taxes, the California Supreme Court in *Sinclair Paint* held that a statute permitting the Department of Health Services to levy fees on manufacturers and other persons contributing to environmental lead contamination, in order to support a program of evaluation and screening of children, imposed bona fide regulatory fees, and not, as alleged by plaintiffs, a special tax that would require voter approval under articles XIII A and XIII C.[818] The Court noted with approval San Diego Gas & Electric, in which the air district was permitted to recover costs of its operations, which are not reasonably identifiable with specific industrial polluters, against all monitored polluters according to an emissions-based formula, and those fees were not held to constitute a special tax.[819] The Court cited with approval the court of appeal's finding that "[a] reasonable way to achieve Proposition 13's goal of tax relief is to shift the costs of controlling stationary sources of pollution from the tax-paying public to the pollution-causing industries themselves…"[820] The Court thus held: "In our view, the shifting of costs of providing evaluation, screening, and medically necessary follow-up services for potential child victims of lead poisoning from the public

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[814] *Schmeer v. County of Los Angeles* (2013) 213 Cal.App.4th 1310, 1317.

[815] *Schmeer v. County of Los Angeles* (2013) 213 Cal.App.4th 1310, 1317-1319.

[816] *Jacks v. City of Santa Barbara* (2017) 3 Cal.5th 248, 258-259.

[817] See Exhibit X (11), Excerpts from Voter Information Guide, November 1996 General Election (Proposition 218, November 5, 1996).

[818] *Sinclair Paint Co. v. State Board of Equalization* (1997) 15 Cal.4th 866, 870; 877.

[819] *San Diego Gas & Electric Co. v. San Diego County Air Pollution Control Dist.* (1988) 203 Cal.App.3d 1132, 1148.

[820] *Sinclair Paint Co. v. State Board of Equalization* (1997) 15 Cal.4th 866, 879 quoting *San Diego Gas & Electric Co. v. San Diego County Air Pollution Control Dist.* (1988) 203 Cal.App.3d 1132, 1148.

to those persons deemed responsible for that poisoning is likewise a reasonable police power decision."[821]

In 2010, the voters approved Proposition 26, partly in response to *Sinclair Paint*.[822] Proposition 26 sought to broaden the definition of "tax," and accordingly narrow the courts' construction of permissible non-tax fees. However, Proposition 26 largely codifies the analysis of *Sinclair Paint*, in its articulation of the various types of fees and charges that are *not* deemed "taxes."[823] Thus, while Proposition 13 led a series of increasing restrictions on the imposition of new taxes, after *Sinclair Paint* and Propositions 218 and 26, local governments have the power, subject to varying limitations, to impose or increase (1) general taxes (with voter approval);[824] (2) special taxes (with two-thirds voter approval);[825] and (3) levies, charges, or exactions that are not "taxes," pursuant to the exceptions stated in article XIII C, section 1(e), which include:

> (1) A charge imposed for a specific benefit conferred or privilege granted directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the local government of conferring the benefit or granting the privilege.
>
> (2) A charge imposed for a specific government service or product provided directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the local government of providing the service or product.
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> (3) A charge imposed for the reasonable regulatory costs to a local government for issuing licenses and permits, performing investigations, inspections, and audits, enforcing agricultural marketing orders, and the administrative enforcement and adjudication thereof.
>
> (4) A charge imposed for entrance to or use of local government property, or the purchase, rental, or lease of local government property.
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> (5) A fine, penalty, or other monetary charge imposed by the judicial branch of government or a local government, as a result of a violation of law.

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[821] *Sinclair Paint Co. v. State Board of Equalization* (1997) 15 Cal.4th 866, 879.

[822] See Exhibit X (12), Excerpts from Voter Information Guide, November 2010 General Election (Proposition 26, Nov. 2, 2010), page 3.

[823] *City of San Buenaventura v. United Water Conservation Dist.* (2017) 3 Cal.5th 1191, 1210, footnote 7 citing *Jacks v. City of Santa Barbara* (2017) 3 Cal.5th 248, 262 and footnote 5.

[824] California Constitution, article XIII C, section 2.

[825] California Constitution, article XIII C, section 2.

(6) A charge imposed as a condition of property development.

(7) Assessments and property-related fees imposed in accordance with the provisions of Article XIII D.

The local government bears the burden of proving by a preponderance of the evidence that a levy, charge, or other exaction is not a tax, that the amount is no more than necessary to cover the reasonable costs of the governmental activity, and that the manner in which those costs are allocated to a payor bear a fair or reasonable relationship to the payor's burdens on, or benefits received from, the governmental activity.[826]

The plain language of article XIII C, section 1(e) thus describes certain categories of fees or exactions that are not taxes, including fees or charges for a benefit conferred or privilege granted,[827] and fees or charges for a government service or product provided to the payor and not others.[828] Both of these could be described as "user" fees, or otherwise described as fees for a government service or benefit. In addition, section 1(e) provides for regulatory fees (including those for inspections),[829] development fees,[830] and assessments or property-related fees or charges adopted in accordance with article XIII D.[831] In each case, the local government bears the burden to establish that the fee or charge is not a tax, including that "the amount is no more than necessary to cover the reasonable costs of the governmental activity, and that the manner in which those costs are allocated to a payor bear a fair or reasonable relationship to the payor's burdens on, or benefits received from, the governmental activity."[832]

However, while the limitations of article XIII C, section 1(e) may be newly expressed in the Constitution (i.e., added in 2010 by Proposition 26), the concepts that regulatory fees must be reasonably related to a legitimate public purpose, and in some way proportional to the activity being regulated, are not at all new. The California Supreme Court described the history of such fees in *United Water Conservation Dist*., saying, "the language of Proposition 26 is drawn in large part from pre-Proposition 26 case law distinguishing between taxes subject to the requirements of article XIII A, on the one hand, and regulatory and other fees, on the other."[833] The Court also noted: "*Sinclair*

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[826] California Constitution, article XIII C, section 1(e).

[827] California Constitution, article XIII C, section 1(e)(1).

[828] California Constitution, article XIII C, section 1(e)(2).

[829] California Constitution, article XIII C, section 1(e)(3).

[830] California Constitution, article XIII C, section 1(e)(6).

[831] California Constitution, article XIII C, section 1(e)(7).

[832] California Constitution, article XIII C, section 1(e).

[833] *City of San Buenaventura v. United Water Conservation Dist.* (2017) 3 Cal.5th 1191, 1210, footnote 7 citing *Jacks v. City of Santa Barbara* (2017) 3 Cal.5th 248, 262 and footnote 5.

Paint, from which the relevant article XIII C requirements are derived, made clear that the aggregate cost inquiry and the allocation inquiry are two separate steps in the analysis."[834] Accordingly, the Court upheld the court of appeal's finding that the conservation charges did not exceed the reasonable cost of the regulatory activity in the aggregate,[835] but presumed "each requirement to have independent effect,"[836] and remanded the matter for consideration of the latter issue.

Similarly, in *San Diego County Water Authority*, the First District Court of Appeal upheld non-property-related rates charged for conveying water from the Colorado River based on a two-part test.[837] The rates were held to satisfy both the express requirements of article XIII C, section 1(e)(2): "a specific service (use of the conveyance system) directly to the payor (a member agency) that is not provided to those not charged and which does not exceed the reasonable costs…of providing the service"; and the more general test of *Sinclair Paint*: "[the volumetric rates] bear a fair and reasonable relationship to the benefits it receives from its use of the conveyance system."[838]

Notably, developer fees have been interpreted somewhat more loosely with respect to this proportionality test. Broad categories of fees have been found to be allowable development fees, such as fees to recover the local agency's costs of advance planning services (i.e., the cost to prepare general and specific plans that are applicable to the project being developed). The plain language of article XIII C, section 1(e)(6) conspicuously omits any language relating to the reasonable costs or burdens of development, although the general caveat at the end of section 1(e) presumably still applies: "that the amount is no more than necessary to cover the reasonable costs of the governmental activity, and that the manner in which those costs are allocated to a payor bear a fair or reasonable relationship to the payor's burdens on, or benefits received from, the governmental activity."[839] However, the court in *616 Croft Ave., LLC* suggests that as long as a development fee is "reasonably related to the broad general welfare purposes for which the ordinance was enacted,"[840] the courts will not inquire into the reasonableness of the fee as applied to a particular payor:

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[834] *City of San Buenaventura v. United Water Conservation Dist.* (2017) 3 Cal.5th 1191, 1210.

[835] *City of San Buenaventura v. United Water Conservation Dist.* (2017) 3 Cal.5th 1191, 1212.

[836] *City of San Buenaventura v. United Water Conservation Dist.* (2017) 3 Cal.5th 1191, 1214 citing *Dix v. Superior Court* (1991) 53 Cal.3d 442, 459.

[837] *San Diego County Water Authority v. Metropolitan Water Dist. of Southern California* (2017) 12 Cal.App.5th 1124, 1153.

[838] *San Diego County Water Authority v. Metropolitan Water Dist. of Southern California* (2017) 12 Cal.App.5th 1124, 1153.

[839] California Constitution, article XIII C, section 1(e).

[840] *616 Croft Ave., LLC v. City of West Hollywood* (2016) 3 Cal.App.5th 621, 631.

> [A]lthough the fee must be reasonable, the inquiry is not about the reasonableness of the individual calculation of fees related to Croft's development's impact on affordable housing. The inquiry is whether the fee schedule itself is reasonably related to the overall availability of affordable housing in West Hollywood.[841]

The court relied in part on article XIII D, section 1, which states that "[n]othing in this article or Article XIII C shall be construed to…[a]ffect exiting laws relating to the imposition of fees as a condition of property development."[842] Other courts have also confirmed the constitutionality of development fees, finding that there must be a "logical nexus" between the impacts of development and the use of the fee exacted from the developer to mitigate those impacts, and that the fee must be roughly proportionate to the impacts from the development.[843]

Accordingly, there is no reason to believe that article XIII C imposes any greater limitation on local governments' authority under their police power to impose reasonable regulatory fees and other fees than existed under prior law. Article XIII C makes clear that the burden is on the local government to establish that the levy is not a tax, that the fee is reasonably related to the costs to government in the aggregate, and that the fee charged to the payors is reasonably related to the benefits received or burdens created by such payors as a part of the rate setting process.[844] It is not the burden of the state to make this showing on behalf of local government.

Based on the foregoing, the Commission finds that article XIII C of the California Constitution does not render local government's authority to impose fees insufficient as a matter of law within the meaning of Government Code section 17556.

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[841] *616 Croft Ave., LLC v. City of West Hollywood* (2016) 3 Cal.App.5th 621, 631-632.

[842] *616 Croft Ave., LLC v. City of West Hollywood* (2016) 3 Cal.App.5th 621, 631 ("Because the City has shown the fees are not special taxes under Terminal Plaza [*Corp. v. City and County of San Francisco* (1986) 177 Cal.App.3d 892], articles XIII C and XIII D of the California Constitution do not require the City to demonstrate the reasonableness of Croft's individual fee").

[843] See *Nollan v. California Coastal Commission* (1987) 483 U.S. 825; *Dolan v. City of Tigard* (1994) 512 U.S. 374.

[844] California Constitution, article XIII C, section 1(e).

ii. Permittees have regulatory fee authority for the new state-mandated requirements related to developing and implementing the Green Infrastructure Plan (Provision C.3.j.i.-iv.), and thus, there are no costs mandated by the state pursuant to Government Code section 17556(d) for this Provision. Permittees do not have regulatory fee authority for the other Provisions found to impose new state-mandated requirements.

The Regional Board contends that the claimants have regulatory fee authority within the meaning of Government Code section 17556(d) sufficient to cover the costs of all the new state-mandated activities by charging fees to developers and, thus, there are no costs mandated by the state.[845] The Regional Board argues that regulatory fees could be collected from developers for the costs associated with implementing mercury, PCBs, and green infrastructure provisions, stating:

> The permittees are capable of crafting fees to cover the trash, mercury, PCB and green infrastructure provisions. The Supreme Court has validated the adoption of regulatory fees, providing they are not levied for unrelated revenue purposes. It is reasonable to collect fees from developers for the costs associated with implementing the mercury, PCBs and green infrastructure provisions. Similarly, the costs of full trash capture can be allocated to businesses responsible for generating high trash areas. Asking these entities to bear the costs directly related to their activities "is comparable in character to similar police power measures imposing fees to defray the actual or anticipated adverse effects of various business operations." Permittees' police power is "broad enough to include mandatory remedial measures to mitigate the *past, present or future* adverse impact of the fee payer's operations" in situations, like those present here, where there is a causal connection or nexus between the adverse effects and the fee payer's activities.[846]

As explained below, the Commission agrees that the permittees have the authority to impose regulatory fees on developers sufficient as a matter of law to cover the costs to comply with Provision C.3.j.i.-iv. and, thus, there are no costs mandated by the state for the requirements in Provision C.3.j.i.-iv. However, regulatory fees imposed on developers for the remaining new state-mandated activities would not satisfy constitutional requirements because there is no evidence in the law or record that the remaining activities were intended to provide a specific benefit or privilege only to developers.

The sole issue for determining whether Government Code section 17556(d) applies is whether the claimants have the "authority, i.e., the right or power, to levy fees sufficient to cover the costs" of a state mandated program, notwithstanding other factors that may

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[845] Exhibit C, Regional Board's Late Comments on the Test Claim, page 7.

[846] Exhibit C, Regional Board's Late Comments on the Test Claim, page 7, citations omitted, emphasis in original.

make the exercise of that authority or the collection of those fees impractical or difficult.[847] And, as explained above, the claimants have the authority under their police powers to impose regulatory fees on development, which must meet the requirements of article XIII C, section 1(e) (Proposition 26).

The Green Infrastructure Plan requirements imposed by Provision C.3.j.i.-iv. provide general guidelines for overall streetscape and project design and construction; standard specifications and typical design details and related information necessary to incorporate Green Infrastructure into development projects; require any Green Infrastructure projects not subject to the treatment and hydromodification sizing requirements already imposed on Regulated Projects to meet those standards; and summarize planning documents that have been updated or modified to include green infrastructure elements.[848] It also requires permittees to conduct public outreach to educate professionals involved in the planning and design of Green Infrastructure Projects on these standards and specifications, to develop and implement methods for tracking and reporting implementation of green infrastructure measures, and to report on the implementation of green infrastructure measures.[849] In other words, the Green Infrastructure Plan provides guidance to project developers on how to effectively incorporate Green Infrastructure into a project's design for Regulated Projects and any other projects intended to incorporate Green Infrastructure elements that do not qualify as a Regulated Project. Although the Green Infrastructure Plan as a whole provides a public good by encouraging the use of Green Infrastructure to reduce pollutant loads, project developers receive a direct benefit from the information it provides on how to incorporate those elements into their projects.

The activities required to develop and implement a Green Infrastructure Plan pursuant to Provision C.3.j.i.-iv., which would then be applicable to development projects seeking permittees' approval, would fall within the category of a constitutionally-allowable regulatory development fee. In 2022, the Third District Court of Appeal issued its decision in *Department of Finance (Discharge of Stormwater Runoff)* and found that the permittees had regulatory fee authority under their police powers to pay for the requirements imposed by the San Diego Regional Water Quality Control Board to develop and implement a hydromodification management plan and LID requirements for use on priority development projects, as incidental expenses of regulating development.[850] Similar to the test claim permit here, the court explained that the priority development projects addressed in the permit are certain new developments

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[847] *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487; *Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 401-402; *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 585.

[848] Exhibit A, Test Claim, page 424 (test claim permit, Provisions C.3.j.i.2.e.-h.).

[849] Exhibit A, Test Claim, pages 425 (test claim permit, Provision C.3.j.i.4.a.), and 427 (test claim permit, Provision C.3.j.iv.).

[850] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 586-593.

that increase pollutants in stormwater and in discharges from MS4s, including certain residential, commercial, and industrial uses along with parking lots and roads that add impervious surfaces or are built on hillsides or in environmentally sensitive areas.[851] The permit required the claimants to develop and implement a hydromodification management plan to mitigate increases in runoff discharge rates and durations from priority development projects, and add LID requirements to their local Standard Urban Storm Water Mitigation Plans.[852] The County and cities argued that the costs of creating the plans could not be recovered through regulatory fees, and thus voter approval would be required, since the amount of the fee would exceed the reasonable costs of providing the services for which it is charged, and the amount of the fee would not bear a reasonable relationship to the burdens created by the feepayers' activities or operations, primarily because the costs were incurred before any priority development project was proposed.[853] The County and cities further argued that they could not legally levy a fee to recover the cost of preparing the plans because those planning actions benefit the public at large and, thus, would constitute a tax.[854] The court disagreed and found that local government has fee authority sufficient as a matter of law to cover the costs of the hydromodification management plan and LID requirements within the meaning of Government Code section 17556(d) and, thus, there were no costs mandated by the state for these activities based on the following findings:

- Creating the hydromodification management plans and the LID requirements "constitute costs incident to the development permit which permittees will issue to priority development projects and the administration of permittees' pollution abatement program. Setting the fee will not require mathematical precision. Permittees' legislative bodies need only consider probabilities according to the best honest viewpoint of [their] informed officials to set the amount of the fee."[855]
- There was no evidence that the permittees could not levy a fee that would bear a reasonable relationship to the burdens created by future priority development. "A regulatory fee does not become a tax simply because the fee may be disproportionate to the service rendered to individual payors . . . The question of proportionality is not measured on an individual basis. Rather, it is measured

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[851] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 586.

[852] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 586.

[853] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 587-590.

[854] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 592-593.

[855] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 590, internal quotations omitted.

collectively, considering all rate payors." The fee just has to be related to the overall cost of the governmental regulation.[856]

- The court rejected the claimants' argument that they could not legally levy a fee to recover the cost of preparing the plans because those planning actions benefit the public at large, relying on *Newhall County Water Dist. v. Castaic Lake Water Agency* (2016) 243 Cal.App.4th 1430, 1451. Proposition 26 states a levy is not a tax where, among other uses, it is imposed "for a specific government service provided directly to the payor that is not provided to those not charged ...."[857] However, the court found that the service provided directly to developers of priority development projects was the preparation, implementation, and approval of water pollution mitigations applicable only to their projects. Unlike in *Newhall*, that service was not provided to anyone else, and only affected priority project developers charged for the service. The service would not be provided to those not charged.[858]

In addition, the Mitigation Fee Act, Government Code section 66000 et seq., also authorizes local agencies to impose development fees if certain requirements are met. As defined by the Act, a development fee is:

> . . . a monetary exaction other than a tax or special assessment, whether established for a broad class of projects by legislation of general applicability or imposed on a specific project on an ad hoc basis, that is charged by a local agency to the applicant in connection with approval of a development project for the purpose of defraying all or a portion of the cost of public facilities related to the development project, but does not include . . . fees for processing applications for governmental regulatory actions or approvals[.][859]

"[A] fee does not become a 'development fee' simply because it is made in connection with a development project. Rather, approval of the development project must be conditioned on payment of the fee."[860] A development fee under the Act is one that is

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[856] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 590.

[857] See, for example, *Department of Finance v. Commission on State Mandates* (2021) 59 Cal.App.5th 546, 569, where the court held that article XIII D prohibits MS4 permittees from charging property owners for the cost of providing trash receptacles at public transit locations in part because service was made available to the public at large.

[858] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 592-593.

[859] Government Code section 66000(b).

[860] *California Building Industry Assn. v. San Joaquin Valley Air Pollution Control Dist.* (2009) 178 Cal.App.4th 120, 130.

imposed to "defray[] all or a portion of the cost of public facilities related to the development project."[861] "'Public facilities' [broadly] includes public improvements, public services, and community amenities," and, thus, is not limited to capital outlay costs.[862] The local agency shall determine how there is a reasonable relationship between the amount of the fee and the cost of the public facility or portion of the public facility attributable to the development on which the fee is imposed.[863] Pollution prevention or abatement provides a public service,[864] which falls within the Act's definition of a public facility.

The courts have also explained that the scope of a regulatory fee is somewhat flexible: a regulatory fee is valid as long as it relates to the overall purpose of the regulatory governmental action.[865] The Third District Court of Appeal in *California Assn. of Prof. Scientists v. Department of Fish & Game (Professional Scientists)* has identified the following general rules:

> General principles have emerged. Fees charged for the associated costs of regulatory activities are not special taxes under an article XIII A, section 4 analysis if the " ' "fees do not exceed the reasonable cost of providing services necessary to the activity for which the fee is charged and [they] are not levied for unrelated revenue purposes." ' " (Citation omitted.) "A regulatory fee may be imposed under the police power when the fee constitutes an amount necessary to carry out the purposes and provisions of the regulation." (Citation omitted.) "Such costs ... include all those incident to the issuance of the license or permit, investigation, inspection, administration, maintenance of a system of supervision and enforcement." (Citation omitted.) Regulatory fees are valid despite the absence of any perceived "benefit" accruing to the fee payers. (Citation omitted.) Legislators "need only apply sound judgment and consider 'probabilities according to the best honest viewpoint of informed officials' in determining the amount of the regulatory fee." (Citation omitted).[866]

As indicated by the court in *Professional Scientists*, regulatory fees can include all those costs "incident to the issuance of the license or permit, investigation, inspection,

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[861] Government Code section 66000(b).

[862] Government Code section 66000(d).

[863] Government Code 66001.

[864] *Department of Finance v. Commission on State Mandates* (2021) 59 Cal.App.5th 546, 560.

[865] *California Farm Bureau Federation v. State Water Resources Control Board* (2011) 51 Cal.4th 421, 438, citing *California Assn. of Prof. Scientists v. Department of Fish & Game* (2000) 79 Cal.App.4th 935, 945.

[866] *California Assn. of Prof. Scientists v. Department of Fish & Game* (2000) 79 Cal.App.4th 935, 945.

administration, maintenance of a system of supervision and enforcement."[867] In *United Business Commission v. City of San Diego*, the court explained that regulatory fees include "all the incidental consequences that may be likely to subject the public to cost in consequence of the business licensed" and that the following incidental costs are properly included in a regulatory fee: "inspection of hazards, travel time, office supplies, telephone expenses, overhead, and clerk's time"[868]

Here, Green Infrastructure Program Plan development, early implementation of Green Infrastructure Projects, participating in processes to promote Green Infrastructure, and tracking and reporting progress pursuant to Provision C.3.j.i.-iv. are "incident to the development permit[s] which permittees will issue to priority development projects and the administration of permittees' pollution abatement program."[869] The required activities all relate to the development and implementation of a plan which facilitates incorporating Green Infrastructure elements into development projects, which project developers benefit from directly. The proposed fee would be imposed as a condition for approving new real property development and redevelopment and based on the developer's application for government approval to proceed with the development. The fees would not be levied for an unrelated revenue purpose, can be fairly allocated among the fee payers, and the service is not provided to those not charged.[870] Such fees are not taxes under Proposition 26 when they are charges imposed as a condition of property development.[871]

In addition, there is no evidence in the record indicating that the claimants cannot levy a fee that will bear a reasonable relationship to the burdens created by future Green Infrastructure development. A regulatory fee does not become a tax simply because the fee may be disproportionate to the service rendered to individual payors.[872] The question of proportionality is not measured on an individual basis. Rather, it is

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[867] *California Assn. of Prof. Scientists v. Department of Fish & Game* (2000) 79 Cal.App.4th 935, 945.

[868] *United Business Commission v. City of San Diego* (1979) 91 Cal.App.3d 156, 166, footnote 2.

[869] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 590.

[870] *Department of Finance v. Commission on State Mandates* (2021) 59 Cal.App.5th 546, 562-563, citing *California Building Industry Assn. v. State Water Resources Control Bd.* (2018) 4 Cal.5th 1032, 1046, which cited *Sinclair Paint Co. v. State Bd. of Equalization* (1997) 15 Cal.4th 866, 881; see also *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 588.

[871] California Constitution, article XIII C, section 1(e)(6).

[872] *Brydon v. East Bay Mun. Utility Dist.* (1994) 24 Cal.App.4th 178, 194.

measured collectively, considering all rate payors.[873] Thus, permissible fees must be related to the overall cost of the governmental regulation. They need not be finely calibrated to the precise benefit each individual fee payor might derive, or the precise burden each payer may create. What a fee cannot do is exceed the reasonable cost of regulation with the generated surplus used for general revenue collection. "An excessive fee that is used to generate general revenue becomes a tax."[874] And "No one is suggesting [that the claimants] levy fees that exceed their costs."[875]

Based on this authority, the claimants in this case have regulatory and developer fee authority under their police powers and the Mitigation Fee Act sufficient as a matter of law to cover the costs of the new state-mandated requirements related to the Green Infrastructure Plan (Section C.3.j.i.-iv.), pursuant to Government Code section 17556(d), and thus, there are no costs mandated by the state for these requirements.

In contrast, the Regional Board has not explained how the permittees have authority to impose fees on developers for the remaining mandated activities. The remaining provisions: 1) required permittees to prepare a reasonable assurance analysis of future mercury and PCBs load reductions (C.11.c.ii.2., C.11.c.iii.1.-3., C.12.c.ii.2., and C.12.c.iii.1.-3.); 2) required a mercury progress report on the list of watersheds where mercury control measures are or will be implemented (C.11.a.iii.); 3) required PCBs reporting (C.12.a.iii.1. and 2.); 4) required a PCBs control measures implementation plan (C.12.d.); and 5) required permittees to perform PCBs caulk and sealant testing (C.12.e.). These activities relate to identifying where mercury and PCBs are currently present in the environment, a plan identifying control measures that are or will be implemented during the permit term, and creating plans and analysis for how those loads will be reduced in the future.[876] Unlike developing and implementing the Green Infrastructure Plan, which provides a direct benefit to developers by providing guidance on how to incorporate green infrastructure into their projects and requires compliance with the Green Infrastructure Plan requirements to obtain a building permit, the remaining new mandated activities primarily benefit the public at large by providing information that shows compliance with the TMDLs and how best to comply with the water quality standards for these pollutants in the future. The TMDLs showed that mercury and PCBs needed to be controlled and reduced because of the threat to the health of humans who consume fish, the impairment to sport fishing, and the preservation of endangered species, and the sources of these pollutants extend beyond

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[873] *California Assn. of Prof. Scientists v. Department of Fish & Game* (2000) 79 Cal.App.4th 935, 948.

[874] *California Farm Bureau Federation v. State Water Resources Control Bd.* (2011) 51 Cal.4th 421, 438.

[875] *Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 402.

[876] Exhibit A, Test Claim, pages 486-487 (test claim permit, Provision C.11.a.iii.), 489-490 (test claim permit, Provisions C.11.c.ii.2. and C.11.c.iii.1.-3.), 493-494 (test claim permit, Provisions C.12.a.iii.1. and 2.), 497 (test claim permit, Provisions C.12.c.ii.2. and C.12.c.iii.1.-3.), and 498 (test claim permit, Provisions C.12.d. and C.12.e.).

development.[877] As mentioned, for a regulatory fee to be constitutional, there must be a "logical nexus" between the impacts of development and the use of the fee exacted from the developer to mitigate those impacts, and that the fee must be roughly proportionate to the impacts from the development.[878] As indicated in Proposition 26, a charge must be imposed for a specific benefit conferred or privilege granted directly to the payor that is not provided to those not charged.[879] There is no evidence in the law or record that the Regional Board intended that providing a reasonable assurance analysis of future mercury and PCBs load reductions by 2040; reporting on preparing a list of watersheds where mercury control measures are or will be implemented; preparing a PCBs report; preparing a PCBs control measure implementation plan; and testing caulk and sealants in existing storm drain infrastructure and public rights-of-way for PCBs, would provide any specific benefit to a developer.

Accordingly, while the claimants in this case have regulatory fee authority under their police powers and the Mitigation Fee Act sufficient as a matter of law to cover the costs of the new state-mandated requirements related to the Green Infrastructure Plan (Section C.3.j.i.-iv.), pursuant to Government Code section 17556(d), they do not have regulatory fee authority for any of the other new activities found to be mandated by the state.

[877] Exhibit X (4), Order R2-2006-0052, Mercury TMDL, pages 10, 12 (mercury discharges from mining, bed erosion, stormwater runoff); Exhibit X (5), Order R2-2008-0012, PCBs TMDL, page 6 (discharges of PCBs from atmospheric deposition, stormwater runoff, sediment and erosion in the Bay).

[878] See *Nollan v. California Coastal Commission* (1987) 483 U.S. 825; *Dolan v. City of Tigard* (1994) 512 U.S. 374.

[879] California Constitution, article XIII C, section 1(e).

c. The permittees have constitutional and statutory authority to impose property-related stormwater fees for the reasonable assurance analysis of future mercury and PCBs load reductions (C.11.c.ii.2., C.11.c.iii.1.-3., C.12.c.ii.2, and C.12.c.iii.1.-3.); required progress report on list of watersheds where mercury control measures are or will be implemented (C.11.a.iii.); PCBs reporting (C.12.a.iii.1. and 2.); PCBs control measures implementation plan (C.12.d.); and PCBs caulk and sealant testing (C.12.e.). However, from January 1, 2016, through December 31, 2017, voter approval of these fees is required and the courts have found that when voter approval is required, Government Code section 17556(d) does not apply and there are costs mandated by the state. Beginning January 1, 2018, when property-related stormwater fees are subject only to the voter protest provisions of article XIII D, Section 6 of the California Constitution, Government Code section 17556(d) applies, there are no costs mandated by the State, and reimbursement is denied.

The claimants also have authority pursuant to their constitutional police powers[880] and other statutory authority[881] to impose property-related fees for the new state mandated activities.[882] "[P]revention of water pollution is a legitimate governmental objective, in furtherance of which the police power may be exercised."[883]

As discussed above, some permittees have adopted and imposed property-related fees to cover their costs to comply with the stormwater permits.[884]

As described below, however, stormwater property-related fees are subject to certain substantive and procedural requirements of Proposition 218, or article XIII D of the California Constitution. The claimant contends that it has no authority to increase its existing Clean Water Fund without seeking voter approval under proposition 218.[885]

It is true that property-related fees are subject to the procedural requirements of article XIII D, which until January 1, 2018, required voter approval before new or increased

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[880] California Constitution, article XI, section 7.

[881] See, e.g., Health and Safety Code section 5471 (fees for storm drainage maintenance and operation); Government Code sections 38902 (providing for sewer standby charges); 53750 et seq. (Proposition 218 Omnibus Implementation Act, describing procedures for adoption of assessments, fees and charges); 53751 (as amended in 2017, providing that fees for sewer services includes storm sewers).

[882] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 561.

[883] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 561, citing to *Freeman v. Contra Costa County Water Dist.* (1971) 18 Cal.App.3d 404, 408.

[884] Exhibit C, Regional Board's Late Comments on the Test Claim, pages 9-12.

[885] Exhibit A, Test Claim, page 34 (Written Narrative).

fees could be charged. The courts have held when voter approval of a fee is required by article XIII D, Government Code section 17556(d) does not apply and there are costs mandated by the state for new state-mandated requirements.[886]

Effective January 1, 2018, SB 231 defined "sewer" to include stormwater as an exception to the voter approval requirement in article XIII D, which makes only the voter protest provisions of article XIII D apply to property-related stormwater fees. The courts have held Government Code section 17556(d) applies to deny a claim for state mandate reimbursement when the fee authority is subject to voter protests under article XIII D, section 6(a).[887]

These issues are analyzed below.

i. The substantive and procedural requirements of articles XIII C and XIII D for property-related fees and SB 231.

Proposition 218, approved by voters in 1996, added articles XIII C and XIII D to the California Constitution and "is one of a series of voter initiatives restricting the ability of state and local governments to impose taxes and fees."[888] Article XIII C concerns voter approval for many types of local taxes other than property taxes. Article XIII D addresses property-based taxes and fees.[889] Specifically, article XIII D of the California Constitution "imposes certain substantive and procedural restrictions on taxes, assessments, fees, and charges 'assessed by any agency upon any parcel of property or upon any person as an incident of property ownership.'"[890] For example, assessments and property-related fees are subject to notice and hearing requirements, and must meet a threshold of proportionality with respect to the amount of the exaction and the purposes to which it is put. Section 4, addressing assessments, provides:

> An agency which proposes to levy an assessment shall identify all parcels which will have a special benefit conferred upon them and upon which an assessment will be imposed. The proportionate special benefit derived by each identified parcel shall be determined in relationship to the entirety of the capital cost of a public improvement, the maintenance and operation expenses of a public improvement, or the cost of the property related service being provided. No assessment shall be imposed on any parcel which exceeds the reasonable cost of the proportional special benefit conferred on that parcel. Only special benefits are assessable, and an

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[886] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 581.

[887] *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 194.

[888] *Plantier v. Ramona Municipal Water Dist.* (2019) 7 Cal.5th 372, 380.

[889] *Plantier v. Ramona Municipal Water Dist.* (2019) 7 Cal.5th 372, 381.

[890] *City of San Buenaventura v. United Water Conservation Dist.* (2017) 3 Cal.5th 1191, 1200 citing California Constitution, article XIII D, section 3.

> agency shall separate the general benefits from the special benefits conferred on a parcel. Parcels within a district that are owned or used by any agency, the State of California or the United States shall not be exempt from assessment unless the agency can demonstrate by clear and convincing evidence that those publicly owned parcels in fact receive no special benefit.[891]

Once the amount of the proposed assessment is identified, notice must be mailed to the record owner of each parcel, stating the amount chargeable to the entire district, to the parcel itself, the reason for the assessment and the basis of the calculation, and the date, time and location of the public hearing on the proposed assessment. The notice must be in the form of a ballot, and at the public hearing the agency "shall consider all protests…and tabulate the ballots." If the majority of the returned ballots oppose the assessment, the agency "shall not impose" the assessment.

Similarly, section 6 provides for a proportionality requirement with respect to property-related fees and charges and imposes the following substantive requirements:

> A fee or charge shall not be extended, imposed, or increased by any agency unless it meets all of the following requirements:
>
> (1) Revenues derived from the fee or charge shall not exceed the funds required to provide the property related service.
>
> (2) Revenues derived from the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.
>
> (3) The amount of a fee or charge imposed upon any parcel or person as an incident of property ownership shall not exceed the proportional cost of the service attributable to the parcel.
>
> (4) No fee or charge may be imposed for a service unless that service is actually used by, or immediately available to, the owner of the property in question. Fees or charges based on potential or future use of a service are not permitted. Standby charges, whether characterized as charges or assessments, shall be classified as assessments and shall not be imposed without compliance with Section 4.
>
> (5) No fee or charge may be imposed for general governmental services including, but not limited to, police, fire, ambulance or library services, where the service is available to the public at large in substantially the same manner as it is to property owners. Reliance by an agency on any parcel map, including, but not limited to, an assessor's parcel map, may be considered a significant factor in determining whether a fee or charge is imposed as an incident of property ownership for purposes of this article. In any legal action contesting the validity of a fee or charge, the

[891] California Constitution, article XIII D, section 4(a).

> burden shall be on the agency to demonstrate compliance with this article.[892]

And section 6 provides for notice and a public hearing similarly to section 4; but, unlike section 4, section 6 does not expressly require the notice to inform parcel owners of their right to protest the proposed fee, nor is the notice required to be in the form of a ballot to be returned.[893]

Section 6(c) also provides that *voter approval* is required for property-related fees and charges *other than* for water, sewer, and refuse collection services.[894] This section is discussed further below, but for charges for water, sewer, and refuse collection services, voter approval is not required to impose or increase fees. The fees may be adopted, and are subject only to the voter protest provisions of article XIII D.

In 2010, the voters approved Proposition 26 to amend article XIII C, section 1 of the California Constitution to define a "tax" subject to the voters' approval as "any levy, charge, or exaction of any kind imposed by a local government, *except*" as stated.[895] An exception to the definition of a tax includes "Assessments and property-related fees imposed in accordance with the provisions of Article XIII D."[896] Thus, as long as local government complies with the substantive and procedural requirements of article XIII D (added by Proposition 218), then the revenues received are not considered proceeds of taxes, but revenue from "nontax" property-related fees and assessments. Article XIII C also makes clear that the burden is on local government to establish that the levy is not a tax, that the fee is reasonably related to the costs to government in the aggregate, and that the fee charged to the payors is reasonably related to the benefits received or burdens created by such payors as a part of the rate setting process.[897]

Many of the limitations stated in Proposition 218 and article XIII D are not new, as most special assessment acts under prior law required notice and a public hearing, and many such acts also provided for majority protest of affected parcel owners to defeat a proposed assessment.[898] Despite the existence of such limitations before Proposition

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[892] California Constitution, article XIII D, section 6(b).

[893] Compare California Constitution, article XIII D, section 6(a)(1)-(2) with article XIII D, section 4(a).

[894] California Constitution, article XIII D, section 6(c).

[895] California Constitution, article XIII C, section 1 (amended by the voters on Nov. 2, 2010, by Prop. 26).

[896] California Constitution, article XIII C, section 1(e)(7).

[897] California Constitution, article XIII C, section 1(e).

[898] *County of Placer v. Corin* (1980) 113 Cal.App.3d 443, 454, footnote 9.

218, the court in *County of Placer v. Corin* held assessments were sufficiently distinct from taxes as to be outside the scope of articles XIII A and XIII B.[899]

After Proposition 218 came the cases of *Apartment Ass'n of Los Angeles County*, *Richmond*, and *Bighorn-Desert View*.[900] In each of these cases, the Court narrowly construed the procedural and substantive limitations of article XIII D. In *Apartment Ass'n*, the Court rejected a challenge under article XIII D, section 6 to the city's ordinance imposing fees on residential rental properties, finding the fees were not "imposed by an agency upon a parcel or upon a person as an incident of *property ownership*…"[901] The Court held Proposition 218 imposes restrictions on taxes, assessments, fees, and charges only "when they burden landowners as *landowners*."[902] The residential rental fee ordinance at issue "imposes a fee on its subjects by virtue of their ownership of a business - i.e., because they are landlords," and, thus, the fee was not subject to the requirements of article XIII D.[903]

In *Richmond*, the District imposed a "capacity charge" on applicants for new water service connections, and thus could not prospectively identify the parcels to which the charge would apply; i.e., it could not have complied with the procedural requirements of notice and hearing under article XIII D, section 4. The Court held the impossibility of compliance with section 4 was one reason to find that the capacity charge was not an assessment, within the meaning of article XIII D.[904] The Court also found the charge was to be imposed on applicants for new service, rather than users receiving service through existing connections, and that distinction is consistent with the overall intent of Proposition 218, to promote taxpayer consent.[905] Accordingly, the Court concluded: "Because these fees are imposed only on the self-selected group of water service applicants, and not on real property that the District has identified or is able to identify, and because neither fee can ever become a charge on the property itself, we conclude

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[899] *County of Placer v. Corin* (1980) 113 Cal.App.3d 443, 454, footnote 9.

[900] *Apartment Ass'n of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, *Richmond v. Shasta Community Services Dist.* (2004) 32 Cal.4th 409, and *Bighorn-Desert View Water Agency v. Verjill* (2006) 39 Cal.4th 205.

[901] California Constitution, article XIII D, sections 2(e); 3, emphasis added; *Apartment Ass'n of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, 841-842.

[902] *Apartment Ass'n of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, 842, emphasis in original.

[903] *Apartment Ass'n of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, 842.

[904] *Richmond v. Shasta Community Services Dist.* (2004) 32 Cal.4th 409, 419.

[905] *Richmond v. Shasta Community Services Dist.* (2004) 32 Cal.4th 409, 420.

that neither fee is subject to the restrictions that article XIII D imposes on property assessments and property-related fees."[906]

In *Bighorn-Desert View*, the Court rejected a local initiative designed to impose a voter approval requirement on all future rate increases for water service,[907] finding article XIII D, section 6's express exemption from voter approval for sewer, water, and refuse collection "would appear to embody the electorate's intent as to when voter-approval should be required, or not required."[908] The Court concluded:

> [U]nder section 3 of California Constitution article XIII C, local voters by initiative may reduce a public agency's water rate and other delivery charges, but…[article XIII C, section 3] does not authorize an initiative to impose a requirement of voter preapproval for future rate increases or new charges for water delivery. In other words, by exercising the initiative power voters may decrease a public water agency's fees and charges for water service, but the agency's governing board may then raise other fees or impose new fees without prior approval. Although this power-sharing arrangement has the potential for conflict, we must presume that both sides will act reasonably and in good faith, and that the political process will eventually lead to compromises that are mutually acceptable and both financially and legally sound. (See *DeVita v. County of Napa, supra,* 9 Cal.4th at pp. 792–793, 38 Cal.Rptr.2d 699, 889 P.2d 1019 ["We should not presume ... that the electorate will fail to do the legally proper thing."].) We presume local voters will give appropriate consideration and deference to a governing board's judgments about the rate structure needed to ensure a public water agency's fiscal solvency, and we assume the board, whose members are elected (see Stats.1969, ch. 1175, § 5, p. 2274, 72B West's Ann. Wat.-Appen., supra, ch. 112, p. 190), will give appropriate consideration and deference to the voters' expressed wishes for affordable water service. The notice and hearing requirements of subdivision (a) of section 6 of California Constitution article XIII D will facilitate communications between a public water agency's board and its customers, and the substantive restrictions on property-related charges in subdivision (b) of the same section should allay customers' concerns that the agency's water delivery charges are excessive.[909]

The Sixth District Court of Appeal in *Howard Jarvis Taxpayers' Ass'n v. City of Salinas* (2002) 98 Cal.App.4th 1351(*City of Salinas*) held "sewer," for purposes of the voter

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[906] *Richmond v. Shasta Community Services Dist.* (2004) 32 Cal.4th 409, 430.

[907] *Bighorn-Desert View Water Agency v. Verjill* (2006) 39 Cal.4th 205, 219.

[908] *Bighorn-Desert View Water Agency v. Verjill* (2006) 39 Cal.4th 205, 218-219.

[909] *Bighorn-Desert View Water Agency v. Verjill* (2006) 39 Cal.4th 205, 220-221.

approval exemption in article XIII D, does not include storm sewers or storm drains.[910] *City of Salinas* involved a challenge to a "storm drainage fee" imposed by the City of Salinas to fund its efforts "to reduce or eliminate pollutants contained in storm water, which was channeled into a drainage system separate from the sanitary and industrial waste systems," as required by the CWA.[911] The fee was imposed on owners of developed parcels of property, and the amount "was to be calculated according to the degree to which the property contributed to runoff to the City's drainage facilities. That contribution, in turn, would be measured by the amount of the 'impervious area' on that parcel."[912] Taxpayers challenged the imposition of the fee, arguing it was subject to voter approval under Proposition 218. The City argued the fee was exempt from the voter approval requirements because it was for "sewer" or "water" services under article XIII D, section 6(c). The court disagreed, and construed the term "sewer" narrowly, holding "sewer" referred solely to "sanitary sewerage" (i.e., the system that carries "putrescible waste" from residences and businesses), and did not encompass a sewer system designed to carry only stormwater.[913] It also held the term "water services" meant "the supply of water for personal, household, and commercial use, not a system or program that monitors storm water for pollutants, carries it away, and discharges it into the nearby creeks, river, and ocean."[914]

Thus, under the *City of Salinas* case, a local agency's charges on developed parcels to fund stormwater management were property-related fees not covered by Proposition 218's exemption for "sewer" or "water" services. Therefore, for local agencies to impose new or increased stormwater fees on property owners, an election and majority vote of the affected property owners or two-thirds of the electorate in the area was first required to affirmatively approve those fees.

That holding has since been the subject of legislation. In 2017, the Legislature enacted SB 231, which amended Government Code sections 53750 and 53751 to expressly overrule the 2002 *City of Salinas* case.[915] Government Code section 53750(k) defines the term "sewer" for purposes of article XIII D as including systems that "facilitate sewage collection, treatment, or disposition for . . . drainage purposes, including . . . drains, conduits, outlets for . . . storm waters, and any and all other works, property, or structures necessary or convenient for the collection or disposal of . . . storm waters."

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[910] *Howard Jarvis Taxpayers' Ass'n v. City of Salinas* (2002) 98 Cal.App.4th 1351, 1358-1359.

[911] *Howard Jarvis Taxpayers' Ass'n v. City of Salinas* (2002) 98 Cal.App.4th 1351, 1353.

[912] *Howard Jarvis Taxpayers' Ass'n v. City of Salinas* (2002) 98 Cal.App.4th 1351, 1353.

[913] *Howard Jarvis Taxpayers' Ass'n v. City of Salinas* (2002) 98 Cal.App.4th 1351, 1357-1358.

[914] *Howard Jarvis Taxpayers' Ass'n v. City of Salinas* (2002) 98 Cal.App.4th 1351, 1358.

[915] Government Code sections 53750; 53751 (amended, Stats. 2017, ch. 536 (SB 231)).

Government Code section 53751 explains why the Legislature thinks the *City of Salinas* case is wrong:

> The court in *Howard Jarvis Taxpayers Ass'n v. City of Salinas* (2002) 98 Cal.App.4th 1351 failed to follow long-standing principles of statutory construction by disregarding the plain meaning of the term "sewer." Courts have long held that statutory construction rules apply to initiative measures, including in cases that apply specifically to Proposition 218 (see *People v. Bustamante* (1997) 57 Cal.App.4th 693; *Keller v. Chowchilla Water Dist.* (2000) 80 Cal.App.4th 1006). When construing statutes, courts look first to the words of the statute, which should be given their usual, ordinary, and commonsense meaning (*People v. Mejia* (2012) 211 Cal.App.4th 586, 611). The purpose of utilizing the plain meaning of statutory language is to spare the courts the necessity of trying to divine the voters' intent by resorting to secondary or subjective indicators. The court in *Howard Jarvis Taxpayers Ass'n v. City of Salinas* (2002) 98 Cal.App.4th 1351 asserted its belief as to what most voters thought when voting for Proposition 218, but did not cite the voter pamphlet or other accepted sources for determining legislative intent. Instead, the court substituted its own judgment for the judgment of voters.[916]

ii. Local government permittees have the authority to impose property-related fees for the new state-mandated requirements, which meet the substantive requirements of article XIII D, section 6(b).

The claimant contends that it has no legal authority to impose fees against residents for the new requirements.[917] Its rebuttal comments also claim that SB 231 has no effect on this test claim because it became effective in 2018, and thus has no effect on the availability of fee authority during the years the test claim permit went into effect that are the basis for the Commission's approval of the test claim.[918]

The Commission disagrees with these contentions.

In the 2021 *Department of Finance* case, the Second District Court of Appeal determined that an NPDES permit condition requiring the local governments to install and maintain trash receptacles at public transit stops owned by other public entities required subvention under article XIII B, section 6 because the local agencies did not have sufficient authority to levy fees for the requirement.[919] The court held the local governments did not have authority to install equipment on another public entity's

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[916] Government Code section 53751(f).

[917] Exhibit A, Test Claim, page 34 (Written Narrative).

[918] Exhibit D, Claimant's Rebuttal Comments, page 3.

[919] *Department of Finance v. Commission on State Mandates* (2021) 59 Cal.App.5th 546, 561.

property and then charge that entity for installation and ongoing maintenance.[920] The State then contended the local governments could impose a fee on private property owners. However, the court determined not only that the State had not shown the fee would meet article XIII D's substantive requirements for property-related fees, but common sense dictated the vast majority of persons who would use and benefit from trash receptacles at transit stops are not the owners of adjacent properties but rather pedestrians, transit riders, and other members of the general public, as follows.

> The state agencies have not satisfied their burden. Not only have the state agencies failed to cite to the record or authority to support the point that a fee imposed on property owners adjacent to transit stops could satisfy the substantive constitutional requirements, but common sense dictates that the vast majority of persons who would use and benefit from trash receptacles at transit stops are not the owners of adjacent properties but rather pedestrians, transit riders, and other members of the general public; any benefit to property owners in the vicinity of bus stops would be incidental. Even if the state agencies could establish that the need for the trash receptacles is in part attributable to adjacent property owners and that the property owners would use the trash receptacles (see Cal. Const., art. XIII D, § 6, subd. (b)(3)-(4)), the placement of the receptacles at public transit stops makes the "service available to the public at large in substantially the same manner as it is to property owners" (id., art. XIII D, § 6, subd. (b)(3)). The state agencies, therefore, failed to establish that the local governments could impose on property owners adjacent to transit stops a fee that could satisfy these constitutional requirements.[921]

In 2022, the Third District Court of Appeal revisited the 2021 case and the substantive requirements in article XIII D, section 6(b) regarding property-related fees to cover the costs of street sweeping required by the NPDES permit as part of the receiving water limitations and discharge prohibitions to keep pollutants out of local waters.[922] The State acknowledged the general rule that the party claiming the applicability of an exception bears the burden of demonstrating that it applies. However, the State argued that this typical approach should not apply to the burden of showing fee authority under Government Code section 17556(d). The State argued "the inherent flexibility in permittees' police power means permittees may develop fees in any number of ways. Also, local governments like permittees have significantly more expertise and experience than the State agencies before us in designing, implementing, and

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[920] *Department of Finance v. Commission on State Mandates* (2021) 59 Cal.App.5th 546, 565-567.

[921] *Department of Finance v. Commission on State Mandates* (2021) 59 Cal.App.5th 546, 568-569.

[922] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 583-586.

defending local government fees. The State asserts that permittees' expertise means they should bear the burden on this point."[923] The court agreed, and held as follows:

> We agree the State has the burden of establishing that permittees have fee authority, but that burden does not require the State also to prove permittees as a matter of law and fact are able to promulgate a fee that satisfies article XIII D's substantive requirements. The sole issue before us is whether permittees have "the authority, i.e., the right or power, to levy fees sufficient to cover the costs of the state-mandated program." (*Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 401, 69 Cal.Rptr.2d 231.) The inquiry is an issue of law, not a question of fact. (*Ibid.*)[924]

The court further held that requiring the State to show affirmatively how permittees can create a fee that meets the substantive requirements where no fee yet exists requires the State to effectively engage in the rulemaking process itself and asks the State to do more than establish permittees have the lawful authority to enact a fee, which is the sole issue under Government Code section 17556(d).[925] The court held that unless there is a showing that a fee cannot meet the substantive requirements of article XIII D, section 6(b) as a matter of law or undisputed fact (as was the case in the 2021 *Department of Finance* case), then the finding that a fee would meet the substantive requirements is implicit in the determination that permittees have the right or power to levy a fee. The court stated the following:

> Although the court of appeal in *Los Angeles Mandates II* [i.e., the 2021 *Department of Finance* case] stated the state bore the burden to show that a fee for public trash receptacles could satisfy the substantive requirements, and that the state did not satisfy its burden, the court actually ruled that the local governments could not establish a fee that could meet the substantive requirements as a matter of law or undisputed

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[923] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 584.

[924] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 584-585.

[925] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 585. This finding is consistent with provisions in articles XIII C and XIII D, which state the burden is on the local agency to demonstrate compliance with the substantive rules when a fee exists and is legally challenged. Article XIII D, section 6(b), states that "In any legal action contesting the validity of a fee or charge, the burden shall be on the agency to demonstrate compliance with this article;" and article XIII C, section 1(e), states, "The local government bears the burden of proving by a preponderance of the evidence that a levy, charge, or other exaction is not a tax, that the amount is no more than necessary to cover the reasonable costs of the governmental activity, and that the manner in which those costs are allocated to a payor bear a fair or reasonable relationship to the payor's burdens on, or benefits received from, the governmental activity."

> fact. (*Los Angeles Mandates II, supra*, 59 Cal.App.5th at pp. 568-569, 273 Cal.Rptr.3d 619 ["common sense dictates" that fee would not meet requirements].) To require the State to show affirmatively how permittees can create a fee that meets the substantive requirements where no fee yet exists requires the State effectively to engage in the rulemaking process itself. That asks the State to do more than establish permittees have the lawful authority to enact a fee, which is the sole issue. To the extent *Los Angeles Mandates II* requires the State to prove more, we respectively disagree with its interpretation.[926]

Similarly here, there is no showing as a matter of law or fact that a fee cannot meet the substantive requirements of article XIII D, section 6(b). Although the claimant is correct that SB 231 became effective after the test claim went into effect, that only affects whether the permittees have fee authority for the entire permit term, not whether they have fee authority at all. The remaining mandate issues here regarding mercury and PCBs control measures address waters within the regulatory control of the permittees. Like street sweeping in the 2022 *Department of Finance* case, all of the new requirements are required by the permit to protect the beneficial uses of the local waters enjoyed by property owners in the San Francisco region and to prevent pollutants from causing or contributing to a violation of water quality standards.[927]

As indicated above, the courts have found that local government has the authority (i.e., the right and the power) to levy property-related fees for stormwater services under their police powers.[928] And the California Stormwater Quality Association (CASQA) has provided information to local agencies on how they can properly develop property-related stormwater fees under section XIII D of the California Constitution, including elements incorporated into a stormwater fee for various types of parcels to cover the cost of reducing stormwater pollutant loading and public education.[929] CASQA describes the typical apportionment of costs for stormwater services as follows:

> Proposition 218 requires that property-related fees "shall not exceed the proportional cost of the service attributable to the parcel."
>
> Therefore, it is essential to develop an apportionment of costs that best reflects the stormwater services provided by the municipality.

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[926] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 585.

[927] Exhibit A, Test Claim, page 385 (test claim permit, Provision C.1.).

[928] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 561.

[929] Exhibit X (13), CASQA, *Fee Study and Ordinance,* https://www.casqa.org/resources/funding-resources/creating-stormwater-utility/fee-study-and-ordinance (accessed on November 23, 2022).

> Across the U.S., most stormwater fee structures are based on the amount of impervious surface on a parcel, which is proportional to the amount of rainwater that runs off a parcel. This is a straight forward method, although impervious surface data may be difficult or expensive to obtain. Rate-setting consultants have experience working around this issue with sampling and statistical approaches, which can satisfy the Proposition 218 "proportionality" test.
>
> The majority of stormwater rate structures utilize an equivalent residential unit (ERU) as a basis for fees. ERUs estimate the average or median characteristics for a residential property. For stormwater, land use, impervious surface cover, or total size are possible metrics. Once established based on a sample of properties, each parcel in a municipality can be assigned an individual number of ERUs, which is multiplied by the base residential rate to establish the individual fee. With the ERUs assigned and totaled, the revenue requirement is divided by the total number or ERUs to establish the base residential rate.
>
> Most municipalities are bound to an NPDES permit requiring them to reduce stormwater pollutant loading as well as other objectives such as green infrastructure development and public education. These elements could be incorporated into the stormwater fees for various types of parcels.
>
> It is worth noting that Proposition 218's strict requirements on a fair apportionment method means that a municipality should create a thorough administrative record of how the rate and studies upon which it relies would need to be clearly referenced.[930]

Moreover, as noted in the Decision on the prior Test Claim in this series, several permittees have already adopted property-related fees to pay for similar requirements imposed by the NPDES permit, including fees for stormwater pollution and control.[931]

Accordingly, the Commission finds that local government permittees have the authority to impose property-related fees for the new state-mandated requirements, which meet the substantive requirements of article XIII D, section 6(b).

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[930] Exhibit X (13), CASQA, *Fee Study and Ordinance,* pages 2-3, https://www.casqa.org/resources/funding-resources/creating-stormwater-utility/fee-study-and-ordinance (accessed on November 23, 2022).

[931] Commission on State Mandates, Test Claim Decision on *California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2009-0074*, 10-TC-02, 10-TC-03, 10-TC-05, adopted January 24, 2025, pages 361-362.

iii. The courts have held Government Code section 17556(d) does not apply to deny a claim when voter approval of the property-related stormwater fee is required under article XIII D (Proposition 218). However, Government Code section 17556(d) applies to deny a claim when the voter protest provisions of article XIII D (Proposition 218) apply.

The court in *Paradise Irrigation District* (a challenge to the Commission's Decision in *Water Conservation*, 10-TC-12/12-TC-01) held, in the context of water services, the voter protest requirements of Proposition 218 do not divest local agencies of their authority to impose fees sufficient as a matter of law pursuant to Government Code section 17556(d) and, thus, when even when the voter protest provisions apply, there are no costs mandated by the state.[932] In *Paradise Irrigation District,* the Third District Court of Appeal observed:

> This case takes up where *Connell* left off, namely with the question of whether the passage of Proposition 218 undermined water and irrigation districts' authority to levy fees so that they are entitled to subvention for state-mandated regulations requiring water infrastructure upgrades. The Water and Irrigation Districts do not argue this court wrongly decided *Connell, supra*, 59 Cal.App.4th 382, 69 Cal.Rptr.2d, but only that the rule of decision was superseded by Proposition 218. Consequently, we proceed to examine the effect of Proposition 218 on the continuing applicability of *Connell*.[933]

Ultimately the court preserved and followed the rule of *Connell*, finding, based in large part on a discussion of *Bighorn-Desert View*, "Proposition 218 implemented a powersharing arrangement that does not constitute a revocation of the Water and Irrigation Districts' fee authority."[934] The court held, "[c]onsistent with the California Supreme Court's reasoning in *Bighorn*, we presume local voters will give appropriate consideration and deference to state mandated requirements relating to water conservation measures required by statute."[935] In addition, the court held "[w]e also reject the Water and Irrigation Districts' claim that, as a matter of practical reality, the majority protest procedure allows water customers to defeat the Districts' authority to

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[932] *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 189.

[933] *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 189.

[934] *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 194-195.

[935] *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 194.

levy fees."[936] However, the court said, "[w]e adhere to our holding in *Connell* that the inquiry into fee authority constitutes an issue of law rather than a question of fact."[937] The court found water service fees, being expressly exempt from the voter approval provisions of article XIII D, section 6(c), therefore do not require voter preapproval, as would new taxes.[938] In addition, the court followed and relied upon *Bighorn-Desert View*'s analysis of a power-sharing relationship between local agencies and their constituents, including the presumption "local voters will give appropriate consideration and deference to a governing board's judgments about the rate structure needed to ensure a public water agency's fiscal solvency…" and the notice and hearing requirements of article XIII D, section 6(a) "will facilitate communications between a public water agency's board and its customers, and the substantive restrictions on property-related charges in subdivision (b) of the same section should allay customers' concerns that the agency's water delivery charges are excessive."[939] Accordingly, the court found that power-sharing arrangement "does not undermine the fee authority that the districts have," and the majority protest procedure of article XIII D, section 6(a) "does not divest the Water and Irrigation Districts of their authority to levy fees."[940] The court noted statutory protest procedures already existed, and "the possibility of a protest under article XIII D, section 6 does not eviscerate the Water and Irrigation Districts' ability to raise fees to comply with the Water Conservation Act."[941] Thus, the court found Government Code section 17556(d) still applies to deny a claim when the fee authority is subject to voter protest under article XIII D, section 6(a).

Finally, the Third District Court of Appeal addressed the voter approval issue in *Department of Finance v. Commission on State Mandates* (*Discharge of Stormwater Runoff*) and found that Government Code section 17556(d) does not apply when voter approval is required and, thus, there are costs mandated by the state for new

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[936] *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 195.

[937] *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 195.

[938] *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 192.

[939] *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 192-193.

[940] *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 194.

[941] *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 194.

requirements mandated by a stormwater permit issued by the San Diego Regional Water Quality Control Board.[942] The court's reasoning is as follows:

> The State contends the reasoning in *Paradise Irrigation Dist.* applies equally here where article XIII D requires the voters to preapprove fees. It argues that as with the voter protest procedure, under article XIII D permittees' governing bodies and the voters who elected those officials share power to impose fees. The governing bodies propose the fee, and the voters must approve it. The "fact that San Diego property owners could theoretically withhold approval—just as a majority of the governing body could theoretically withhold approval to impose a fee—does not 'eviscerate' San Diego's police power; that power exists regardless of what the property owners, or the governing body, might decide about any given fee."
>
> The State's argument does not recognize a key distinction we made in *Paradise Irrigation Dist.:* water service fees were not subject to voter approval. We contrasted article XIII D's protest procedure with the voter approval requirement imposed by Proposition 218 on new taxes. Under article XIII C, no local government may impose or increase any general or special tax "unless and until that tax is submitted to the electorate and approved" by a majority of the voters for a general tax and by a two-thirds vote for a special tax. (Cal. Const., art. XIII C, § 2, subds. (b), (d).) Under article XIII D, however, water service fees do not require the consent of the voters. (Cal. Const., art. XIII D, § 6, subd. (c).) (*Paradise Irrigation Dist., supra,* 33 Cal.App.5th at p. 192, 244 Cal.Rptr.3d 769.) The implication is the voter approval requirement would deprive the districts of fee authority.
>
> Since the fees in *Paradise Irrigation Dist.* were not subject to voter approval, the protest procedure created a power sharing arrangement like that in *Bighorn* which did not deprive the districts of their fee authority. In *Bighorn*, the power-sharing arrangement existed because voters could possibly bring an initiative or referendum to reduce charges, but the validity of the fee was not contingent on the voters preapproving it. In *Paradise Irrigation Dist.*, the power-sharing arrangement existed because voters could possibly protest the water fee, but the validity of the fee was not contingent on voters preapproving the fee. The water fee was valid unless the voters successfully protested, an event the trial court in *Paradise Irrigation Dist.* correctly described as a "speculative and uncertain threat." (*Paradise Irrigation Dist., supra*, 33 Cal.App.5th at p. 184, 244 Cal.Rptr.3d 769.)

[942] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 581.

Here, a fee for stormwater drainage services is not valid unless and until the voters approve it. For property-related fees, article XIII D limits permittees' police power to proposing the fee. Like article XIII C's limitation on local governments' taxing authority, article XIII D provides that "[e]xcept for fees or charges for sewer, water, and refuse collection services, no property related fee or charge shall be imposed or increased unless and until that fee or charge is submitted and approved by a majority vote of the property owners of the property subject to the fee or charge or, at the option of the agency, by a two-thirds vote of the electorate residing in the affected area." (Cal. Const., art. XIII D, § 6, subd. (c).) The State's argument ignores the actual limitation article XIII D imposes on permittees' police power. Permittees expressly have no authority to levy a property-related fee unless and until the voters approve it. There is no power sharing arrangement.

This limitation is crucial to our analysis. The voter approval requirement is a primary reason Section 6 exists and requires subvention. As stated earlier, the purpose of Section 6 "is to preclude the state from shifting financial responsibility for carrying out governmental functions to local agencies, which are 'ill equipped' to assume increased financial responsibilities because of the taxing and spending limitations that articles XIII A and XIII B impose." (*County of San Diego v. State of California* (1997) 15 Cal.4th 68, 81, 61 Cal.Rptr.2d 134, 931 P.2d 312.) And what are those limitations? Voter approval requirements, to name some.

Articles XIII A and XIII B "work in tandem, together restricting California governments' power both to levy and to spend for public purposes." (*City of Sacramento, supra*, 50 Cal.3d at p. 59, fn. 1, 266 Cal.Rptr. 139, 785 P.2d 522.) Article XIII A prevents local governments from levying special taxes without approval by two-thirds of the voters. (Cal. Const., art. XIII A, § 4.) It also prevents local governments from levying an ad valorem tax on real and personal property. (Cal. Const., art. XIII A, § 1.) Article XIII B, adopted as the "next logical step" to article XIII A, limits the growth of appropriations made from the proceeds of taxes. (Cal. Const., art. XIII B, §§ 1, 2, 8; *City Council v. South* (1983) 146 Cal.App.3d 320, 333-334, 194 Cal.Rptr. 110.) And, as stated above, article XIII C extends the voter approval requirement to local government general taxes. (Cal. Const., art. XIII C, § 2, subd. (b).)

Subvention is required under Section 6 because these limits on local governments' taxing and spending authority, especially the voter approval requirements, deprive local governments of the authority to enact taxes to pay for new state mandates. They do not create a power-sharing arrangement with voters. They limit local government's authority to proposing a tax only, a level of authority that does not guarantee resources to pay for a new mandate. Section 6 provides them with those resources.

> Article XIII D's voter approval requirement for property-related fees operates to the same effect. Unlike the owner protest procedure at issue in Paradise Irrigation Dist., the voter approval requirement does not create a power sharing arrangement. It limits a local government's authority to proposing a fee only; again, a level of authority that does not guarantee resources to pay for a state mandate. Section 6 thus requires subvention because of Article XIII D's voter approval requirement. Contrary to the State's argument, *Paradise Irrigation Dist*. does not compel a different result.[943]

The Commission is required by law to follow the 2022 *Department of Finance* case and find that Government Code section 17556(d) does not apply to deny a claim when voter approval of the fee is required under article XIII D (Proposition 218).[944] However, pursuant to the decision in *Paradise Irrigation District*, Government Code section 17556(d) applies to deny a claim when the voter protest provisions of article XIII D (Proposition 218) apply.

iv. From January 1, 2016, through December 31, 2017, voter approval of stormwater fees is required pursuant to the decision in the City of Salinas and, thus, Government Code section 17556(d) does not apply and there are costs mandated by the state for new state-mandated requirements. Beginning January 1, 2018, when property-related fees are subject only to the voter protest provisions of article XIII D, section 6 of the California Constitution, then Government Code section 17667(d) applies, and there are no costs mandated by the state.

As indicated above, the court in *City of Salinas* held a local agency's charges on developed parcels to fund stormwater management were property-related fees that were not covered by Proposition 218's exemption for "sewer" or "water" services. Therefore, for local agencies to impose new or increased stormwater fees on property owners, an election and majority vote of the affected property owners or two thirds of the electorate in the area was first required to affirmatively approve those fees.[945] When voter approval of fees are required, then Government Code section 17556(d) does not apply and there are costs mandated by the state.[946]

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[943] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 579-581.

[944] *Auto Equity Sales, Inc. v. Superior Court of Santa Clara County* (1962) 57 Cal.2d 450, 455 ("Under the doctrine of *stare decisis*, all tribunals exercising inferior jurisdiction are required to follow decisions of courts exercising superior jurisdiction.").

[945] *Howard Jarvis Taxpayers' Ass'n v. City of Salinas* (2002) 98 Cal.App.4th 1351, 1358-1359.

[946] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 579-581.

However, Government Code sections 53750 and 53751 superseded the holding in *City of Salinas* and defined "sewer" to include stormwater sewers subject only to the voter protest provisions of article XIII D.[947] These provisions became effective January 1, 2018.

The Commission is required to presume statutes are constitutional. Article III, section 3.5 of the California Constitution prohibits administrative agencies, such as the Commission, from refusing to enforce a statute or from declaring a statute unconstitutional. Article III, section 3.5 states, in relevant part, the following:

> An administrative agency, including an administrative agency created by the Constitution or an initiative statute, has no power:
>
> (a) To declare a statute unenforceable, or refuse to enforce a statute, on the basis of being unconstitutional unless an appellate court has made a determination that such statute is unconstitutional;
>
> (b) To declare a statute unconstitutional;

The Commission also finds, pursuant to the decision of the Third District Court of Appeal, Government Code sections 53750 and 53751, absent a clear and unequivocal statement to the contrary, operate prospectively beginning January 1, 2018.[948]

Accordingly, the claimants do not have fee authority sufficient as a matter of law to cover the costs of the new state-mandated activities from December 1, 2009, through December 31, 2017, when voter approval of stormwater fees is required, and there are costs mandated by the state during that time. However, reimbursement is not required to the extent the claimants received fee revenue and used that revenue to pay for the state-mandated activities, or used any other revenues, including but not limited to grant funding, assessment revenue, and federal funds, that are *not* the claimants' proceeds of taxes.[949]

Pursuant to Government Code sections 53750 and 53751 and the decision in *Paradise Irrigation District*, there are no costs mandated by the state beginning January 1, 2018.

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[947] Government Code sections 53750; 53751 (amended, Stats. 2017, ch. 536 (SB 231)).

[948] *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535, 573-577.

[949] *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487 (Reimbursement is required only when "the costs in question can be recovered solely from tax revenues."). See also, *County of Sonoma v. Commission on State Mandates* (2000) 84 Cal.App.4th 1264, 1283; *County of Los Angeles v. Commission on State Mandates* (2003) 110 Cal.App.4th 1176, 1189; *Bell Community Redevelopment Agency v. Woosley* (1985) 169 Cal.App.3d 24, 32; *Redevelopment Agency v. Commission on State Mandates* (1997) 55 Cal.App.4th 976, 986-987; *City of El Monte v. Commission on State Mandates* (2000) 83 Cal.App.4th 266, 281.

V. Conclusion

Based on the foregoing analysis, the Commission partially approves this Test Claim and finds that the test claim permit imposes a reimbursable state-mandated program from January 1, 2016 through December 31, 2017, only, for the following activities:

1. Reasonable Assurance Analysis (Provisions C.11.c.ii.2., C.11.c.iii.1.-3., C.12.c.ii.2., and C.12.c.iii.1.-3.):
    - Prepare a reasonable assurance analysis of future mercury and PCBs load reductions by doing the following:
        - Quantify the relationship between areal extent of Green Infrastructure implementation and mercury and PCBs load reductions, taking into consideration the scale of contamination of the treated area as well as the pollutant removal effectiveness of likely green infrastructure strategies.[950]
        - Estimate the amount and characteristics of land area that will be treated through Green Infrastructure by 2020, 2030, and 2040.[951]
        - Estimate the amount of mercury/PCBs load reductions that will result from Green Infrastructure implementation by 2020, 2030, and 2040.[952]
        - Quantitatively demonstrate that mercury load reductions of at least 10 kg/yr and PCBs load reductions of at least 3 kg/yr will be realized by 2040 through implementation of Green Infrastructure Projects.[953]
        - Ensure that the calculation methods, models, model inputs, and modeling assumptions used to fulfill provisions C.11.c.ii.2.a.-d. and C.12.c.ii.2.a.-d. above have been validated through a peer review process.[954]
    - Submit in the 2018 Annual Report as part of the reporting required for Provisions C.11.b.iii.2. and C.12.b.iii.3., the quantitative relationship between Green Infrastructure implementation and mercury and PCBs load reductions.

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[950] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.a., C.12.c.ii.2.a.).

[951] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.b., C.12.c.ii.2.b.).

[952] Exhibit A, Test Claim, pages 489, 497 (test claim permit, Provisions C.11.c.ii.2.c., C.12.c.ii.2.c.).

[953] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.ii.2.d., C.12.c.ii.2.d.).

[954] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.ii.2.e., C.12.c.ii.2.e.).

This submittal shall include all data used and a full description of the models and model inputs relied on to establish this relationship.[955]

- Submit in the 2020 Annual Report an estimate of the amount and characteristics of land area that will be treated through Green Infrastructure implementation by 2020, 2030, and 2040. This submittal shall include all data used and a full description of the models and model inputs relied on to generate this estimate.[956]
- Submit in the 2020 Annual Report a reasonable assurance analysis to demonstrate quantitatively that mercury load reductions of at least 10 kg/yr and PCBs load reductions of at least 3 kg/yr will be realized by 2040 through the implementation of Green Infrastructure Projects. This submittal shall include all data used and a full description of models and model inputs relied on to make the demonstration and documentation of peer review of the reasonable assurance analysis.[957]

2. Progress Report on List of Watersheds and Management Areas Where Mercury Control Measures are or will be Implemented (Provision C.11.a.iii.1.).
    - By April 1, 2016, report on progress towards developing a list of the watersheds and portions of watersheds (management areas) where mercury control measures are currently being implemented, and those in which control measures will be implemented during the permit term, as well as the monitoring data and other information used to select these watersheds and management areas.[958]
3. PCBs Reporting (Provisions C.12.a.iii.1. and C.12.a.iii.2.):
    - By April 1, 2016, report on progress towards developing a list of the watersheds and portions of watersheds (management areas) where PCBs control measures are currently being implemented, and those in which control measures will be implemented during the permit term, as well as the monitoring data and other information used to select these watersheds and management areas.[959]
    - In the 2016 Annual Report, include the following information:

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[955] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.1., C.12.c.iii.1.).

[956] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.2., C.12.c.iii.2.).

[957] Exhibit A, Test Claim, pages 490, 497 (test claim permit, Provisions C.11.c.iii.3., C.12.c.iii.3.).

[958] Exhibit A, Test Claim, page 486 (test claim permit, Provision C.11.a.iii.1.).

[959] Exhibit A, Test Claim, page 492 (test claim permit, Provision C.12.a.iii.1.).

- A cumulative listing of all potentially PCB-contaminated sites permittees have discovered and referred to the Water Board to date, with a brief summary description of each site and where to obtain further information.
- For each structural control and non-structural BMP, interim implementation progress milestones (e.g., construction milestones for structural controls or other relevant implementation milestones for structural controls and non-structural BMPs) and a schedule for milestone achievement.
- Clear statements of the roles and responsibilities of each participating permittee for implementation of pollution prevention or control measures for PCBs.[960]

4. Prepare PCBs control measures implementation plan, schedule, and reasonable assurance analysis to achieve the PCBs TMDL wasteload allocations by 2030 (Provision C.12.d.):
    - Prepare a PCBs control measures implementation plan, which must identify all technically and economically feasible PCBs control measures to be implemented (including green infrastructure projects).[961]
    - Include a schedule for PCBs control measure implementation according to which these technically and economically feasible PCBs control measures will be fully implemented by 2030.[962]
    - Provide an evaluation and quantification of the PCBs load reduction of such measures as well as an evaluation of costs, control measure efficiency and significant environmental impacts resulting from their implementation.[963]
    - Prepare a reasonable assurance analysis demonstrating that sufficient control measures will be implemented to attain the PCBs TMDL wasteload allocations by 2030.[964]
    - Submit the plan and schedule required by Provision C.12.d. in the 2020 Annual Report.[965]
5. Evaluate the presence of PCBs in caulks/sealants in storm drain or roadway infrastructure in public rights-of-way (Provision C.12.e.):

[960] Exhibit A, Test Claim, pages 493-494 (test claim permit, Provision C.12.a.iii.2.).

[961] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.1.).

[962] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.2.).

[963] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.ii.3.).

[964] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.i.).

[965] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.d.iii.).

- Collect at least 20 samples from throughout the permit-area of the caulks and sealants used in storm drains or roadway infrastructure in public rights-of-way.[966]
- Analyze the samples taken for PCBs in such a way that is able to detect a minimum PCB concentration of 200 parts per billion.[967]
- Report on the results of this investigation, including all data gathered, no later than the 2018 Annual Report.[968]

Reimbursement for these activities is denied beginning January 1, 2018, because the claimants have fee authority sufficient as a matter of law to cover the costs of these activities pursuant to Government Code section 17556(d) and, thus, there are no costs mandated by the state.

In addition, reimbursement for these mandated activities from any source, including but not limited to, state and federal funds, any service charge, fees, or assessments to offset all or part of the costs of this program, and any other funds that are not the claimant's proceeds of taxes that are used to pay for the mandated activities, shall be identified and deducted from any claim submitted for reimbursement.

All other sections, activities, and costs pled in the Test Claim are denied.

[966] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.ii.).

[967] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.ii.).

[968] Exhibit A, Test Claim, page 498 (test claim permit, Provision C.12.e.iii.).

DECLARATION OF SERVICE BY EMAIL

I, the undersigned, declare as follows:

I am a resident of the County of Sacramento and I am over the age of 18 years, and not a party to the within action. My place of employment is 980 Ninth Street, Suite 300, Sacramento, California 95814.

On December 23, 2025, I served the:

- **Current Mailing List dated December 19, 2025**
- **Draft Proposed Decision, Schedule for Comments, and Notice of Hearing issued December 23, 2025**

  California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, 16-TC-03
  California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, Provisions C.3.j, C.8., C.10.a., C.10.b., C.11.a., C.11.b., C.11.c., C.12.a., C.12.c., C.12.d., and C.12.e, Adopted on November 19, 2015 and Effective on January 1, 2016
  Union City, Claimant

by making it available on the Commission's website and providing notice of how to locate it to the email addresses provided on the attached mailing list.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this declaration was executed on December 23, 2025 at Sacramento, California.

Jill Magee

Jill Magee
Commission on State Mandates
980 Ninth Street, Suite 300
Sacramento, CA 95814
(916) 323-3562

COMMISSION ON STATE MANDATES

Mailing List

Last Updated: 12/19/25

Claim Number: 16-TC-03

Matter: California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049

Claimant: City of Union City

TO ALL PARTIES, INTERESTED PARTIES, AND INTERESTED PERSONS:

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Rachelle Anema, Assistant Auditor-Controller, *County of Los Angeles*
Accounting Division, 500 W. Temple Street, Los Angeles, CA 90012
Phone: (213) 974-8321
RANEMA@auditor.lacounty.gov

Lili Apgar, Specialist, *State Controller's Office*
Local Reimbursements Section, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 324-0254
lapgar@sco.ca.gov

Socorro Aquino, *State Controller's Office*
Division of Audits, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-7522
SAquino@sco.ca.gov

Aaron Avery, Legislative Representative, *California Special Districts Association*
1112 I Street Bridge, Suite 200, Sacramento, CA 95814
Phone: (916) 442-7887
Aarona@csda.net

Anna Barich, Attorney, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
Anna.Barich@csm.ca.gov

David Bass, Vice Mayor, *CIty of Rocklin*
3970 Rocklin Road, Rocklin, CA 95677
Phone: (916) 663-8504
David.Bass@rocklin.ca.us

Ginni Bella Navarre, Deputy Legislative Analyst, *Legislative Analyst's Office*
925 L Street, Suite 1000, Sacramento, CA 95814
Phone: (916) 319-8342
Ginni.Bella@lao.ca.gov

Richard Boon, Chief of Watershed Protection Division, *County of Riverside Flood Control Disrict*
1995 Market Street, Riverside, CA 92501
Phone: (951) 955-1273
rboon@rivco.org

Jonathan Borrego, City Manager, *City of Oceanside*
300 North Coast Highway, Oceanside, CA 92054
Phone: (760) 435-3065
citymanager@oceansideca.org

Allan Burdick,
7525 Myrtle Vista Avenue, Sacramento, CA 95831
Phone: (916) 203-3608
allanburdick@gmail.com

Guy Burdick, Consultant, *MGT Consulting*
2251 Harvard Street, Suite 134, Sacramento, CA 95815
Phone: (916) 833-7775
gburdick@mgtconsulting.com

Rica Mae Cabigas, Chief Accountant, *Auditor-Controller*
Accounting Division, 500 West Temple Street, Los Angeles, CA 90012
Phone: (213) 974-8309
rcabigas@auditor.lacounty.gov

Evelyn Calderon-Yee, Bureau Chief, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 324-5919
ECalderonYee@sco.ca.gov

Sheri Chapman, General Counsel, *League of California Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8267
schapman@calcities.org

Ali Chemkhi, Senior Supervising Accountant/Auditor, *County of San Bernardino*
Office of Auditor-Controller, 268 West Hospitality Lane, Fourth Floor, San Bernardino, CA 92415-0018
Phone: (909) 382-7035
ali.chemkhi@sbcountyatc.gov

Annette Chinn, *Cost Recovery Systems, Inc.*
705-2 East Bidwell Street, #294, Folsom, CA 95630
Phone: (916) 939-7901
achinncrs@aol.com

Carolyn Chu, Senior Fiscal and Policy Analyst, *Legislative Analyst's Office*
925 L Street, Suite 1000, Sacramento, CA 95814
Phone: (916) 319-8326
Carolyn.Chu@lao.ca.gov

Michael Coleman, *Coleman Advisory Services*
2217 Isle Royale Lane, Davis, CA 95616
Phone: (530) 758-3952
coleman@muni1.com

Adam Cripps, Interim Finance Manager, *Town of Apple Valley*
14955 Dale Evans Parkway, Apple Valley, CA 92307
Phone: (760) 240-7000
acripps@applevalley.org

Nicole Denow, Chief Deputy City Attorney, *City of San Diego*
Environment Section, 1200 Third Avenue, Suite 1100, San Diego, CA 92101
Phone: (619) 533-6173
NDenow@sandiego.gov

Kevin Fisher, Assistant City Attorney, *City of San Jose*
Environmental Services, 200 East Santa Clara Street, 16th Floor, San Jose, CA 95113
Phone: (408) 535-1987
kevin.fisher@sanjoseca.gov

Jennifer Fordyce, Assistant Chief Counsel, *State Water Resources Control Board*
Office of Chief Counsel, 1001 I Street, 22nd floor, Sacramento, CA 95814
Phone: (916) 324-6682
Jennifer.Fordyce@waterboards.ca.gov

Nora Frimann, City Attorney, *City of San Jose*
200 East Santa Clara Street, 16th Floor, San Jose, CA 95113
Phone: (408) 535-1900
nora.frimann@sanjoseca.gov

Juliana Gmur, Executive Director, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
juliana.gmur@csm.ca.gov

Viviana Heger, Special Counsel, *Duane Morris LLP*
865 Figueroa Street, Los Angeles, CA 90017-5450
Phone: (213) 689-7400
VHeger@duanemorris.com

Chris Hill, Principal Program Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, 8th Floor, Sacramento, CA 95814
Phone: (916) 445-3274
Chris.Hill@dof.ca.gov

Tiffany Hoang, Associate Accounting Analyst, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-1127
THoang@sco.ca.gov

Ken Howell, Senior Management Auditor, *State Controller's Office*
Audits, Compliance Audits Bureau, 3301 C Street, Suite 725A, Sacramento, CA 95816
Phone: (916) 323-2368
KHowell@sco.ca.gov

Jason Jennings, Director, *Maximus Consulting*
Financial Services, 808 Moorefield Park Drive, Suite 205, Richmond, VA 23236

Phone: (804) 323-3535
SB90@maximus.com

Angelo Joseph, Supervisor, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-0706
AJoseph@sco.ca.gov

Emma Jungwirth, Senior Legislative Advocate, *California State Association of Counties (CSAC)*
1100 K Street, Ste 101, Sacramento, CA 95814
Phone: (916) 650-8115
ejungwirth@counties.org

Anne Kato, Acting Chief, *State Controller's Office*
Local Government Programs and Services Division, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 322-9891
akato@sco.ca.gov

Anita Kerezsi, *AK & Company*
2425 Golden Hill Road, Suite 106, Paso Robles, CA 93446
Phone: (805) 239-7994
akcompanysb90@gmail.com

Joanne Kessler, Fiscal Specialist, *City of Newport Beach*
Revenue Division, 100 Civic Center Drive , Newport Beach, CA 90266
Phone: (949) 644-3199
jkessler@newportbeachca.gov

Lisa Kurokawa, Bureau Chief for Audits, *State Controller's Office*
Compliance Audits Bureau, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 327-3138
lkurokawa@sco.ca.gov

Michael Lauffer, Chief Counsel, *State Water Resources Control Board*
1001 I Street, 22nd Floor, Sacramento, CA 95814-2828
Phone: (916) 341-5183
michael.lauffer@waterboards.ca.gov

Government Law Intake, *Department of Justice*
Attorney General's Office, 1300 I Street, Suite 125, PO Box 944255, Sacramento, CA 94244-2550
Phone: (916) 210-6046
governmentlawintake@doj.ca.gov

Fernando Lemus, Principal Accountant - Auditor, *County of Los Angeles*
Auditor-Controller's Office, 500 West Temple Street, Room 603, Los Angeles, CA 90012
Phone: (213) 974-0324
flemus@auditor.lacounty.gov

Erika Li, Chief Deputy Director, *Department of Finance*
915 L Street, 10th Floor, Sacramento, CA 95814
Phone: (916) 445-3274
erika.li@dof.ca.gov

Keith Lichten, Division Chief, *San Francisco Bay Regional Water Quality Control Board*
Watershed Management, 1515 Clay Street, Suite 1400, Oakland, CA 94612

Phone: (510) 622-2380
klichten@waterboards.ca.gov

Kenneth Louie, Chief Counsel , *Department of Finance*
1021 O. Street, Suite 3110, Sacramento, CA 95814
Phone: (916) 322-0971
Kenny.Louie@dof.ca.gov

Selina Louie, Water Resource Control Engineer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2383
SLouie@waterboards.ca.gov

Everett Luc, Accounting Administrator I, Specialist, *State Controller's Office*
3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-0766
ELuc@sco.ca.gov

Jill Magee, Program Analyst, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
Jill.Magee@csm.ca.gov

Jennifer Maguire, City Manager, *City of San Jose*
200 East Santa Clara Street, San Jose, CA 95113
Phone: (408) 535-8111
Jennifer.Maguire@sanjoseca.gov

Joan Malloy, City Manager, *Union City*
Claimant Contact
34009 Alvarado-Niles Road, Union City, CA 94587
Phone: (510) 675-5344
joanm@unioncity.org

Darryl Mar, Manager, *State Controller's Office*
Local Reimbursements Section, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-0706
DMar@sco.ca.gov

Joseph Martinez, Acting Lead, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2304
Joseph.Martinez@Waterboards.ca.gov

Michelle Mendoza, *MAXIMUS*
17310 Red Hill Avenue, Suite 340, Irvine, CA 95403
Phone: (949) 440-0845
michellemendoza@maximus.com

Joseph Monical, Water Resource Control Engineer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2304
Joseph.Monical@Waterboards.ca.gov

Thomas Mumley, Assistant Executive Officer, *San Francisco Bay Regional Water Quality Control Board*

1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2395
thomas.mumley@waterboards.ca.gov

Marilyn Munoz, Senior Staff Counsel, *Department of Finance*
915 L Street, Sacramento, CA 95814
Phone: (916) 445-8918
Marilyn.Munoz@dof.ca.gov

Kaleb Neufeld, Assistant Controller, *City of Fresno*
2600 Fresno Street, Fresno, CA 93721
Phone: (559) 621-2489
Kaleb.Neufeld@fresno.gov

Gregory Newmark, Partner, *Duane Morris, LLP*
Claimant Representative
865 South Figueroa Street, Suite 3100, Los Angeles , CA 90017-5450
Phone: (213) 689-7434
gnewmark@duanemorris.com

Andy Nichols, *Nichols Consulting*
1857 44th Street, Sacramento, CA 95819
Phone: (916) 455-3939
andy@nichols-consulting.com

Adriana Nunez, Staff Counsel, *State Water Resources Control Board*
Los Angeles Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 322-3313
Adriana.Nunez@waterboards.ca.gov

Erika Opp, Administrative Analyst, *City of St. Helena*
City Clerk, 1480 Main Street, St. Helena, CA 94574
Phone: (707) 968-2743
eopp@cityofsthelena.gov

Eric Oppenheimer, Executive Director, *State Water Resources Control Board*
1001 I Street, 22nd Floor, Sacramento, CA 95814-2828
Phone: (916) 341-5615
eric.oppenheimer@waterboards.ca.gov

Arthur Palkowitz, *Law Offices of Arthur M. Palkowitz*
12807 Calle de la Siena, San Diego, CA 92130
Phone: (858) 259-1055
law@artpalk.onmicrosoft.com

Kirsten Pangilinan, Specialist, *State Controller's Office*
Local Reimbursements Section, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 322-2446
KPangilinan@sco.ca.gov

Johnnie Pina, Legislative Policy Analyst, *League of Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8214
jpina@cacities.org

Trevor Power, Accounting Manager, *City of Newport Beach*
100 Civic Center Drive, Newport Beach , CA 92660

Phone: (949) 644-3085
tpower@newportbeachca.gov

Roberta Raper, Director of Finance, *City of West Sacramento*
1110 West Capitol Ave, West Sacramento, CA 95691
Phone: (916) 617-4509
robertar@cityofwestsacramento.org

Chad Rinde, Director of Finance, *County of Sacramento*
700 H Street, Room 3650, Sacramento, CA 95814
Phone: (916) 874-7248
RindeC@SacCounty.gov

Teresita Sablan, *State Water Resources Control Board*
Santa Ana Regional Water Quality Control Board and San Francisco Bay Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 341-5174
Teresita.Sablan@waterboards.ca.gov

Cindy Sconce, Director, *Government Consulting Partners*
5016 Brower Court, Granite Bay, CA 95746
Phone: (916) 276-8807
cindysconcegcp@gmail.com

Carla Shelton, Senior Legal Analyst, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
carla.shelton@csm.ca.gov

Camille Shelton, Chief Legal Counsel, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
camille.shelton@csm.ca.gov

Paul Steenhausen, Principal Fiscal and Policy Analyst, *Legislative Analyst's Office*
925 L Street, Suite 1000, , Sacramento, CA 95814
Phone: (916) 319-8303
Paul.Steenhausen@lao.ca.gov

Julie Testa, Vice Mayor, *City of Pleasanton*
123 Main Street PO Box520, Pleasanton, CA 94566
Phone: (925) 872-6517
Jtesta@cityofpleasantonca.gov

Jolene Tollenaar, *MGT Consulting Group*
2251 Harvard Street, Suite 134, Sacramento, CA 95815
Phone: (916) 243-8913
jolenetollenaar@gmail.com

Robert Torrez, Interim Chief Financial Officer, *City of Huntington Beach*
2000 Main Street, Huntington Beach, CA 92648
Phone: (714) 536-5630
robert.torrez@surfcity-hb.org

Jessica Uzarski, Consultant, *Senate Budget and Fiscal Review Committee*
1020 N Street, Room 502, Sacramento, CA 95814
Phone: (916) 651-4103
Jessica.Uzarski@sen.ca.gov

Alejandra Villalobos, Management Services Manager, *County of San Bernardino*
Office of Auditor-Controller, 222 West Hospitality Lane, Forth Floor, San Bernardino, CA 92415
Phone: (909) 382-3191
alejandra.villalobos@sbcountyatc.gov

Renee Wellhouse, *David Wellhouse & Associates, Inc.*
3609 Bradshaw Road, H-382, Sacramento, CA 95927
Phone: (916) 797-4883
dwa-renee@surewest.net

Adam Whelen, Director of Public Works, *City of Anderson*
1887 Howard St., Anderson, CA 96007
Phone: (530) 378-6640
awhelen@ci.anderson.ca.us

Eileen White, Executive Officer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2300
Eileen.White@waterboards.ca.gov

Yuri Won, Attorney, Office of Chief Counsel, *State Water Resources Control Board*
San Francisco Bay Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 327-4439
Yuri.Won@waterboards.ca.gov

Arthur Wylene, General Counsel, *Rural County Representatives of California (RCRC)*
1215 K Street, Suite 1650, Sacramento, CA 95814
Phone: (916) 447-4806
awylene@rcrcnet.org

Elisa Wynne, Staff Director, *Senate Budget & Fiscal Review Committee*
California State Senate, State Capitol Room 5019, Sacramento, CA 95814
Phone: (916) 651-4103
elisa.wynne@sen.ca.gov

Kaily Yap, Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, Sacramento, CA 95814
Phone: (916) 445-3274
Kaily.Yap@dof.ca.gov

Siew-Chin Yeong, Director of Public Works, *City of Pleasonton*
3333 Busch Road, Pleasonton, CA 94566
Phone: (925) 931-5506
syeong@cityofpleasantonca.gov

Traci Young, IS Project Director, *City and County of San Francisco*
San Francisco Public Utilities Commission (SFPUC), 525 Golden Gate Ave, San Francisco, CA 94102
Phone: (415) 653-2583
tmyoung@sfwater.org

Stephanie Yu, Assistant Chief Counsel, *State Water Resources Control Board*
Office of Chief Counsel, 1001 I Street, Sacramento, CA 95814
Phone: (916) 341-5157
stephanie.yu@waterboards.ca.gov

Aly Zimmermann, CIty Manager, *City of Rocklin*
3970 Rocklin Road, Rocklin, CA 95677
Phone: (916) 625-5585
alyz@rocklin.ca.us

Helmholst Zinser-Watkins, Associate Governmental Program Analyst, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 324-7876
HZinser-watkins@sco.ca.gov

NEW YORK
LONDON
SINGAPORE
PHILADELPHIA
CHICAGO
WASHINGTON, DC
SAN FRANCISCO
SILICON VALLEY
SAN DIEGO
LOS ANGELES
BOSTON
HOUSTON
DALLAS
FORT WORTH
AUSTIN

DuaneMorris®

FIRM and AFFILIATE OFFICES

VIVIANA L. HEGER
SPECIAL COUNSEL
DIRECT DIAL: +1 213 689 7452
PERSONAL FAX: +1 213 403 5668
E-MAIL: VHeger@duanemorris.com

www.duanemorris.com

HANOI
HO CHI MINH CITY
SHANGHAI
ATLANTA
BALTIMORE
WILMINGTON
MIAMI
BOCA RATON
PITTSBURGH
NORTH JERSEY
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Exhibit F

July 13, 2026

Commission on State Mandates
Filed Date
07/13/2026

Via Drop Box

Juliana Gmur
Executive Director
Commission on State Mandates
980 Ninth Street, Suite 300
Sacramento, CA 95814

Re: Comments on Draft Proposed Decision, Test Claim 16-TC-03 (Municipal Regional Stormwater Permit, Order No. R2-2015-0049)

Dear Ms. Gmur:

Our office represents the Alameda Countywide Clean Water Program and its members as well as claimant Union City, who have incurred costs related to the San Francisco Bay Regional Water Quality Control Board's municipal regional stormwater permit, Order No. R2-2015-0049, which is the second municipal regional permit ("MRP 2") that regulates the discharge of stormwater runoff from the municipal separate storm sewer systems ("MS4s") within the jurisdiction of Bay Area regional stormwater programs.

We submit this letter in response to the Draft Proposed Decision ("DPD") issued by Commission staff on December 23, 2025, in connection with Test Claim 16-TC-03. Union City submitted this test claim with the Commission on State Mandates asserting that the Second Municipal Regional Stormwater Permit ("MRP 2"), Order No. R2-2015-0049, imposed new state-mandated programs and higher levels of service triggering the constitutional duty of reimbursement under Article XIII B, Section 6 of the California Constitution. Commission staff recommended denial of most of Union City's claims in the DPD. Union City respectfully objects to that recommendation and submits the following comments.

The Municipal Claimants object to and disagree with the portions of the Proposed Decision that improperly seek to address an issue that is not currently before the

Commission— the possible impact of Senate Bill 231 ("SB 231"). The Municipal Claimants contend that the Commission's analysis regarding SB 231 is inconsistent with *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535 and City of Salinas (2002) 98 Cal.App.4th 1351. Although it is irrelevant to this proceeding and should not be addressed at all by the Commission here, the Municipal Claimants reserve all rights regarding the applicability of SB 231 and its constitutionality. The Municipal Claimants believe that even if SB 231 were applicable, which it is not, the appropriate approach for the Commission to take regarding SB 231 would be to wait until a court of competent jurisdiction resolves the constitutionality of SB 231 in the context of an actual fee enacted under its provisions. Since SB 231 is irrelevant here, the Commission should just delete all references to it in the Proposed Decision.

We also object to and disagree with the following:

- The DPD concluded that implementation of the Green Infrastructure Plan (MRP 2 § C.3.j) through early public projects was not a mandate imposed by the state through legal or practical compulsion. (DPD at pp. 104–105.) We disagree. The public projects required under § 3.j were not voluntary; the permit's regulatory framework rendered compliance legally and practically compulsory, leaving permittees no genuine choice but to undertake these projects.
- The DPD held that the green infrastructure requirements to achieve TMDLs (§§ C.11.c and C.12.c) are not new because similar provisions existed in the prior permit, including as part of the receiving water limitations. (DPD at p. 115.) However, the U.S. Supreme Court has since invalidated the use of receiving water limitations under federal law in *San Francisco v. EPA*, 145 S. Ct. 704 (2025), undermining the Commission's rationale. Similarly, the trash provisions (§§ C.10.a and C.10.b) are also new contrary to the DPD characterization of them as continuations of prior permit obligations (DPD at pp. 69–77).
- The Commission incorrectly determined that the green infrastructure and trash requirements are federally mandated. Under *Department of Finance v. Commission on State Mandates* (2017) 18 Cal.App.5th 661, when federal law leaves states discretion in determining specific implementing requirements, as here, the state's exercise of that discretion creates a reimbursable state mandate.

In addition to the foregoing, we also hereby incorporate our comments from May 29, 2018 as they relate to the denials in the DPD. Nothing in this submission shall be construed as a waiver of any argument, claim, or right available to Union City with respect to the test claim or any related proceedings

Regards,

DUANE MORRIS LLP

Viviana L. Heger
Special Counsel

VLH
cc: Service list dated May 4, 2026 (*via* Commission Drop Box, CSM Dropbox)

Marilyn Munoz Dept. of Finance Senior Staff Counsel	Marilyn.Munoz@dof.ca.gov
Teresita J. Sablan, Attorney IV San Francisco Bay Regional Board and State Water Board	Teresita.Sablan@waterboards.ca.gov
Darryl Mar, Manager State Controller's Office	DMar@sco.ca.gov
Gary Grimm Sandy Mathews Alameda Countywide Clean Water Program	ggrimm@garygrimmlaw.com sandym@lwa.com
Kris Kokotaylo, City Attorney City of Union City	kristopher.kokotaylo@redwoodpubliclaw.com

DECLARATION OF SERVICE BY EMAIL

I, the undersigned, declare as follows:

I am a resident of the County of Sacramento and I am over the age of 18 years, and not a party to the within action. My place of employment is 980 Ninth Street, Suite 300, Sacramento, California 95814.

On July 14, 2026, I served the:

- **Current Mailing List dated July 13, 2026**
- **Claimant's Comments on the Draft Proposed Decision filed July 13, 2026**
- **Finance's Comments on the Draft Proposed Decision filed July 13, 2026**
- **Water Boards' Comments on the Draft Proposed Decision filed July 13, 2026**

  California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, 16-TC-03
  California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, Provisions C.3.j, C.8., C.10.a., C.10.b., C.11.a., C.11.b., C.11.c., C.12.a., C.12.c., C.12.d., and C.12.e, Adopted on November 19, 2015 and Effective on January 1, 2016
  City of Union City, Claimant

by making it available on the Commission's website and providing notice of how to locate it to the email addresses provided on the attached mailing list.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this declaration was executed on July 14, 2026 at Sacramento, California.



David Chavez
Commission on State Mandates
980 Ninth Street, Suite 300
Sacramento, CA 95814
(916) 323-3562

COMMISSION ON STATE MANDATES

Mailing List

Last Updated: 7/13/26

Claim Number: 16-TC-03

Matter: California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049

Claimant: City of Union City

TO ALL PARTIES, INTERESTED PARTIES, AND INTERESTED PERSONS:

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Nicholas Ajluni, Assistant Director of Utilities and Environmental Services, *City of Pleasanton*
PO Box 520, Pleasanton, CA 04566
Phone: (925) 931-5523
najluni@cityofpleasantonca.gov

Rachelle Anema, Assistant Auditor-Controller, *County of Los Angeles*
Accounting Division, 500 W. Temple Street, Los Angeles, CA 90012
Phone: (213) 974-8321
RANEMA@auditor.lacounty.gov

Lili Apgar, Specialist, *State Controller's Office*
Local Reimbursements Section, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 324-0254
lapgar@sco.ca.gov

Socorro Aquino, *State Controller's Office*
Division of Audits, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-7522
SAquino@sco.ca.gov

Aaron Avery, Legislative Representative, *California Special Districts Association*
1112 I Street Bridge, Suite 200, Sacramento, CA 95814
Phone: (916) 442-7887
Aarona@csda.net

Anna Barich, Attorney, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
Anna.Barich@csm.ca.gov

David Bass, Vice Mayor, *City of Rocklin*
3970 Rocklin Road, Rocklin, CA 95677
Phone: (916) 663-8504
David.Bass@rocklin.ca.us

Ginni Bella Navarre, Deputy Legislative Analyst, *Legislative Analyst's Office*
925 L Street, Suite 1000, Sacramento, CA 95814
Phone: (916) 319-8342
Ginni.Bella@lao.ca.gov

Jonathan Borrego, City Manager, *City of Oceanside*
300 North Coast Highway, Oceanside, CA 92054
Phone: (760) 435-3065
citymanager@oceansideca.org

Allan Burdick,
7525 Myrtle Vista Avenue, Sacramento, CA 95831
Phone: (916) 203-3608
allanburdick@gmail.com

Guy Burdick, Consultant, *MGT Consulting*
2251 Harvard Street, Suite 134, Sacramento, CA 95815
Phone: (916) 833-7775
gburdick@mgtconsulting.com

Rica Mae Cabigas, Chief Accountant, *Auditor-Controller*
Accounting Division, 500 West Temple Street, Los Angeles, CA 90012
Phone: (213) 974-8309
rcabigas@auditor.lacounty.gov

Evelyn Calderon-Yee, Bureau Chief, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 324-5919
ECalderonYee@sco.ca.gov

Sheri Chapman, General Counsel, *League of California Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8267
schapman@calcities.org

Ali Chemkhi, Senior Supervising Accountant/Auditor, *County of San Bernardino*
Office of Auditor-Controller, 268 West Hospitality Lane, Fourth Floor, San Bernardino, CA 92415-0018
Phone: (909) 382-7035
ali.chemkhi@sbcountyatc.gov

Annette Chinn, Consultant, *Cost Recovery Systems, Inc.*
705-2 East Bidwell Street, #294, Folsom, CA 95630
Phone: (916) 939-7901
achinncrs@aol.com

Carolyn Chu, Senior Fiscal and Policy Analyst, *Legislative Analyst's Office*
925 L Street, Suite 1000, Sacramento, CA 95814
Phone: (916) 319-8326
Carolyn.Chu@lao.ca.gov

Michael Coleman, Fiscal Policy Advisor, *Coleman Advisory Services*
2217 Isle Royale Lane, Davis, CA 95616
Phone: (530) 758-3952
coleman@muni1.com

Nicole Denow, Chief Deputy City Attorney, *City of San Diego*
Environment Section, 1200 Third Avenue, Suite 1100, San Diego, CA 92101
Phone: (619) 533-6173
NDenow@sandiego.gov

Kevin Fisher, Assistant City Attorney, *City of San Jose*
Environmental Services, 200 East Santa Clara Street, 16th Floor, San Jose, CA 95113
Phone: (408) 535-1987
kevin.fisher@sanjoseca.gov

Jennifer Fordyce, Assistant Chief Counsel, *State Water Resources Control Board*
Office of Chief Counsel, 1001 I Street, 22nd floor, Sacramento, CA 95814
Phone: (916) 324-6682
Jennifer.Fordyce@waterboards.ca.gov

Nora Frimann, City Attorney, *City of San Jose*
200 East Santa Clara Street, 16th Floor, San Jose, CA 95113
Phone: (408) 535-1900
nora.frimann@sanjoseca.gov

Juliana Gmur, Executive Director, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
juliana.gmur@csm.ca.gov

Viviana Heger, Special Counsel, *Duane Morris LLP*
865 Figueroa Street, Los Angeles, CA 90017-5450
Phone: (213) 689-7400
VHeger@duanemorris.com

Chris Hill, Principal Program Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, 8th Floor, Sacramento, CA 95814
Phone: (916) 445-3274
Chris.Hill@dof.ca.gov

Tiffany Hoang, Associate Accounting Analyst, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-1127
THoang@sco.ca.gov

Ken Howell, Senior Management Auditor, *State Controller's Office*
Audits, Compliance Audits Bureau, 3301 C Street, Suite 725A, Sacramento, CA 95816
Phone: (916) 323-2368
KHowell@sco.ca.gov

Jason Jennings, Director, *Maximus Consulting*
Financial Services, 808 Moorefield Park Drive, Suite 205, Richmond, VA 23236
Phone: (804) 323-3535
SB90@maximus.com

Jiwon Jeong, Counsel, *Department of Finance*
915 L Street, Sacramento, CA 95814

Phone: (916) 639-3135
jiwon.jeong@dof.ca.gov

Angelo Joseph, Supervisor, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-0706
AJoseph@sco.ca.gov

Emma Jungwirth, Senior Legislative Advocate, *California State Association of Counties (CSAC)*
1100 K Street, Ste 101, Sacramento, CA 95814
Phone: (916) 650-8115
ejungwirth@counties.org

Anne Kato, Acting Chief, *State Controller's Office*
Local Government Programs and Services Division, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 322-9891
akato@sco.ca.gov

Ryan Kearns, Chief of Watershed Protection Division, *County of Riverside Flood Control Disrict*
1995 Market Street, Riverside, CA 92501
Phone: (951) 955-2047
rkearns@rivco.org

Anita Kerezsi, Principal Consultant, *AK & Company*
2425 Golden Hill Road, Suite 106, Paso Robles, CA 93446
Phone: (805) 239-7994
akcompanysb90@gmail.com

Joanne Kessler, Fiscal Specialist, *City of Newport Beach*
Revenue Division, 100 Civic Center Drive , Newport Beach, CA 90266
Phone: (949) 644-3199
jkessler@newportbeachca.gov

Lisa Kurokawa, Bureau Chief for Audits, *State Controller's Office*
Compliance Audits Bureau, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 327-3138
lkurokawa@sco.ca.gov

David Lancaster, Attorney, Office of Chief Counsel, *State Water Resources Control Board*
San Francisco Bay Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 341-5196
david.lancaster@waterboards.ca.gov

Michael Lauffer, Chief Counsel, *State Water Resources Control Board*
1001 I Street, 22nd Floor, Sacramento, CA 95814-2828
Phone: (916) 341-5183
michael.lauffer@waterboards.ca.gov

Government Law Intake, *Department of Justice*
Attorney General's Office, 1300 I Street, Suite 125, PO Box 944255, Sacramento, CA 94244-2550
Phone: (916) 210-6046
governmentlawintake@doj.ca.gov

Fernando Lemus, Principal Accountant - Auditor, *County of Los Angeles*
Auditor-Controller's Office, 500 West Temple Street, Room 603, Los Angeles, CA 90012

Phone: (213) 974-0324
flemus@auditor.lacounty.gov

Erika Li, Chief Deputy Director, *Department of Finance*
915 L Street, 10th Floor, Sacramento, CA 95814
Phone: (916) 445-3274
erika.li@dof.ca.gov

Keith Lichten, Division Chief, *San Francisco Bay Regional Water Quality Control Board*
Watershed Management, 1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2380
klichten@waterboards.ca.gov

Selina Louie, Water Resource Control Engineer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2383
SLouie@waterboards.ca.gov

Kenneth Louie, Chief Counsel , *Department of Finance*
915 L. Street, Sacramento, CA 95814
Phone: (916) 322-0971
Kenny.Louie@dof.ca.gov

Everett Luc, Accounting Administrator I, Specialist, *State Controller's Office*
3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-0766
ELuc@sco.ca.gov

Jill Magee, Program Analyst, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
Jill.Magee@csm.ca.gov

Jennifer Maguire, City Manager, *City of San Jose*
200 East Santa Clara Street, San Jose, CA 95113
Phone: (408) 535-8111
Jennifer.Maguire@sanjoseca.gov

Suresh Malkani, Finance Director, *Town of Apple Valley*
14955 Dale Evans Parkway, Apple Valley, CA 92307
Phone: (760) 240-7000
smalkani@applevalley.org

Joan Malloy, City Manager, *Union City*
Claimant Contact
34009 Alvarado-Niles Road, Union City, CA 94587
Phone: (510) 675-5344
joanm@unioncity.org

Darryl Mar, Manager, *State Controller's Office*
Local Reimbursements Section, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-0706
DMar@sco.ca.gov

Joseph Martinez, Acting Lead, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612

Phone: (510) 622-2304
Joseph.Martinez@Waterboards.ca.gov

Frederick Mayo, Water Utilities Director, *City of Oceanside*
300 N. Coast Highway, Oceanside, CA 92054
Phone: (760) 435-5827
fmayo@oceansideca.org

Michelle Mendoza, Business Engineer Lead and Senior Manager, *MAXIMUS*
17310 Red Hill Avenue, Suite 340, Irvine, CA 95403
Phone: (949) 440-0845
michellemendoza@maximus.com

Joseph Monical, Water Resource Control Engineer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2304
Joseph.Monical@Waterboards.ca.gov

Jill Moya, Financial Services Director, *City of Oceanside*
300 North Coast Highway, Oceanside, CA 92054
Phone: (760) 435-3887
jmoya@oceansideca.org

Thomas Mumley, Assistant Executive Officer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2395
thomas.mumley@waterboards.ca.gov

Kaleb Neufeld, Assistant Controller, *City of Fresno*
2600 Fresno Street, Fresno, CA 93721
Phone: (559) 621-2489
Kaleb.Neufeld@fresno.gov

Gregory Newmark, Partner, *Duane Morris, LLP*
Claimant Representative
865 South Figueroa Street, Suite 3100, Los Angeles , CA 90017-5450
Phone: (213) 689-7434
gnewmark@duanemorris.com

Rosanna Nguyen, Program Budget Manager, *Department of Finance*
Local Government Unit, 915 L. Street, Sacramento, CA 95814
Phone: (916) 445-3274
Rosanna.Nguyen@dof.ca.gov

Andy Nichols, Consultant, *Nichols Consulting*
1857 44th Street, Sacramento, CA 95819
Phone: (916) 455-3939
andy@nichols-consulting.com

Rebecca Nordenholt, Senior Environmental Scientist, *San Francisco Bay Regional Water Quality Control Board*
Watershed Management, 1515 Clay Street, Suite 1400, 94612, Oakland, CA
Phone: (510) 622-1013
Rebecca.Nordenholt@waterboards.ca.gov

Adriana Nunez, Staff Counsel, *State Water Resources Control Board*
Los Angeles Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 322-3313
Adriana.Nunez@waterboards.ca.gov

Erika Opp, Administrative Analyst, *City of St. Helena*
City Clerk, 1480 Main Street, St. Helena, CA 94574
Phone: (707) 968-2743
eopp@cityofsthelena.gov

Eric Oppenheimer, Executive Director, *State Water Resources Control Board*
1001 I Street, 22nd Floor, Sacramento, CA 95814-2828
Phone: (916) 341-5615
eric.oppenheimer@waterboards.ca.gov

Arthur Palkowitz, Attorney, *Law Offices of Arthur M. Palkowitz*
12807 Calle de la Siena, San Diego, CA 92130
Phone: (858) 259-1055
law@artpalk.onmicrosoft.com

Kirsten Pangilinan, Specialist, *State Controller's Office*
Local Reimbursements Section, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 322-2446
KPangilinan@sco.ca.gov

Johnnie Pina, Legislative Policy Analyst, *League of Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8214
jpina@cacities.org

Trevor Power, Accounting Manager, *City of Newport Beach*
100 Civic Center Drive, Newport Beach , CA 92660
Phone: (949) 644-3085
tpower@newportbeachca.gov

Roberta Raper, Director of Finance, *City of West Sacramento*
1110 West Capitol Ave, West Sacramento, CA 95691
Phone: (916) 617-4509
robertar@cityofwestsacramento.org

Chad Rinde, Director of Finance, *County of Sacramento*
700 H Street, Room 3650, Sacramento, CA 95814
Phone: (916) 874-7248
RindeC@SacCounty.gov

Erica Ryan, Senior Environmental Specialist, *Riverside County Flood Control and Water Conservation District*
1995 Market Street, Riverside, CA 92501
Phone: (951) 955-0843
ERyan@rivco.org

Teresita Sablan, Staff Counsel, *State Water Resources Control Board*
Santa Ana Regional Water Quality Control Board and San Francisco Bay Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 341-5174
Teresita.Sablan@waterboards.ca.gov

Cindy Sconce, Director, *Government Consulting Partners*
5016 Brower Court, Granite Bay, CA 95746
Phone: (916) 276-8807
cindysconcegcp@gmail.com

Camille Shelton, Chief Legal Counsel, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
camille.shelton@csm.ca.gov

Carla Shelton, Senior Legal Analyst, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
carla.shelton@csm.ca.gov

Paul Steenhausen, Principal Fiscal and Policy Analyst, *Legislative Analyst's Office*
925 L Street, Suite 1000, , Sacramento, CA 95814
Phone: (916) 319-8303
Paul.Steenhausen@lao.ca.gov

Julie Testa, Vice Mayor, *City of Pleasanton*
123 Main Street PO Box520, Pleasanton, CA 94566
Phone: (925) 872-6517
Jtesta@cityofpleasantonca.gov

Jolene Tollenaar, Consultant, *MGT Consulting Group*
2251 Harvard Street, Suite 134, Sacramento, CA 95815
Phone: (916) 243-8913
jolenetollenaar@gmail.com

Robert Torrez, Interim Chief Financial Officer, *City of Huntington Beach*
2000 Main Street, Huntington Beach, CA 92648
Phone: (714) 536-5630
robert.torrez@surfcity-hb.org

Jessica Uzarski, Consultant, *Senate Budget and Fiscal Review Committee*
1020 N Street, Room 502, Sacramento, CA 95814
Phone: (916) 651-4103
Jessica.Uzarski@sen.ca.gov

Alejandra Villalobos, Management Services Manager, *County of San Bernardino*
Office of Auditor-Controller, 222 West Hospitality Lane, Forth Floor, San Bernardino, CA 92415
Phone: (909) 382-3191
alejandra.villalobos@sbcountyatc.gov

Joshua Walden, Deputy County Counsel, *County of Santa Clara*
Office of the County Counsel, 70 West Hedding Street, 9th Floor, San Jose, CA 95110
Phone: (408) 229-9052
joshua.walden@cco.sccgov.org

Renee Wellhouse, President, *David Wellhouse & Associates, Inc.*
3609 Bradshaw Road, H-382, Sacramento, CA 95927
Phone: (916) 797-4883
dwa-renee@surewest.net

Adam Whelen, Director of Public Works, *City of Anderson*
1887 Howard St., Anderson, CA 96007

Phone: (530) 378-6640
awhelen@ci.anderson.ca.us

Eileen White, Executive Officer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2300
Eileen.White@waterboards.ca.gov

Arthur Wylene, General Counsel, *Rural County Representatives of California (RCRC)*
1215 K Street, Suite 1650, Sacramento, CA 95814
Phone: (916) 447-4806
awylene@rcrcnet.org

Elisa Wynne, Staff Director, *Senate Budget & Fiscal Review Committee*
California State Senate, State Capitol Room 5019, Sacramento, CA 95814
Phone: (916) 651-4103
elisa.wynne@sen.ca.gov

Kaily Yap, Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, Sacramento, CA 95814
Phone: (916) 445-3274
Kaily.Yap@dof.ca.gov

Siew-Chin Yeong, Director of Public Works, *City of Pleasonton*
3333 Busch Road, Pleasonton, CA 94566
Phone: (925) 931-5506
syeong@cityofpleasantonca.gov

Traci Young, IS Project Director, *City and County of San Francisco*
San Francisco Public Utilities Commission (SFPUC), 525 Golden Gate Ave, San Francisco, CA 94102
Phone: (415) 653-2583
tmyoung@sfwater.org

Stephanie Yu, Assistant Chief Counsel, *State Water Resources Control Board*
Office of Chief Counsel, 1001 I Street, Sacramento, CA 95814
Phone: (916) 341-5157
stephanie.yu@waterboards.ca.gov

Aly Zimmermann, CIty Manager, *City of Rocklin*
3970 Rocklin Road, Rocklin, CA 95677
Phone: (916) 625-5585
alyz@rocklin.ca.us

Helmholst Zinser-Watkins, Associate Governmental Program Analyst, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 324-7876
HZinser-watkins@sco.ca.gov

State Water Resources Control Board

Exhibit G

Commission on State Mandates
Filed Date
07/13/2026

July 13, 2026

VIA DROP BOX

Juliana F. Gmur
Executive Director
Commission on State Mandates
980 9th Street, Suite 300
Sacramento, CA 95814

COMMENTS OF THE STATE WATER RESOURCES CONTROL BOARD AND CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD, SAN FRANCISCO BAY REGION ON THE DRAFT PROPOSED DECISION
California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, Provisions C.3.j, C.10.a, C.10.b, C.11.a, C11.b, C.11.c, C.12.a, C.12.d, and C.12.e, Adopted November 19, 2015, and Effective on January 1, 2016, City of Union City, Claimant, 16-TC-03

Dear Ms. Gmur:

The State Water Resources Control Board (State Water Board) and California Regional Water Quality Control Board, San Francisco Bay Region (San Francisco Bay Water Board) (together, Water Boards) have reviewed the Draft Proposed Decision for Test Claim 16-TC-03 issued by the Commission on State Mandates (Commission) on December 23, 2025. The Water Boards appreciate the thorough analysis of Commission staff. We generally concur with the conclusions that would deny reimbursement for challenged provisions in San Francisco Bay Water Board Order R2-2015-0049 but do not agree with the conclusions that some of the challenged provisions constitute reimbursable state-mandated new programs or higher levels of service. We maintain the arguments in our comments on the test claim with respect to the latter.[1] The Water Boards submit the following comments on permittees' fee authority.

The Draft Proposed Decision discusses local agency constitutional and statutory authorities to raise fees, including what courts have found to constitute sufficient fee authority as a legal matter within the meaning of Government Code section 17556, subdivision (d).[2] The Water Boards agree with the Draft Proposed Decision's conclusion

[1] See San Francisco Bay Water Board Response to Union City Test Claim 16-TC-03 (Order R2-2015-0049), Jan. 31, 2018.
[2] Draft Proposed Decision, pp. 170–206.

that permittees have sufficient regulatory fee authority related to the Green Infrastructure Plan requirements and sufficient fee authority based on *Paradise Irrigation District* (2019) 33 Cal.App.5th 174 and the Legislature's enactment of Government Code sections 57350 and 57351 for costs incurred beginning January 1, 2018. Notwithstanding *Department of Finance v. Commission on State Mandates* (2022) 85 Cal.App.5th 535 (*2022 Department of Finance*), the Water Boards maintain that the rationale in *Paradise Irrigation District* applies to voter approval requirements and permittees have sufficient fee authority for all costs.

The Water Boards disagree with the holding in the *2022 Department of Finance* decision and the conclusion in the Draft Proposed Decision that permittees lack fee authority for costs incurred *prior* to 2018 due to Proposition 218's voter approval provisions.[3] The Water Boards maintain that permittees had sufficient fee authority as a legal matter under Government Code section 17556(d) for the entire test claim period and are not entitled to reimbursement for any costs. California courts have consistently held that fee authority is purely a question of legal authorization.[4] "[F]actual considerations of practicality" do not defeat a local agency's fee authority.[5] Even where Proposition 218 requires voter approval for fees to pay for specific state mandates, the permittees still have fee authority, and expenditures for mandates are not reimbursable.

In *Paradise Irrigation, supra,* the court of appeal considered whether the majority protest procedure added by Proposition 218 deprived local agencies of authority to impose fees for water service.[6] California Constitution, Article XIII D, section 6(a), requires a local agency to identify parcels subject to a new fee, calculate the fee amount, and provide notice to affected property owners.[7] If a majority of the property owners submit written protests against the fee, the fee may not be imposed.[8]

The *Paradise Irrigation* court held that the "majority protest procedures are properly construed as a power-sharing arrangement between the districts and their customers, rather than a deprivation of fee authority."[9] The court explained that, when considering how voter powers affect the ability of local governments to impose fees, courts "presume local voters will give appropriate consideration and deference to state mandated requirements . . . ."[10] "Although this power-sharing arrangement has the potential for conflict, we must presume that both sides will act reasonably and in good

[3] Draft Proposed Decision, pp. 201–206.

[4] *Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 401 [holding that the focus under Government Code section 17556 is whether a local agency has "authority, i.e., the right or power, to levy fees sufficient to cover the costs"]; *Clovis Unified School Dist. v. Chiang* (2010) 188 Cal.App.4th 794, 812.

[5] *Paradise Irrigation Dist. v. Commission on State Mandates* (2019) 33 Cal.App.5th 174, 195.

[6] *Id.* at p. 182.

[7] Cal. Const., art. XIII D, § 6, subd. (a), par. (1).

[8] Cal. Const., art. XIII D, § 6, subd. (a), par. (2).

[9] *Paradise Irrigation*, *supra,* 33 Cal.App.5th at p. 182.

[10] *Id.* at p. 194, citing *Bighorn-Desert View Water Agency v. Verjil* (2006) 39 Cal.4th 205, 220.

faith."[11] Further, the fact that, "as a matter of practical reality, the majority protest procedure allows water customers to defeat the District's authority to levy fees" was not dispositive; "the inquiry into fee authority constitutes an issue of law rather than a question of fact."[12]

The *Paradise Irrigation* court did not consider whether a local agency has fee authority as a legal matter where fees or assessments are subject to voter approval requirements. However, the court's reasoning should apply with equal force where Proposition 218 requires pre-approval by a majority vote of the affected property owners (or, alternatively, by a two-thirds vote of the electorate). That the governing body of a municipality (e.g., County Board of Supervisors or City Council) and the affected property owners who elected that body share power to impose fees does not mean claimants are deprived of fee authority under Government Code section 17556. And the fact that property owners in claimants' local jurisdictions could theoretically withhold approval—just as a majority of the governing body could theoretically withhold approval to impose a fee—does not undermine claimants' police power; that power exists regardless of what the property owners, or the governing body, might decide about any given fee.

In *2022 Department of Finance*, the State Water Board and the San Diego Water Board argued that the court should extend the reasoning in *Paradise Irrigation* to Proposition 218 pre-approval requirements. The Third District Court of Appeal did not agree.[13] Other districts are not bound by the Third District Court of Appeal's decision and could decide differently,[14] as could the California Supreme Court. As such, the Water Boards maintain their arguments on this issue.

I declare under penalty of perjury that the foregoing is true and correct to the best of my personal knowledge, information, or belief.

Sincerely,

Teresita J. Sablan
Attorney IV

cc: Service List [via Commission Drop Box]

[11] *Id.* at p. 192.

[12] *Id.,* at p. 195, citing *Connell, supra,* 59 Cal.App.4th at p. 401.

[13] See *2022 Department of Finance*, 85 Cal.App.5th at pp. 577–81.

[14] See, e.g., *People v. Kisling* (2014) 223 Cal.App.4th 544, 547–48, quoting *Jessen v. Mentor Corp.* (2008) 158 Cal.App.4th 1480, 1489, fn. 10 (" ' "[T]here is no "horizontal stare decisis" within the Court of Appeal." ' ").

DECLARATION OF SERVICE BY EMAIL

I, the undersigned, declare as follows:

I am a resident of the County of Sacramento and I am over the age of 18 years, and not a party to the within action. My place of employment is 980 Ninth Street, Suite 300, Sacramento, California 95814.

On July 14, 2026, I served the:

- **Current Mailing List dated July 13, 2026**
- **Claimant's Comments on the Draft Proposed Decision filed July 13, 2026**
- **Finance's Comments on the Draft Proposed Decision filed July 13, 2026**
- **Water Boards' Comments on the Draft Proposed Decision filed July 13, 2026**

  California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, 16-TC-03
  California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, Provisions C.3.j, C.8., C.10.a., C.10.b., C.11.a., C.11.b., C.11.c., C.12.a., C.12.c., C.12.d., and C.12.e, Adopted on November 19, 2015 and Effective on January 1, 2016
  City of Union City, Claimant

by making it available on the Commission's website and providing notice of how to locate it to the email addresses provided on the attached mailing list.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this declaration was executed on July 14, 2026 at Sacramento, California.



David Chavez
Commission on State Mandates
980 Ninth Street, Suite 300
Sacramento, CA 95814
(916) 323-3562

COMMISSION ON STATE MANDATES

Mailing List

Last Updated: 7/13/26

Claim Number: 16-TC-03

Matter: California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049

Claimant: City of Union City

TO ALL PARTIES, INTERESTED PARTIES, AND INTERESTED PERSONS:

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Nicholas Ajluni, Assistant Director of Utilities and Environmental Services, *City of Pleasanton*
PO Box 520, Pleasanton, CA 04566
Phone: (925) 931-5523
najluni@cityofpleasantonca.gov

Rachelle Anema, Assistant Auditor-Controller, *County of Los Angeles*
Accounting Division, 500 W. Temple Street, Los Angeles, CA 90012
Phone: (213) 974-8321
RANEMA@auditor.lacounty.gov

Lili Apgar, Specialist, *State Controller's Office*
Local Reimbursements Section, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 324-0254
lapgar@sco.ca.gov

Socorro Aquino, *State Controller's Office*
Division of Audits, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-7522
SAquino@sco.ca.gov

Aaron Avery, Legislative Representative, *California Special Districts Association*
1112 I Street Bridge, Suite 200, Sacramento, CA 95814
Phone: (916) 442-7887
Aarona@csda.net

Anna Barich, Attorney, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
Anna.Barich@csm.ca.gov

David Bass, Vice Mayor, *City of Rocklin*
3970 Rocklin Road, Rocklin, CA 95677
Phone: (916) 663-8504
David.Bass@rocklin.ca.us

Ginni Bella Navarre, Deputy Legislative Analyst, *Legislative Analyst's Office*
925 L Street, Suite 1000, Sacramento, CA 95814
Phone: (916) 319-8342
Ginni.Bella@lao.ca.gov

Jonathan Borrego, City Manager, *City of Oceanside*
300 North Coast Highway, Oceanside, CA 92054
Phone: (760) 435-3065
citymanager@oceansideca.org

Allan Burdick,
7525 Myrtle Vista Avenue, Sacramento, CA 95831
Phone: (916) 203-3608
allanburdick@gmail.com

Guy Burdick, Consultant, *MGT Consulting*
2251 Harvard Street, Suite 134, Sacramento, CA 95815
Phone: (916) 833-7775
gburdick@mgtconsulting.com

Rica Mae Cabigas, Chief Accountant, *Auditor-Controller*
Accounting Division, 500 West Temple Street, Los Angeles, CA 90012
Phone: (213) 974-8309
rcabigas@auditor.lacounty.gov

Evelyn Calderon-Yee, Bureau Chief, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 324-5919
ECalderonYee@sco.ca.gov

Sheri Chapman, General Counsel, *League of California Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8267
schapman@calcities.org

Ali Chemkhi, Senior Supervising Accountant/Auditor, *County of San Bernardino*
Office of Auditor-Controller, 268 West Hospitality Lane, Fourth Floor, San Bernardino, CA 92415-0018
Phone: (909) 382-7035
ali.chemkhi@sbcountyatc.gov

Annette Chinn, Consultant, *Cost Recovery Systems, Inc.*
705-2 East Bidwell Street, #294, Folsom, CA 95630
Phone: (916) 939-7901
achinncrs@aol.com

Carolyn Chu, Senior Fiscal and Policy Analyst, *Legislative Analyst's Office*
925 L Street, Suite 1000, Sacramento, CA 95814
Phone: (916) 319-8326
Carolyn.Chu@lao.ca.gov

Michael Coleman, Fiscal Policy Advisor, *Coleman Advisory Services*
2217 Isle Royale Lane, Davis, CA 95616
Phone: (530) 758-3952
coleman@muni1.com

Nicole Denow, Chief Deputy City Attorney, *City of San Diego*
Environment Section, 1200 Third Avenue, Suite 1100, San Diego, CA 92101
Phone: (619) 533-6173
NDenow@sandiego.gov

Kevin Fisher, Assistant City Attorney, *City of San Jose*
Environmental Services, 200 East Santa Clara Street, 16th Floor, San Jose, CA 95113
Phone: (408) 535-1987
kevin.fisher@sanjoseca.gov

Jennifer Fordyce, Assistant Chief Counsel, *State Water Resources Control Board*
Office of Chief Counsel, 1001 I Street, 22nd floor, Sacramento, CA 95814
Phone: (916) 324-6682
Jennifer.Fordyce@waterboards.ca.gov

Nora Frimann, City Attorney, *City of San Jose*
200 East Santa Clara Street, 16th Floor, San Jose, CA 95113
Phone: (408) 535-1900
nora.frimann@sanjoseca.gov

Juliana Gmur, Executive Director, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
juliana.gmur@csm.ca.gov

Viviana Heger, Special Counsel, *Duane Morris LLP*
865 Figueroa Street, Los Angeles, CA 90017-5450
Phone: (213) 689-7400
VHeger@duanemorris.com

Chris Hill, Principal Program Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, 8th Floor, Sacramento, CA 95814
Phone: (916) 445-3274
Chris.Hill@dof.ca.gov

Tiffany Hoang, Associate Accounting Analyst, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-1127
THoang@sco.ca.gov

Ken Howell, Senior Management Auditor, *State Controller's Office*
Audits, Compliance Audits Bureau, 3301 C Street, Suite 725A, Sacramento, CA 95816
Phone: (916) 323-2368
KHowell@sco.ca.gov

Jason Jennings, Director, *Maximus Consulting*
Financial Services, 808 Moorefield Park Drive, Suite 205, Richmond, VA 23236
Phone: (804) 323-3535
SB90@maximus.com

Jiwon Jeong, Counsel, *Department of Finance*
915 L Street, Sacramento, CA 95814

Phone: (916) 639-3135
jiwon.jeong@dof.ca.gov

Angelo Joseph, Supervisor, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-0706
AJoseph@sco.ca.gov

Emma Jungwirth, Senior Legislative Advocate, *California State Association of Counties (CSAC)*
1100 K Street, Ste 101, Sacramento, CA 95814
Phone: (916) 650-8115
ejungwirth@counties.org

Anne Kato, Acting Chief, *State Controller's Office*
Local Government Programs and Services Division, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 322-9891
akato@sco.ca.gov

Ryan Kearns, Chief of Watershed Protection Division, *County of Riverside Flood Control Disrict*
1995 Market Street, Riverside, CA 92501
Phone: (951) 955-2047
rkearns@rivco.org

Anita Kerezsi, Principal Consultant, *AK & Company*
2425 Golden Hill Road, Suite 106, Paso Robles, CA 93446
Phone: (805) 239-7994
akcompanysb90@gmail.com

Joanne Kessler, Fiscal Specialist, *City of Newport Beach*
Revenue Division, 100 Civic Center Drive , Newport Beach, CA 90266
Phone: (949) 644-3199
jkessler@newportbeachca.gov

Lisa Kurokawa, Bureau Chief for Audits, *State Controller's Office*
Compliance Audits Bureau, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 327-3138
lkurokawa@sco.ca.gov

David Lancaster, Attorney, Office of Chief Counsel, *State Water Resources Control Board*
San Francisco Bay Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 341-5196
david.lancaster@waterboards.ca.gov

Michael Lauffer, Chief Counsel, *State Water Resources Control Board*
1001 I Street, 22nd Floor, Sacramento, CA 95814-2828
Phone: (916) 341-5183
michael.lauffer@waterboards.ca.gov

Government Law Intake, *Department of Justice*
Attorney General's Office, 1300 I Street, Suite 125, PO Box 944255, Sacramento, CA 94244-2550
Phone: (916) 210-6046
governmentlawintake@doj.ca.gov

Fernando Lemus, Principal Accountant - Auditor, *County of Los Angeles*
Auditor-Controller's Office, 500 West Temple Street, Room 603, Los Angeles, CA 90012

Phone: (213) 974-0324
flemus@auditor.lacounty.gov

Erika Li, Chief Deputy Director, *Department of Finance*
915 L Street, 10th Floor, Sacramento, CA 95814
Phone: (916) 445-3274
erika.li@dof.ca.gov

Keith Lichten, Division Chief, *San Francisco Bay Regional Water Quality Control Board*
Watershed Management, 1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2380
klichten@waterboards.ca.gov

Selina Louie, Water Resource Control Engineer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2383
SLouie@waterboards.ca.gov

Kenneth Louie, Chief Counsel , *Department of Finance*
915 L. Street, Sacramento, CA 95814
Phone: (916) 322-0971
Kenny.Louie@dof.ca.gov

Everett Luc, Accounting Administrator I, Specialist, *State Controller's Office*
3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-0766
ELuc@sco.ca.gov

Jill Magee, Program Analyst, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
Jill.Magee@csm.ca.gov

Jennifer Maguire, City Manager, *City of San Jose*
200 East Santa Clara Street, San Jose, CA 95113
Phone: (408) 535-8111
Jennifer.Maguire@sanjoseca.gov

Suresh Malkani, Finance Director, *Town of Apple Valley*
14955 Dale Evans Parkway, Apple Valley, CA 92307
Phone: (760) 240-7000
smalkani@applevalley.org

Joan Malloy, City Manager, *Union City*
Claimant Contact
34009 Alvarado-Niles Road, Union City, CA 94587
Phone: (510) 675-5344
joanm@unioncity.org

Darryl Mar, Manager, *State Controller's Office*
Local Reimbursements Section, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-0706
DMar@sco.ca.gov

Joseph Martinez, Acting Lead, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612

Phone: (510) 622-2304
Joseph.Martinez@Waterboards.ca.gov

Frederick Mayo, Water Utilities Director, *City of Oceanside*
300 N. Coast Highway, Oceanside, CA 92054
Phone: (760) 435-5827
fmayo@oceansideca.org

Michelle Mendoza, Business Engineer Lead and Senior Manager, *MAXIMUS*
17310 Red Hill Avenue, Suite 340, Irvine, CA 95403
Phone: (949) 440-0845
michellemendoza@maximus.com

Joseph Monical, Water Resource Control Engineer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2304
Joseph.Monical@Waterboards.ca.gov

Jill Moya, Financial Services Director, *City of Oceanside*
300 North Coast Highway, Oceanside, CA 92054
Phone: (760) 435-3887
jmoya@oceansideca.org

Thomas Mumley, Assistant Executive Officer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2395
thomas.mumley@waterboards.ca.gov

Kaleb Neufeld, Assistant Controller, *City of Fresno*
2600 Fresno Street, Fresno, CA 93721
Phone: (559) 621-2489
Kaleb.Neufeld@fresno.gov

Gregory Newmark, Partner, *Duane Morris, LLP*
Claimant Representative
865 South Figueroa Street, Suite 3100, Los Angeles , CA 90017-5450
Phone: (213) 689-7434
gnewmark@duanemorris.com

Rosanna Nguyen, Program Budget Manager, *Department of Finance*
Local Government Unit, 915 L. Street, Sacramento, CA 95814
Phone: (916) 445-3274
Rosanna.Nguyen@dof.ca.gov

Andy Nichols, Consultant, *Nichols Consulting*
1857 44th Street, Sacramento, CA 95819
Phone: (916) 455-3939
andy@nichols-consulting.com

Rebecca Nordenholt, Senior Environmental Scientist, *San Francisco Bay Regional Water Quality Control Board*
Watershed Management, 1515 Clay Street, Suite 1400, 94612, Oakland, CA
Phone: (510) 622-1013
Rebecca.Nordenholt@waterboards.ca.gov

Adriana Nunez, Staff Counsel, *State Water Resources Control Board*
Los Angeles Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 322-3313
Adriana.Nunez@waterboards.ca.gov

Erika Opp, Administrative Analyst, *City of St. Helena*
City Clerk, 1480 Main Street, St. Helena, CA 94574
Phone: (707) 968-2743
eopp@cityofsthelena.gov

Eric Oppenheimer, Executive Director, *State Water Resources Control Board*
1001 I Street, 22nd Floor, Sacramento, CA 95814-2828
Phone: (916) 341-5615
eric.oppenheimer@waterboards.ca.gov

Arthur Palkowitz, Attorney, *Law Offices of Arthur M. Palkowitz*
12807 Calle de la Siena, San Diego, CA 92130
Phone: (858) 259-1055
law@artpalk.onmicrosoft.com

Kirsten Pangilinan, Specialist, *State Controller's Office*
Local Reimbursements Section, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 322-2446
KPangilinan@sco.ca.gov

Johnnie Pina, Legislative Policy Analyst, *League of Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8214
jpina@cacities.org

Trevor Power, Accounting Manager, *City of Newport Beach*
100 Civic Center Drive, Newport Beach , CA 92660
Phone: (949) 644-3085
tpower@newportbeachca.gov

Roberta Raper, Director of Finance, *City of West Sacramento*
1110 West Capitol Ave, West Sacramento, CA 95691
Phone: (916) 617-4509
robertar@cityofwestsacramento.org

Chad Rinde, Director of Finance, *County of Sacramento*
700 H Street, Room 3650, Sacramento, CA 95814
Phone: (916) 874-7248
RindeC@SacCounty.gov

Erica Ryan, Senior Environmental Specialist, *Riverside County Flood Control and Water Conservation District*
1995 Market Street, Riverside, CA 92501
Phone: (951) 955-0843
ERyan@rivco.org

Teresita Sablan, Staff Counsel, *State Water Resources Control Board*
Santa Ana Regional Water Quality Control Board and San Francisco Bay Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 341-5174
Teresita.Sablan@waterboards.ca.gov

Cindy Sconce, Director, *Government Consulting Partners*
5016 Brower Court, Granite Bay, CA 95746
Phone: (916) 276-8807
cindysconcegcp@gmail.com

Camille Shelton, Chief Legal Counsel, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
camille.shelton@csm.ca.gov

Carla Shelton, Senior Legal Analyst, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
carla.shelton@csm.ca.gov

Paul Steenhausen, Principal Fiscal and Policy Analyst, *Legislative Analyst's Office*
925 L Street, Suite 1000, , Sacramento, CA 95814
Phone: (916) 319-8303
Paul.Steenhausen@lao.ca.gov

Julie Testa, Vice Mayor, *City of Pleasanton*
123 Main Street PO Box520, Pleasanton, CA 94566
Phone: (925) 872-6517
Jtesta@cityofpleasantonca.gov

Jolene Tollenaar, Consultant, *MGT Consulting Group*
2251 Harvard Street, Suite 134, Sacramento, CA 95815
Phone: (916) 243-8913
jolenetollenaar@gmail.com

Robert Torrez, Interim Chief Financial Officer, *City of Huntington Beach*
2000 Main Street, Huntington Beach, CA 92648
Phone: (714) 536-5630
robert.torrez@surfcity-hb.org

Jessica Uzarski, Consultant, *Senate Budget and Fiscal Review Committee*
1020 N Street, Room 502, Sacramento, CA 95814
Phone: (916) 651-4103
Jessica.Uzarski@sen.ca.gov

Alejandra Villalobos, Management Services Manager, *County of San Bernardino*
Office of Auditor-Controller, 222 West Hospitality Lane, Forth Floor, San Bernardino, CA 92415
Phone: (909) 382-3191
alejandra.villalobos@sbcountyatc.gov

Joshua Walden, Deputy County Counsel, *County of Santa Clara*
Office of the County Counsel, 70 West Hedding Street, 9th Floor, San Jose, CA 95110
Phone: (408) 229-9052
joshua.walden@cco.sccgov.org

Renee Wellhouse, President, *David Wellhouse & Associates, Inc.*
3609 Bradshaw Road, H-382, Sacramento, CA 95927
Phone: (916) 797-4883
dwa-renee@surewest.net

Adam Whelen, Director of Public Works, *City of Anderson*
1887 Howard St., Anderson, CA 96007

Phone: (530) 378-6640
awhelen@ci.anderson.ca.us

Eileen White, Executive Officer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2300
Eileen.White@waterboards.ca.gov

Arthur Wylene, General Counsel, *Rural County Representatives of California (RCRC)*
1215 K Street, Suite 1650, Sacramento, CA 95814
Phone: (916) 447-4806
awylene@rcrcnet.org

Elisa Wynne, Staff Director, *Senate Budget & Fiscal Review Committee*
California State Senate, State Capitol Room 5019, Sacramento, CA 95814
Phone: (916) 651-4103
elisa.wynne@sen.ca.gov

Kaily Yap, Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, Sacramento, CA 95814
Phone: (916) 445-3274
Kaily.Yap@dof.ca.gov

Siew-Chin Yeong, Director of Public Works, *City of Pleasonton*
3333 Busch Road, Pleasonton, CA 94566
Phone: (925) 931-5506
syeong@cityofpleasantonca.gov

Traci Young, IS Project Director, *City and County of San Francisco*
San Francisco Public Utilities Commission (SFPUC), 525 Golden Gate Ave, San Francisco, CA 94102
Phone: (415) 653-2583
tmyoung@sfwater.org

Stephanie Yu, Assistant Chief Counsel, *State Water Resources Control Board*
Office of Chief Counsel, 1001 I Street, Sacramento, CA 95814
Phone: (916) 341-5157
stephanie.yu@waterboards.ca.gov

Aly Zimmermann, CIty Manager, *City of Rocklin*
3970 Rocklin Road, Rocklin, CA 95677
Phone: (916) 625-5585
alyz@rocklin.ca.us

Helmholst Zinser-Watkins, Associate Governmental Program Analyst, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 324-7876
HZinser-watkins@sco.ca.gov

DEPARTMENT OF FINANCE

Gavin Newsom ▪ Governor
915 L Street ▪ Sacramento CA ▪ 95814-3706 ▪ www.dof.ca.gov

Exhibit H

Commission on State Mandates
Filed Date
07/13/2026

July 13, 2026

Juliana Gmur
Executive Director
Commission on State Mandates
980 Ninth Street, Suite 300
Sacramento, CA 95814

Comments on draft proposed decision for California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, Test Claim 16-TC-03

Dear Director Gmur,

The Department of Finance (Finance) has completed its review of the proposed decision by the Commission on State Mandates (Commission) for the above referenced Test Claim. Finance appreciates the careful consideration and effort by staff and concurs with those parts of the proposed decision that deny reimbursement. Further, Finance concurs with and joins in comments submitted or to be submitted by the State Water Resources Control Board (State Water Board) and California Regional Water Quality Control Board, San Francisco Bay Region (San Francisco Bay Water Board) (collectively, Water Boards) on the proposed decision. Finance provides the comments below concerning fee authority.

Finance agrees with the draft proposed decision's conclusion that permittees have sufficient regulatory fee authority related to the Green Infrastructure Plan requirements and sufficient fee authority based on *Paradise Irrigation District v. Commission on State Mandates* (2019) 33 Cal.App.5th 174 (Paradise Irrigation District) and enactment of Government Code sections 57350 and 57351 for costs incurred beginning January 1, 2018.

To the extent the Commission determines there are any state mandated costs prior to January 1, 2018, Finance contends the claimant has the necessary fee authority and is not entitled to any reimbursement. Specifically, Finance contends that claimant had sufficient fee authority pursuant to Government Code section 17556(d) and Proposition 26 for the entire test claim period and subsequently is not entitled to reimbursement for any costs. Proposition 26 addresses voter approval requirements and it specifically excludes assessment and property related fees imposed in accordance with Proposition 218. As such, under Proposition 26, so long as they are imposed in accordance with Proposition 218, the claimant is not prohibited by Proposition 26 from

levying fees or assessments without voter approval. The fee authority negates the need for any reimbursement by the state for those costs claimed by the claimant.

If you have any questions regarding this letter, please contact Kenny Louie, Chief Counsel at (916) 322-0971.

Sincerely,

KENNY LOUIE
Chief Counsel

DECLARATION OF SERVICE BY EMAIL

I, the undersigned, declare as follows:

I am a resident of the County of Sacramento and I am over the age of 18 years, and not a party to the within action. My place of employment is 980 Ninth Street, Suite 300, Sacramento, California 95814.

On July 14, 2026, I served the:

- **Current Mailing List dated July 13, 2026**
- **Claimant's Comments on the Draft Proposed Decision filed July 13, 2026**
- **Finance's Comments on the Draft Proposed Decision filed July 13, 2026**
- **Water Boards' Comments on the Draft Proposed Decision filed July 13, 2026**

  California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, 16-TC-03
  California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049, Provisions C.3.j, C.8., C.10.a., C.10.b., C.11.a., C.11.b., C.11.c., C.12.a., C.12.c., C.12.d., and C.12.e, Adopted on November 19, 2015 and Effective on January 1, 2016
  City of Union City, Claimant

by making it available on the Commission's website and providing notice of how to locate it to the email addresses provided on the attached mailing list.

I declare under penalty of perjury under the laws of the State of California that the foregoing is true and correct, and that this declaration was executed on July 14, 2026 at Sacramento, California.



David Chavez
Commission on State Mandates
980 Ninth Street, Suite 300
Sacramento, CA 95814
(916) 323-3562

COMMISSION ON STATE MANDATES

Mailing List

Last Updated: 7/13/26

Claim Number: 16-TC-03

Matter: California Regional Water Quality Control Board, San Francisco Bay Region, Order No. R2-2015-0049

Claimant: City of Union City

TO ALL PARTIES, INTERESTED PARTIES, AND INTERESTED PERSONS:

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Nicholas Ajluni, Assistant Director of Utilities and Environmental Services, *City of Pleasanton*
PO Box 520, Pleasanton, CA 04566
Phone: (925) 931-5523
najluni@cityofpleasantonca.gov

Rachelle Anema, Assistant Auditor-Controller, *County of Los Angeles*
Accounting Division, 500 W. Temple Street, Los Angeles, CA 90012
Phone: (213) 974-8321
RANEMA@auditor.lacounty.gov

Lili Apgar, Specialist, *State Controller's Office*
Local Reimbursements Section, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 324-0254
lapgar@sco.ca.gov

Socorro Aquino, *State Controller's Office*
Division of Audits, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 322-7522
SAquino@sco.ca.gov

Aaron Avery, Legislative Representative, *California Special Districts Association*
1112 I Street Bridge, Suite 200, Sacramento, CA 95814
Phone: (916) 442-7887
Aarona@csda.net

Anna Barich, Attorney, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
Anna.Barich@csm.ca.gov

David Bass, Vice Mayor, *City of Rocklin*
3970 Rocklin Road, Rocklin, CA 95677
Phone: (916) 663-8504
David.Bass@rocklin.ca.us

Ginni Bella Navarre, Deputy Legislative Analyst, *Legislative Analyst's Office*
925 L Street, Suite 1000, Sacramento, CA 95814
Phone: (916) 319-8342
Ginni.Bella@lao.ca.gov

Jonathan Borrego, City Manager, *City of Oceanside*
300 North Coast Highway, Oceanside, CA 92054
Phone: (760) 435-3065
citymanager@oceansideca.org

Allan Burdick,
7525 Myrtle Vista Avenue, Sacramento, CA 95831
Phone: (916) 203-3608
allanburdick@gmail.com

Guy Burdick, Consultant, *MGT Consulting*
2251 Harvard Street, Suite 134, Sacramento, CA 95815
Phone: (916) 833-7775
gburdick@mgtconsulting.com

Rica Mae Cabigas, Chief Accountant, *Auditor-Controller*
Accounting Division, 500 West Temple Street, Los Angeles, CA 90012
Phone: (213) 974-8309
rcabigas@auditor.lacounty.gov

Evelyn Calderon-Yee, Bureau Chief, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 324-5919
ECalderonYee@sco.ca.gov

Sheri Chapman, General Counsel, *League of California Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8267
schapman@calcities.org

Ali Chemkhi, Senior Supervising Accountant/Auditor, *County of San Bernardino*
Office of Auditor-Controller, 268 West Hospitality Lane, Fourth Floor, San Bernardino, CA 92415-0018
Phone: (909) 382-7035
ali.chemkhi@sbcountyatc.gov

Annette Chinn, Consultant, *Cost Recovery Systems, Inc.*
705-2 East Bidwell Street, #294, Folsom, CA 95630
Phone: (916) 939-7901
achinncrs@aol.com

Carolyn Chu, Senior Fiscal and Policy Analyst, *Legislative Analyst's Office*
925 L Street, Suite 1000, Sacramento, CA 95814
Phone: (916) 319-8326
Carolyn.Chu@lao.ca.gov

Michael Coleman, Fiscal Policy Advisor, *Coleman Advisory Services*
2217 Isle Royale Lane, Davis, CA 95616
Phone: (530) 758-3952
coleman@muni1.com

Nicole Denow, Chief Deputy City Attorney, *City of San Diego*
Environment Section, 1200 Third Avenue, Suite 1100, San Diego, CA 92101
Phone: (619) 533-6173
NDenow@sandiego.gov

Kevin Fisher, Assistant City Attorney, *City of San Jose*
Environmental Services, 200 East Santa Clara Street, 16th Floor, San Jose, CA 95113
Phone: (408) 535-1987
kevin.fisher@sanjoseca.gov

Jennifer Fordyce, Assistant Chief Counsel, *State Water Resources Control Board*
Office of Chief Counsel, 1001 I Street, 22nd floor, Sacramento, CA 95814
Phone: (916) 324-6682
Jennifer.Fordyce@waterboards.ca.gov

Nora Frimann, City Attorney, *City of San Jose*
200 East Santa Clara Street, 16th Floor, San Jose, CA 95113
Phone: (408) 535-1900
nora.frimann@sanjoseca.gov

Juliana Gmur, Executive Director, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
juliana.gmur@csm.ca.gov

Viviana Heger, Special Counsel, *Duane Morris LLP*
865 Figueroa Street, Los Angeles, CA 90017-5450
Phone: (213) 689-7400
VHeger@duanemorris.com

Chris Hill, Principal Program Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, 8th Floor, Sacramento, CA 95814
Phone: (916) 445-3274
Chris.Hill@dof.ca.gov

Tiffany Hoang, Associate Accounting Analyst, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-1127
THoang@sco.ca.gov

Ken Howell, Senior Management Auditor, *State Controller's Office*
Audits, Compliance Audits Bureau, 3301 C Street, Suite 725A, Sacramento, CA 95816
Phone: (916) 323-2368
KHowell@sco.ca.gov

Jason Jennings, Director, *Maximus Consulting*
Financial Services, 808 Moorefield Park Drive, Suite 205, Richmond, VA 23236
Phone: (804) 323-3535
SB90@maximus.com

Jiwon Jeong, Counsel, *Department of Finance*
915 L Street, Sacramento, CA 95814

Phone: (916) 639-3135
jiwon.jeong@dof.ca.gov

Angelo Joseph, Supervisor, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-0706
AJoseph@sco.ca.gov

Emma Jungwirth, Senior Legislative Advocate, *California State Association of Counties (CSAC)*
1100 K Street, Ste 101, Sacramento, CA 95814
Phone: (916) 650-8115
ejungwirth@counties.org

Anne Kato, Acting Chief, *State Controller's Office*
Local Government Programs and Services Division, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 322-9891
akato@sco.ca.gov

Ryan Kearns, Chief of Watershed Protection Division, *County of Riverside Flood Control Disrict*
1995 Market Street, Riverside, CA 92501
Phone: (951) 955-2047
rkearns@rivco.org

Anita Kerezsi, Principal Consultant, *AK & Company*
2425 Golden Hill Road, Suite 106, Paso Robles, CA 93446
Phone: (805) 239-7994
akcompanysb90@gmail.com

Joanne Kessler, Fiscal Specialist, *City of Newport Beach*
Revenue Division, 100 Civic Center Drive , Newport Beach, CA 90266
Phone: (949) 644-3199
jkessler@newportbeachca.gov

Lisa Kurokawa, Bureau Chief for Audits, *State Controller's Office*
Compliance Audits Bureau, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 327-3138
lkurokawa@sco.ca.gov

David Lancaster, Attorney, Office of Chief Counsel, *State Water Resources Control Board*
San Francisco Bay Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 341-5196
david.lancaster@waterboards.ca.gov

Michael Lauffer, Chief Counsel, *State Water Resources Control Board*
1001 I Street, 22nd Floor, Sacramento, CA 95814-2828
Phone: (916) 341-5183
michael.lauffer@waterboards.ca.gov

Government Law Intake, *Department of Justice*
Attorney General's Office, 1300 I Street, Suite 125, PO Box 944255, Sacramento, CA 94244-2550
Phone: (916) 210-6046
governmentlawintake@doj.ca.gov

Fernando Lemus, Principal Accountant - Auditor, *County of Los Angeles*
Auditor-Controller's Office, 500 West Temple Street, Room 603, Los Angeles, CA 90012

Phone: (213) 974-0324
flemus@auditor.lacounty.gov

Erika Li, Chief Deputy Director, *Department of Finance*
915 L Street, 10th Floor, Sacramento, CA 95814
Phone: (916) 445-3274
erika.li@dof.ca.gov

Keith Lichten, Division Chief, *San Francisco Bay Regional Water Quality Control Board*
Watershed Management, 1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2380
klichten@waterboards.ca.gov

Selina Louie, Water Resource Control Engineer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2383
SLouie@waterboards.ca.gov

Kenneth Louie, Chief Counsel , *Department of Finance*
915 L. Street, Sacramento, CA 95814
Phone: (916) 322-0971
Kenny.Louie@dof.ca.gov

Everett Luc, Accounting Administrator I, Specialist, *State Controller's Office*
3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-0766
ELuc@sco.ca.gov

Jill Magee, Program Analyst, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
Jill.Magee@csm.ca.gov

Jennifer Maguire, City Manager, *City of San Jose*
200 East Santa Clara Street, San Jose, CA 95113
Phone: (408) 535-8111
Jennifer.Maguire@sanjoseca.gov

Suresh Malkani, Finance Director, *Town of Apple Valley*
14955 Dale Evans Parkway, Apple Valley, CA 92307
Phone: (760) 240-7000
smalkani@applevalley.org

Joan Malloy, City Manager, *Union City*
Claimant Contact
34009 Alvarado-Niles Road, Union City, CA 94587
Phone: (510) 675-5344
joanm@unioncity.org

Darryl Mar, Manager, *State Controller's Office*
Local Reimbursements Section, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 323-0706
DMar@sco.ca.gov

Joseph Martinez, Acting Lead, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612

Phone: (510) 622-2304
Joseph.Martinez@Waterboards.ca.gov

Frederick Mayo, Water Utilities Director, *City of Oceanside*
300 N. Coast Highway, Oceanside, CA 92054
Phone: (760) 435-5827
fmayo@oceansideca.org

Michelle Mendoza, Business Engineer Lead and Senior Manager, *MAXIMUS*
17310 Red Hill Avenue, Suite 340, Irvine, CA 95403
Phone: (949) 440-0845
michellemendoza@maximus.com

Joseph Monical, Water Resource Control Engineer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2304
Joseph.Monical@Waterboards.ca.gov

Jill Moya, Financial Services Director, *City of Oceanside*
300 North Coast Highway, Oceanside, CA 92054
Phone: (760) 435-3887
jmoya@oceansideca.org

Thomas Mumley, Assistant Executive Officer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2395
thomas.mumley@waterboards.ca.gov

Kaleb Neufeld, Assistant Controller, *City of Fresno*
2600 Fresno Street, Fresno, CA 93721
Phone: (559) 621-2489
Kaleb.Neufeld@fresno.gov

Gregory Newmark, Partner, *Duane Morris, LLP*
Claimant Representative
865 South Figueroa Street, Suite 3100, Los Angeles , CA 90017-5450
Phone: (213) 689-7434
gnewmark@duanemorris.com

Rosanna Nguyen, Program Budget Manager, *Department of Finance*
Local Government Unit, 915 L. Street, Sacramento, CA 95814
Phone: (916) 445-3274
Rosanna.Nguyen@dof.ca.gov

Andy Nichols, Consultant, *Nichols Consulting*
1857 44th Street, Sacramento, CA 95819
Phone: (916) 455-3939
andy@nichols-consulting.com

Rebecca Nordenholt, Senior Environmental Scientist, *San Francisco Bay Regional Water Quality Control Board*
Watershed Management, 1515 Clay Street, Suite 1400, 94612, Oakland, CA
Phone: (510) 622-1013
Rebecca.Nordenholt@waterboards.ca.gov

Adriana Nunez, Staff Counsel, *State Water Resources Control Board*
Los Angeles Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 322-3313
Adriana.Nunez@waterboards.ca.gov

Erika Opp, Administrative Analyst, *City of St. Helena*
City Clerk, 1480 Main Street, St. Helena, CA 94574
Phone: (707) 968-2743
eopp@cityofsthelena.gov

Eric Oppenheimer, Executive Director, *State Water Resources Control Board*
1001 I Street, 22nd Floor, Sacramento, CA 95814-2828
Phone: (916) 341-5615
eric.oppenheimer@waterboards.ca.gov

Arthur Palkowitz, Attorney, *Law Offices of Arthur M. Palkowitz*
12807 Calle de la Siena, San Diego, CA 92130
Phone: (858) 259-1055
law@artpalk.onmicrosoft.com

Kirsten Pangilinan, Specialist, *State Controller's Office*
Local Reimbursements Section, 3301 C Street, Suite 740, Sacramento, CA 95816
Phone: (916) 322-2446
KPangilinan@sco.ca.gov

Johnnie Pina, Legislative Policy Analyst, *League of Cities*
1400 K Street, Suite 400, Sacramento, CA 95814
Phone: (916) 658-8214
jpina@cacities.org

Trevor Power, Accounting Manager, *City of Newport Beach*
100 Civic Center Drive, Newport Beach , CA 92660
Phone: (949) 644-3085
tpower@newportbeachca.gov

Roberta Raper, Director of Finance, *City of West Sacramento*
1110 West Capitol Ave, West Sacramento, CA 95691
Phone: (916) 617-4509
robertar@cityofwestsacramento.org

Chad Rinde, Director of Finance, *County of Sacramento*
700 H Street, Room 3650, Sacramento, CA 95814
Phone: (916) 874-7248
RindeC@SacCounty.gov

Erica Ryan, Senior Environmental Specialist, *Riverside County Flood Control and Water Conservation District*
1995 Market Street, Riverside, CA 92501
Phone: (951) 955-0843
ERyan@rivco.org

Teresita Sablan, Staff Counsel, *State Water Resources Control Board*
Santa Ana Regional Water Quality Control Board and San Francisco Bay Regional Water Quality Control Board, 1001 I Street, 22nd Floor, Sacramento, CA 95814
Phone: (916) 341-5174
Teresita.Sablan@waterboards.ca.gov

Cindy Sconce, Director, *Government Consulting Partners*
5016 Brower Court, Granite Bay, CA 95746
Phone: (916) 276-8807
cindysconcegcp@gmail.com

Camille Shelton, Chief Legal Counsel, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
camille.shelton@csm.ca.gov

Carla Shelton, Senior Legal Analyst, *Commission on State Mandates*
980 9th Street, Suite 300, Sacramento, CA 95814
Phone: (916) 323-3562
carla.shelton@csm.ca.gov

Paul Steenhausen, Principal Fiscal and Policy Analyst, *Legislative Analyst's Office*
925 L Street, Suite 1000, , Sacramento, CA 95814
Phone: (916) 319-8303
Paul.Steenhausen@lao.ca.gov

Julie Testa, Vice Mayor, *City of Pleasanton*
123 Main Street PO Box520, Pleasanton, CA 94566
Phone: (925) 872-6517
Jtesta@cityofpleasantonca.gov

Jolene Tollenaar, Consultant, *MGT Consulting Group*
2251 Harvard Street, Suite 134, Sacramento, CA 95815
Phone: (916) 243-8913
jolenetollenaar@gmail.com

Robert Torrez, Interim Chief Financial Officer, *City of Huntington Beach*
2000 Main Street, Huntington Beach, CA 92648
Phone: (714) 536-5630
robert.torrez@surfcity-hb.org

Jessica Uzarski, Consultant, *Senate Budget and Fiscal Review Committee*
1020 N Street, Room 502, Sacramento, CA 95814
Phone: (916) 651-4103
Jessica.Uzarski@sen.ca.gov

Alejandra Villalobos, Management Services Manager, *County of San Bernardino*
Office of Auditor-Controller, 222 West Hospitality Lane, Forth Floor, San Bernardino, CA 92415
Phone: (909) 382-3191
alejandra.villalobos@sbcountyatc.gov

Joshua Walden, Deputy County Counsel, *County of Santa Clara*
Office of the County Counsel, 70 West Hedding Street, 9th Floor, San Jose, CA 95110
Phone: (408) 229-9052
joshua.walden@cco.sccgov.org

Renee Wellhouse, President, *David Wellhouse & Associates, Inc.*
3609 Bradshaw Road, H-382, Sacramento, CA 95927
Phone: (916) 797-4883
dwa-renee@surewest.net

Adam Whelen, Director of Public Works, *City of Anderson*
1887 Howard St., Anderson, CA 96007

Phone: (530) 378-6640
awhelen@ci.anderson.ca.us

Eileen White, Executive Officer, *San Francisco Bay Regional Water Quality Control Board*
1515 Clay Street, Suite 1400, Oakland, CA 94612
Phone: (510) 622-2300
Eileen.White@waterboards.ca.gov

Arthur Wylene, General Counsel, *Rural County Representatives of California (RCRC)*
1215 K Street, Suite 1650, Sacramento, CA 95814
Phone: (916) 447-4806
awylene@rcrcnet.org

Elisa Wynne, Staff Director, *Senate Budget & Fiscal Review Committee*
California State Senate, State Capitol Room 5019, Sacramento, CA 95814
Phone: (916) 651-4103
elisa.wynne@sen.ca.gov

Kaily Yap, Budget Analyst, *Department of Finance*
Local Government Unit, 915 L Street, Sacramento, CA 95814
Phone: (916) 445-3274
Kaily.Yap@dof.ca.gov

Siew-Chin Yeong, Director of Public Works, *City of Pleasonton*
3333 Busch Road, Pleasonton, CA 94566
Phone: (925) 931-5506
syeong@cityofpleasantonca.gov

Traci Young, IS Project Director, *City and County of San Francisco*
San Francisco Public Utilities Commission (SFPUC), 525 Golden Gate Ave, San Francisco, CA 94102
Phone: (415) 653-2583
tmyoung@sfwater.org

Stephanie Yu, Assistant Chief Counsel, *State Water Resources Control Board*
Office of Chief Counsel, 1001 I Street, Sacramento, CA 95814
Phone: (916) 341-5157
stephanie.yu@waterboards.ca.gov

Aly Zimmermann, CIty Manager, *City of Rocklin*
3970 Rocklin Road, Rocklin, CA 95677
Phone: (916) 625-5585
alyz@rocklin.ca.us

Helmholst Zinser-Watkins, Associate Governmental Program Analyst, *State Controller's Office*
Local Government Programs and Services Division, Bureau of Payments, 3301 C Street, Suite 700, Sacramento, CA 95816
Phone: (916) 324-7876
HZinser-watkins@sco.ca.gov

United States Environmental Protection Agency
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Fact Sheet 2.5

Stormwater Phase II Final Rule

Exhibit I

Illicit Discharge Detection and Elimination Minimum Control Measure

Stormwater Phase II Final Rule Fact Sheet Series

Overview

1.0 – Stormwater Phase II Final Rule: An Overview

Small MS4 Program

2.0 – Small MS4 Stormwater Program Overview

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Industrial "No Exposure"

4.0 – Conditional No Exposure Exclusion for Industrial Activity

This fact sheet profiles the Illicit Discharge Detection and Elimination minimum control measure, one of six measures the operator of a Phase II regulated small municipal separate storm sewer system (MS4) is required to include in its stormwater management program to meet the conditions of its National Pollutant Discharge Elimination System (NPDES) permit. This fact sheet outlines the Phase II Final Rule requirements and offers some general guidance on how to satisfy them. It is important to keep in mind that the small MS4 operator has a great deal of flexibility in choosing exactly how to satisfy the minimum control measure requirements.

What Is An "Illicit Discharge"?

Federal regulations define an illicit discharge as "...any discharge to an MS4 that is not composed entirely of stormwater..." with some exceptions. These exceptions include discharges from NPDES-permitted industrial sources and discharges from fire-fighting activities. Illicit discharges (see Table 1) are considered "illicit" because MS4s are not designed to accept, process, or discharge such non-stormwater wastes.

Table 1

Sources of Illicit Discharges
Sanitary wastewater
Effluent from septic tanks
Car wash wastewaters
Improper oil disposal
Radiator flushing disposal
Laundry wastewaters
Spills from roadway accidents
Improper disposal of auto and household toxics

Why Are Illicit Discharge Detection and Elimination Efforts Necessary?

Discharges from MS4s often include wastes and wastewater from non-stormwater sources. A study conducted in 1987 in Sacramento, California, found that almost one-half of the water discharged from a local MS4 was not directly attributable to precipitation runoff. A significant portion of these dry weather flows were from illicit and/or inappropriate discharges and connections to the MS4.

Illicit discharges enter the system through either direct connections (e.g., wastewater piping either mistakenly or deliberately connected to the storm drains) or indirect connections (e.g., infiltration into the MS4 from cracked sanitary systems, spills collected by drain outlets, or paint or used oil dumped directly into a drain). The result is untreated discharges that contribute high levels of pollutants, including heavy metals, toxics, oil and grease, solvents, nutrients, viruses, and bacteria to receiving waterbodies. Pollutant levels from these illicit discharges have been shown in EPA studies to be high enough to significantly degrade receiving water quality and threaten aquatic, wildlife, and human health.

What Is Required?

Recognizing the adverse effects illicit discharges can have on receiving waters, the Phase II Final Rule requires an operator of a regulated small MS4 to develop, implement and enforce an illicit discharge detection and elimination program. This program must include the following:

- ❑ A storm sewer system map, showing the location of all outfalls and the names and location of all waters of the United States that receive discharges from those outfalls;
- ❑ Through an ordinance, or other regulatory mechanism, a prohibition (to the extent allowable under State, Tribal, or local law) on non-stormwater discharges into the MS4, and appropriate enforcement procedures and actions;
- ❑ A plan to detect and address non-stormwater discharges, including illegal dumping, into the MS4;
- ❑ The education of public employees, businesses, and the general public about the hazards associated with illegal discharges and improper disposal of waste; and
- ❑ The determination of appropriate best management practices (BMPs) and measurable goals for this minimum control measure. Some program implementation approaches, BMPs (i.e., the program actions/activities), and measurable goals are suggested below.

Does This Measure Need to Address All Illicit Discharges?

No. The illicit discharge detection and elimination program does not need to address the following categories of non-stormwater discharges or flows unless the operator of the regulated small MS4 identifies them as significant contributors of pollutants to its MS4:

- ❑ Water line flushing;
- ❑ Landscape irrigation;
- ❑ Diverted stream flows;
- ❑ Rising ground waters;
- ❑ Uncontaminated ground water infiltration;
- ❑ Uncontaminated pumped ground water;
- ❑ Discharges from potable water sources;
- ❑ Foundation drains;
- ❑ Air conditioning condensation;
- ❑ Irrigation water;
- ❑ Springs;
- ❑ Water from crawl space pumps;
- ❑ Footing drains;
- ❑ Lawn watering;
- ❑ Individual residential car washing;
- ❑ Flows from riparian habitats and wetlands;
- ❑ Dechlorinated swimming pool discharges; and
- ❑ Street wash water.

What Are Some Guidelines for Developing and Implementing This Measure?

The objective of the illicit discharge detection and elimination minimum control measure is to have regulated small MS4 operators gain a thorough awareness of their systems. This awareness allows them to determine the types and sources of illicit discharges entering their system; and establish the legal, technical, and educational means needed to eliminate these discharges. Permittees could meet these objectives in a variety of ways depending on their individual needs and abilities, but some general guidance for each requirement is provided below.

The Map

The storm sewer system map is meant to demonstrate a basic awareness of the intake and discharge areas of the system. It is needed to help determine the extent of discharged dry weather flows, the possible sources of the dry weather flows, and the particular waterbodies these flows may be affecting. An existing map, such as a topographical map, on which the location of major pipes and outfalls can be clearly presented demonstrates such awareness.

EPA recommends collecting all existing information on outfall locations (e.g., review city records, drainage maps, storm drain maps), and then conducting field surveys to verify locations. It probably will be necessary to walk (i.e., wade through small receiving waters or use a boat for larger waters) the streambanks and shorelines for visual observation. More than one trip may be needed to locate all outfalls.

Legal Prohibition and Enforcement

EPA recognizes that some permittees may have limited authority under State, Tribal or local law to establish and enforce an ordinance or other regulatory mechanism prohibiting illicit discharges. In such a case, the permittee is encouraged to obtain the necessary authority, if possible.

The Plan

The plan to detect and address illicit discharges is the central component of this minimum control measure. The plan is dependant upon several factors, including the permittee's available resources, size of staff, and degree and character of its illicit discharges. As guidance only, the four steps of a recommended plan are outlined below:

❶ **Locate Problem Areas**

EPA recommends that priority areas be identified for detailed screening of the system based on the likelihood of illicit connections (e.g., areas with older sanitary sewer lines). Methods that can locate problem areas include: visual screening; water sampling from manholes and outfalls during dry weather; the use of infrared and thermal photography, cross-training field staff to detect illicit discharges, and public complaints.

❷ **Find the Source**

Once a problem area or discharge is found, additional efforts usually are necessary to determine the source of the problem. Methods that can find the source of the illicit discharge include: dye-testing buildings in problem areas; dye- or smoke-testing buildings at the time of sale; tracing the discharge upstream in the storm sewer; employing a certification program that shows that buildings have been checked for illicit connections; implementing an inspection program of existing septic systems; and using video to inspect the storm sewers.

❸ **Remove/Correct Illicit Connections**

Once the source is identified, the offending discharger should be notified and directed to correct the problem. Education efforts and working with the discharger can be effective in resolving the problem before taking legal action.

❹ **Document Actions Taken**

As a final step, all actions taken under the plan should be documented. This illustrates that progress is being made to eliminate illicit connections and discharges. Documented actions should be included in annual reports and include information such as: the number of outfalls screened; any complaints received and corrected; the number of discharges and quantities of flow eliminated; and the number of dye or smoke tests conducted.

Educational Outreach

The Center for Watershed Protection and Robert Pitt (2004) researched the most cost-effective and efficient techniques that can be employed to identify and correct inappropriate discharges. Data from Montgomery County, Maryland, was analyzed and it was determined that staff identify and correct about six inappropriate discharges per year as a result of regular screening. By contrast, over 185 inappropriate discharges are corrected each year in Montgomery County as a direct result of citizen complaints and calls to a storm water compliant hotline. Public education and labeling of outfalls and other storm drain infrastructure is an important element of establishing a successful citizen hotline. Outreach to public employees, businesses, property owners, the general public, and elected officials regarding ways to detect and eliminate illicit discharges is an integral part of this minimum measure.

Suggested educational outreach efforts include:

- Developing ***informative brochures, and guidances*** for specific audiences (e.g., carpet cleaning businesses) and school curricula;
- Designing a program to ***publicize and facilitate public reporting*** of illicit discharges;
- ***Coordinating volunteers*** for locating, and visually inspecting, outfalls or to stencil storm drains; and
- Initiating ***recycling programs*** for commonly dumped wastes, such as motor oil, antifreeze, and pesticides.

What Are Appropriate Measurable Goals?

Measurable goals, which are required for each minimum control measure, are intended to gauge permit compliance and program effectiveness. The measurable goals, as well as the BMPs, should reflect the needs and characteristics of the operator and the area served by its small MS4. Furthermore, they should be chosen using an integrated approach that fully addresses the requirements and intent of the minimum control measure.

EPA has developed a Measurable Goals Guidance for Phase II MS4s that is designed to help program managers comply with the requirement to develop measurable goals. The guidance presents an approach for MS4 operators to develop measurable goals as part of their stormwater management plan. For example, an MS4 could establish a measurable goal of responding to all complaints received by the citizen complaint hotline within 24 hours to minimize water quality impacts or recurrent dumping. A complaint tracking system could be used to log response and enforcement activity.

The educational outreach measurable goals for this minimum control measure could be combined with the measurable goals for the Public Education and Outreach minimum control measure (see Fact Sheet 2.3).

Sources

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U.S. EPA Office of Water. 1993. *Investigation of Inappropriate Pollutant Entries into Storm Drainage Systems: A User's Guide*. EPA/600/R-92/238. Washington, D.C.

Wayne County Rouge River National Wet Weather Demonstration Project. 1997. *Guidance for Preparing a Program for the Elimination of Illicit Discharges*. Wayne County, Michigan.

For Additional Information

Contacts

☞ U.S. EPA Office of Wastewater Management
http://www.epa.gov/npdes/stormwater
Phone: 202-564-9545

☞ Your NPDES Permitting Authority. Most States and Territories are authorized to administer the NPDES Program, except the following, for which EPA is the permitting authority:

Alaska	Guam
District of Columbia	Johnston Atoll
Idaho	Midway and Wake Islands
Massachusetts	Northern Mariana Islands
New Hampshire	Puerto Rico
New Mexico	Trust Territories
American Samoa	

☞ A list of names and telephone numbers for each EPA Region and State is located at http://www.epa.gov/npdes/stormwater (click on "Contacts").

Reference Documents

☞ EPA's Stormwater Web Site
http://www.epa.gov/npdes/stormwater
- Stormwater Phase II Final Rule Fact Sheet Series
- Stormwater Phase II Final Rule (64 *FR* 68722)
- National Menu of Best Management Practices for Stormwater Phase II
- Measurable Goals Guidance for Phase II Small MS4s
- Stormwater Case Studies
- And many others

☞ Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments
http://www.cwp.org/idde_verify.htm



SAN FRANCISCO BAY BASIN (REGION 2)
WATER QUALITY CONTROL PLAN
(BASIN PLAN)

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

1515 Clay Street, Suite 1400
Oakland, CA 94612
(510) 622-2300

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CHAPTER 1: INTRODUCTION

1.1 THE SAN FRANCISCO BAY REGION

The San Francisco Bay Region (Region) is 4,603 square miles, roughly the size of the State of Connecticut, and characterized by its dominant feature, 1,100 square miles of the 1,600 square mile San Francisco Bay Estuary (Estuary), the largest estuary on the west coast of the United States, where fresh waters from California's Central Valley mix with the saline waters of the Pacific Ocean. The Region also includes coastal portions of Marin and San Mateo counties, from Tomales Bay in the north to Pescadero and Butano Creeks in the south.

The Estuary conveys the waters of the Sacramento and San Joaquin rivers into the Pacific Ocean. Located on the central coast of California (Figure 1-1), the Bay system functions as the only drainage outlet for waters of the Central Valley. It also marks natural topographic separation between the northern and southern coastal mountain ranges. The Region's waterways, wetlands, and bays form the centerpiece of the United States' fourth-largest metropolitan region, including all or major portions of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties.

Because of its highly dynamic and complex environmental conditions, the Bay system supports an extraordinarily diverse and productive ecosystem. Within each section of the Bay lie deepwater areas that are adjacent to large expanses of very shallow water. Salinity levels range from hypersaline to fresh water, and water temperature varies throughout the Bay system. These factors greatly increase the number of species that can live in the Estuary and enhance its biological stability.

The Bay system's deepwater channels, tidelands, marshlands, freshwater streams, and rivers provide a wide variety of habitats that have become increasingly vital to the survival of several plant and animal species as other estuaries are reduced in size or lost to development. These areas sustain rich communities of crabs, clams, fish, birds, and other aquatic life and serve both as important wintering sites for migrating waterfowl and as spawning areas for anadromous fish.

1.2 THE BAY SYSTEM'S SURFACE WATER & GROUNDWATER

The Sacramento and San Joaquin rivers, which enter the Bay system through the Delta at the eastern end of Suisun Bay, contribute almost all the freshwater inflow to the Bay. Many small rivers and streams also convey fresh water to the Bay system. The rate and timing of these freshwater flows are among the most important factors influencing physical, chemical, and biological conditions in the Estuary. Much of the freshwater inflow, however, is trapped upstream by the dams, canals, and reservoirs of California's water diversion projects, which provide vital water to industries, farms, homes, and businesses throughout the state. This freshwater diversion has sparked statewide controversy over possible adverse effects on the Estuary's water quality, fisheries, and ecosystem.

Flows in the Region are highly seasonal, with more than 90 percent of the annual runoff occurring during the winter rainy season between October and April. Many streams go dry during the middle or late summer. For example, the Napa River, which is least affected by

upstream regulation, clearly shows the seasonal nature of runoff. Only 4-1/2 percent of this river's average annual runoff occurs during the summer months.

Groundwater is an important component of the hydrologic system in the Region. Groundwater provides excellent natural storage, distribution, and treatment systems. Groundwater also supplies high quality water for drinking, irrigation, and industrial processing and service. As an important source of freshwater replenishment, groundwater may also discharge to surface streams, wetlands, and San Francisco Bay.

A variety of historical and ongoing industrial, urban, and agricultural activities and their associated discharges degrade groundwater quality, including industrial and agricultural chemical spills, underground and above-ground tank and sump leaks, landfill leachate, septic tank failures, and chemical seepage via shallow drainage wells and abandoned wells. In addition, saltwater intrusion directly attributed to over- pumping has degraded the purity of some groundwater aquifers.

These adverse impacts on groundwater quality often have long-term effects that are costly to remediate. Consequently, as additional discharges are identified, source removal, pollution containment, and cleanup must be undertaken as quickly as possible. Activities that may potentially pollute groundwater must be managed to ensure that groundwater quality is protected.

1.3 PROTECTING SAN FRANCISCO BAY: THE WATER BOARD

Because of its unique characteristics, the San Francisco Bay estuarine system merits special protection. The adverse effects of waste discharges must be controlled. Extensive upstream water diversions must be limited, and their effects mitigated. To address these and other water issues, the California Legislature established the State Water Resources Control Board (State Water Board) and the nine Regional Water Quality Control Boards (Regional Water Boards) in 1949. Operating under the provisions of the California Water Code (Water Code), their unique relationship couples state-level coordination and regional familiarity with local needs and conditions. Their joint actions constitute a comprehensive program for managing water quality in California, as well as for effective state administration of federal water pollution control laws.

The State Water Board administers water rights, water pollution control, and water quality functions for the state as part of the California Environmental Protection Agency (Cal/EPA). It provides policy guidance and budgetary authority to the Regional Water Boards, which conduct planning, permitting, and enforcement activities. The State Water Board shares authority for implementation of the federal Clean Water Act and the state Porter-Cologne Act with the Regional Water Boards.

The San Francisco Bay Regional Water Quality Control Board (Water Board) regulates surface water and groundwater quality in the Region. The area under the Water Board's jurisdiction comprises all of the San Francisco Bay segments extending to the mouth of the Sacramento-San Joaquin Delta (Winter Island near Pittsburg).

California's governor appoints the nine-member Water Board, whose members serve for four-year terms. Water Board members must reside or maintain a place of business within the Region and must be associated with or have special knowledge of specific activities related to water quality control. Members of the Water Board serve without pay and conduct their business at regular meetings and frequent public hearings where public participation is encouraged.

The Water Board's overall mission is to protect surface waters and groundwater in the Region. The Water Board carries out its mission by:

- Addressing Region-wide water quality concerns through the creation and triennial update of a Water Quality Control Plan (Basin Plan);
- Preparing new or revised policies addressing Region-wide water quality concerns;
- Adopting, monitoring compliance with, and enforcing waste discharge requirements and National Pollutant Discharge Elimination System (NPDES) permits;
- Providing recommendations to the State Water Board on financial assistance programs, proposals for water diversion, budget development, and other statewide programs and policies;
- Coordinating with other public agencies that are concerned with water quality control; and
- Informing and involving the public on water quality issues.

1.4 WATER QUALITY CONTROL PLAN

By law, the Water Board is required to develop, adopt (after public hearing), and implement a Basin Plan for the Region. The Basin Plan is the master policy document that contains descriptions of the legal, technical, and programmatic bases of water quality regulation in the Region. The plan must include:

- A statement of beneficial water uses that the Water Board will protect;
- The water quality objectives needed to protect the designated beneficial water uses; and
- The strategies and time schedules for achieving the water quality objectives.

The Water Board first adopted a plan for waters inland from the Golden Gate in 1968. After several revisions, the first comprehensive Basin Plan for the Region was adopted by the Water Board and approved by the State Water Board in April 1975. Subsequently, major revisions were adopted in 1982, 1986, 1992, 1995, 2002, and 2004. Each proposed amendment to the Basin Plan is subject to an extensive public review process. The Water Board must then adopt the amendment, which is then subject to approval by the State Water Board. In most cases, the Office of Administrative Law and the U.S. Environmental Protection Agency (U.S. EPA) must approve the amendment as well.

The basin planning process drives the Water Board's effort to manage water quality. The Basin Plan provides a definitive program of actions designed to preserve and enhance water quality and to protect beneficial uses in a manner that will result in maximum benefit to the people of California. The Basin Plan fulfills the following needs:

- The U.S. EPA requires such a plan in order to allocate federal grants to cities and districts for construction of wastewater treatment facilities.
- The Basin Plan provides a basis for establishing priorities as to how both state and federal grants are disbursed for constructing and upgrading wastewater treatment facilities.
- The Basin Plan fulfills the requirements of the Porter-Cologne Act that call for water quality control plans in California.
- The Basin Plan, by defining the resources, services, and qualities of aquatic ecosystems to be maintained, provides a basis for the Water Board to establish or revise waste discharge requirements and for the State Water Board to establish or revise water rights permits.
- The Basin Plan establishes conditions (discharge prohibitions) that must be met at all times.
- The Basin Plan establishes or indicates water quality standards applicable to waters of the Region, as required by the federal Clean Water Act.
- The Basin Plan establishes water quality attainment strategies, including total maximum daily loads (TMDLs) required by the Clean Water Act, for pollutants and water bodies where water quality standards are not currently met.

The intent of this comprehensive planning effort is to provide positive and firm direction for future water quality control. However, adequate provision must be made for changing conditions and technology. The Water Board will review the Basin Plan at least once every three years. Unlike traditional plans, which often become obsolete within a few years after their preparation, the Basin Plan is updated as deemed necessary to maintain pace with technological, hydrological, political, and physical changes in the Region.

This Basin Plan contains water quality regulations adopted by the Water Board, and approved by the State Water Board, the Office of Administrative Law, and U.S. EPA. It also contains statewide regulations adopted by the State Water Board and other state agencies that refer to activities regulated by the Water Board. For the most recent list of statewide regulations applicable in the Region, please refer to the State Water Board's "Compendium of Current, Statewide Applicable Water Quality Regulations." Federal laws and regulations also specify water quality standards and are available at U.S. EPA's website.

1.5 WATERSHED MANAGEMENT PLANNING

In 1995, the Water Board initiated a watershed management approach to regulating water quality, expanding its primary focus from point sources of pollution to include more diffuse sources such as urban and agricultural runoff. A five-year statewide Strategic Plan was completed in 2001 and guides the water resource protection efforts by the State and Regional Water Boards. A key component of the Strategic Plan is the Watershed Management Initiative (WMI).

A watershed is the area of land drained by a stream or river system. It is where water precipitates and collects, extending from ridges down to the topographic low points where the water drains into a river, bay, ocean, or other water body. A watershed includes surface water bodies (e.g., streams, rivers, lakes, reservoirs, wetlands, and estuaries), groundwater (e.g., aquifers and

groundwater basins) and the surrounding landscape. Watershed management is a strategy for protecting water quality in all water bodies by looking at all components that make up a watershed area, including the natural environment, water supply, land uses and their effects on drainage, wastewater collection and discharges, and the ways humans interact with the water bodies.

In the Water Board's watershed management approach to water quality protection, water resource problems are identified and prioritized primarily on the basis of water quality within individual watersheds (i.e., the geographic drainage areas and groundwater basins used for management purposes). Unique solutions are developed for each watershed that consider all local conditions and pollution sources and rely on the input and involvement of local stakeholders. Major features of a watershed management approach are: targeting priority problems based on water quality information and monitoring, promoting stakeholder involvement in prioritization and management decisions, developing integrated solutions that make use of the expertise and authority of multiple agencies and organizations, and measuring success through monitoring and other collected data. The approach culminates in the creation and implementation of "watershed action plans."

The water quality of many water bodies continues to be degraded from pollutants discharged from diffuse sources, referred to as nonpoint sources, and from the cumulative impacts of multiple point sources such as drainage from urban areas, known as urban runoff. This degradation persists despite successful pollutant reduction efforts in the regulation of municipal and industrial wastewater point source discharges through the NPDES program. Watershed management represents a shift from the approach that focuses on regulation of point sources to a more regional approach that acknowledges environmental impacts from all activities, and prioritizes regulation of these activities with input from local stakeholders.

Watersheds transcend political, social, and economic boundaries. It is important to engage all affected stakeholders in designing and implementing goals for the watershed to protect water quality. Groups formed to create watershed action plans may include representatives from all levels of government, public interest groups, industry, academic institutions, private landowners, concerned citizens and others. Tasks in a watershed action plan could include a wide range of actions, such as improving coordination between regulatory and permitting agencies, increasing citizen participation in watershed planning activities, improving public education on water quality and protection issues, and enforcing current regulations on a more consistent and prioritized basis.

1.6 THE SAN FRANCISCO ESTUARY PROJECT

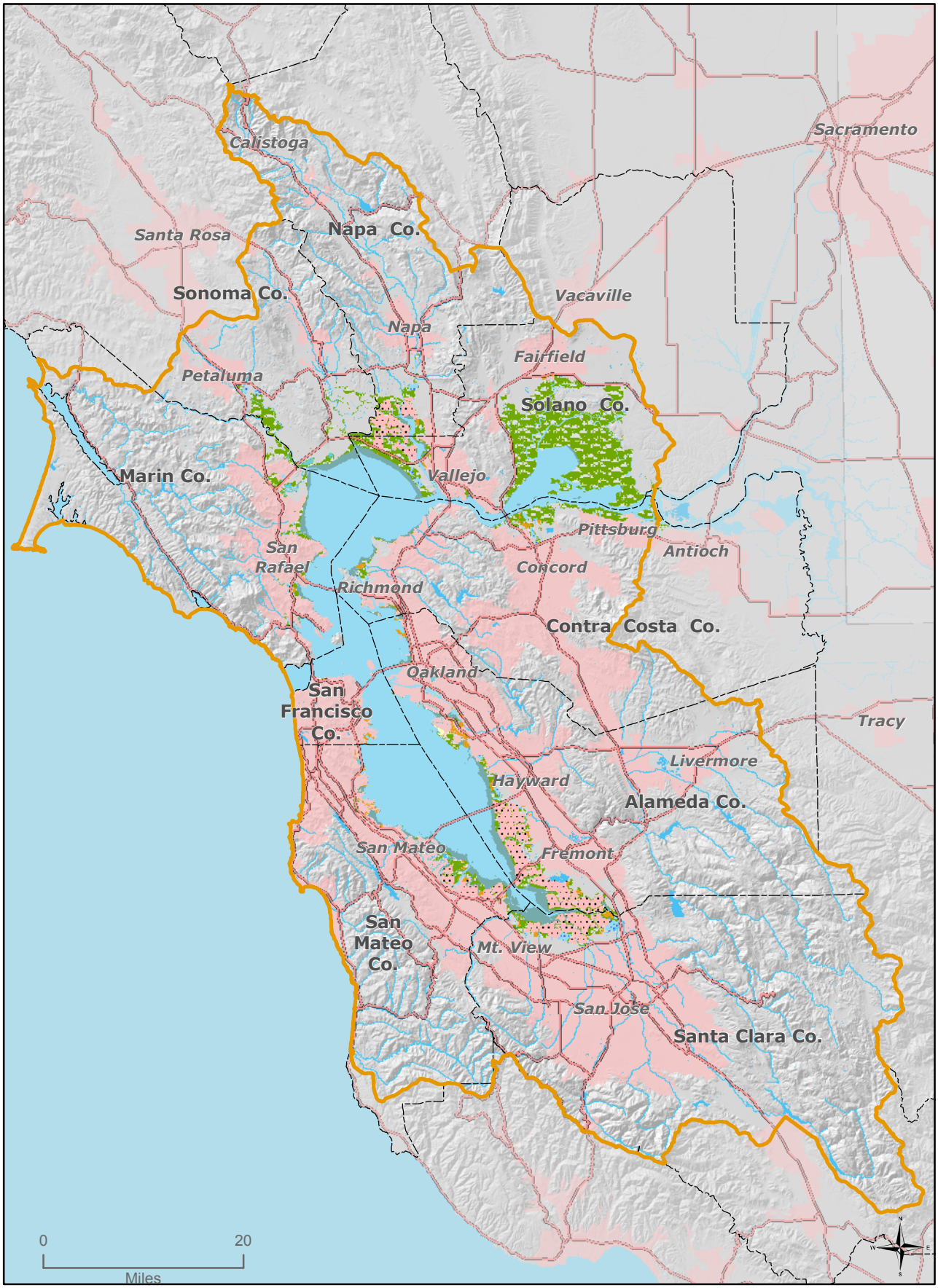
The Water Board has been an active participant in the San Francisco Estuary Project (Estuary Project), a cooperative program aimed at promoting effective, environmentally sound management of the San Francisco Bay Estuary while protecting and restoring its natural resources. In 1993, the Estuary Project reached its goal of developing a Comprehensive Conservation and Management Plan (CCMP). The CCMP addresses five critical concerns identified by the Estuary Project's broad-based advisory committees: decline of biological resources; increased pollutants; freshwater diversion and altered flow regime; dredging and waterway modification; and intensified land use.

Implementation of the CCMP's over 140 recommended actions has been ongoing since the early 1990s. The Water Board serves as lead state agency, undertaking responsibility for ensuring that CCMP actions are carried out. The Estuary Project's Public Involvement and Education Program, which seeks to inform and involve the public in Estuary issues, is currently housed at the Water Board office.

FIGURES

Figure 1-1: San Francisco Bay Basin

Figure 1-1 San Francisco Bay Basin



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CHAPTER 2: BENEFICIAL USES

State policy for water quality control in California is directed toward achieving the highest water quality consistent with maximum benefit to the people of the state. Aquatic ecosystems and underground aquifers provide many different benefits to the people of the state. The beneficial uses described in detail in this chapter define the resources, services, and qualities of these aquatic systems that are the ultimate goals of protecting and achieving high water quality. The Regional Board is charged with protecting all these uses from pollution and nuisance that may occur as a result of waste discharges in the region. Beneficial uses of surface waters, groundwaters, marshes, and mudflats presented here serve as a basis for establishing water quality objectives and discharge prohibitions to attain this goal.

2.1 DEFINITIONS OF BENEFICIAL USES

The following definitions (in italic) for beneficial uses are applicable throughout the entire state. A brief description of the most important water quality requirements for each beneficial use follows each definition (in alphabetical order by abbreviation).

2.1.1 AGRICULTURAL SUPPLY (AGR)

Uses of water for farming, horticulture, or ranching, including, but not limited to, irrigation, stock watering, or support of vegetation for range grazing.

The criteria discussed under municipal and domestic water supply (MUN) also effectively protect farmstead uses. To establish water quality criteria for livestock water supply, the Regional Board must consider the relationship of water to the total diet, including water freely drunk, moisture content of feed, and interactions between irrigation water quality and feed quality. The University of California Cooperative Extension has developed threshold and limiting concentrations for livestock and irrigation water. Continued irrigation often leads to one or more of four types of hazards related to water quality and the nature of soils and crops. These hazards are (1) soluble salt accumulations, (2) chemical changes in the soil, (3) toxicity to crops, and (4) potential disease transmission to humans through reclaimed water use. Irrigation water classification systems, arable soil classification systems, and public health criteria related to reuse of wastewater have been developed with consideration given to these hazards.

2.1.2 AREAS OF SPECIAL BIOLOGICAL SIGNIFICANCE (ASBS)

Areas designated by the State Water Board.

These include marine life refuges, ecological reserves, and designated areas where the preservation and enhancement of natural resources requires special protection. In these areas, alteration of natural water quality is undesirable. The areas that have been designated as ASBS in this Region are Bird Rock, Point Reyes Headland Reserve and Extension, Double Point, Duxbury Reef Reserve and Extension, Farallon Islands, and James V. Fitzgerald Marine Reserve, depicted in Figure 2-1. The 2001 California Ocean Plan (see Chapter 5) prohibits waste discharges into, and requires wastes to be discharged at a sufficient distance from, these areas to assure maintenance

of natural water quality conditions. These areas have been designated as a subset of State Water Quality Protection Areas as per the Public Resources Code.

2.1.3 COLD FRESHWATER HABITAT (COLD)

Uses of water that support cold water ecosystems, including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

Cold freshwater habitats generally support trout and may support the anadromous salmon and steelhead fisheries as well. Cold water habitats are commonly well-oxygenated. Life within these waters is relatively intolerant to environmental stresses. Often, soft waters feed cold water habitats. These waters render fish more susceptible to toxic metals, such as copper, because of their lower buffering capacity.

2.1.4 OCEAN, COMMERCIAL, AND SPORT FISHING (COMM)

Uses of water for commercial or recreational collection of fish, shellfish, or other organisms in oceans, bays, and estuaries, including, but not limited to, uses involving organisms intended for human consumption or bait purposes.

To maintain ocean fishing, the aquatic life habitats where fish reproduce and seek their food must be protected. Habitat protection is under descriptions of other beneficial uses.

2.1.5 ESTUARINE HABITAT (EST)

Uses of water that support estuarine ecosystems, including, but not limited to, preservation or enhancement of estuarine habitats, vegetation, fish, shellfish, or wildlife (e.g., estuarine mammals, waterfowl, shorebirds), and the propagation, sustenance, and migration of estuarine organisms.

Estuarine habitat provides an essential and unique habitat that serves to acclimate anadromous fishes (salmon, striped bass) migrating into fresh or marine water conditions. The protection of estuarine habitat is contingent upon (1) the maintenance of adequate Delta outflow to provide mixing and salinity control; and (2) provisions to protect wildlife habitat associated with marshlands and the Bay periphery (i.e., prevention of fill activities). Estuarine habitat is generally associated with moderate seasonal fluctuations in dissolved oxygen, pH, and temperatur and with a wide range in turbidity.

2.1.6 FRESHWATER REPLENISHMENT (FRESH)

Uses of water for natural or artificial maintenance of surface water quantity or quality.

2.1.7 GROUNDWATER RECHARGE (GWR)

Uses of water for natural or artificial recharge of groundwater for purposes of future extraction, maintenance of water quality, or halting saltwater intrusion into freshwater aquifers.

The requirements for groundwater recharge operations generally reflect the future use to be made of the water stored underground. In some cases, recharge operations may be conducted to prevent seawater intrusion. In these cases, the quality of recharged waters may not directly affect quality at the wellfield being protected. Recharge operations are often limited by excessive suspended sediment or turbidity that can clog the surface of recharge pits, basins, or wells.

Under the state Antidegradation Policy, the quality of some of the waters of the state is higher than established by adopted policies. It is the intent of this policy to maintain that existing higher quality to the maximum extent possible.

Requirements for groundwater recharge, therefore, shall impose the Best Available Technology (BAT) or Best Management Practices (BMPs) for control of the discharge as necessary to assure the highest quality consistent with maximum benefit to the people of the state. Additionally, it must be recognized that groundwater recharge occurs naturally in many areas from streams and reservoirs. This recharge may have little impact on the quality of groundwaters under normal circumstances, but it may act to transport pollutants from the recharging water body to the groundwater. Therefore, groundwater recharge must be considered when requirements are established.

2.1.8 INDUSTRIAL SERVICE SUPPLY (IND)

Uses of water for industrial activities that do not depend primarily on water quality, including, but not limited to, mining, cooling water supply, hydraulic conveyance, gravel washing, fire protection, and oil well repressurization.

Most industrial service supplies have essentially no water quality limitations except for gross constraints, such as freedom from unusual debris.

2.1.9 MARINE HABITAT (MAR)

Uses of water that support marine ecosystems, including, but not limited to, preservation or enhancement of marine habitats, vegetation such as kelp, fish, shellfish, or wildlife (e.g., marine mammals, shorebirds).

In many cases, the protection of marine habitat will be accomplished by measures that protect wildlife habitat generally, but more stringent criteria may be necessary for waterfowl marshes and other habitats, such as those for shellfish and marine fishes. Some marine habitats, such as important intertidal zones and kelp beds, may require special protection.

2.1.10 FISH MIGRATION (MIGR)

Uses of water that support habitats necessary for migration, acclimatization between fresh water and salt water, and protection of aquatic organisms that are temporary inhabitants of waters within the region.

The water quality provisions acceptable to cold water fish generally protect anadromous fish as well. However, particular attention must be paid to maintaining zones of passage. Any barrier to migration or free movement of migratory fish is harmful. Natural tidal movement in estuaries

and unimpeded river flows are necessary to sustain migratory fish and their offspring. A water quality barrier, whether thermal, physical, or chemical, can destroy the integrity of the migration route and lead to the rapid decline of dependent fisheries.

Water quality may vary through a zone of passage as a result of natural or human- induced activities. Fresh water entering estuaries may float on the surface of the denser salt water or hug one shore as a result of density differences related to water temperature, salinity, or suspended matter.

2.1.11 MUNICIPAL AND DOMESTIC SUPPLY (MUN)

Uses of water for community, military, or individual water supply systems, including, but not limited to, drinking water supply.

The principal issues involving municipal water supply quality are (1) protection of public health; (2) aesthetic acceptability of the water; and (3) the economic impacts associated with treatment- or quality-related damages.

The health aspects broadly relate to: direct disease transmission, such as the possibility of contracting typhoid fever or cholera from contaminated water; toxic effects, such as links between nitrate and methemoglobinemia (blue babies); and increased susceptibility to disease, such as links between halogenated organic compounds and cancer.

Aesthetic acceptance varies widely depending on the nature of the supply source to which people have become accustomed. However, the parameters of general concern are excessive hardness, unpleasant odor or taste, turbidity, and color. In each case, treatment can improve acceptability although its cost may not be economically justified when alternative water supply sources of suitable quality are available.

Published water quality objectives give limits for known health-related constituents and most properties affecting public acceptance. These objectives for drinking water include the U.S. Environmental Protection Agency Drinking Water Standards and the California State Department of Health Services criteria.

2.1.12 NAVIGATION (NAV)

Uses of water for shipping, travel, or other transportation by private, military, or commercial vessels.

2.1.13 INDUSTRIAL PROCESS SUPPLY (PROC)

Uses of water for industrial activities that depend primarily on water quality.

Water quality requirements differ widely for the many industrial processes in use today. So many specific industrial processes exist with differing water quality requirements that no meaningful criteria can be established generally for quality of raw water supplies. Fortunately, this is not a serious shortcoming, since current water treatment technology can create desired product waters tailored for specific uses.

2.1.14 PRESERVATION OF RARE AND ENDANGERED SPECIES (RARE)

Uses of waters that support habitats necessary for the survival and successful maintenance of plant or animal species established under state and/or federal law as rare, threatened, or endangered.

The water quality criteria to be achieved that would encourage development and protection of rare and endangered species should be the same as those for protection of fish and wildlife habitats generally. However, where rare or endangered species exist, special control requirements may be necessary to assure attainment and maintenance of particular quality criteria, which may vary slightly with the environmental needs of each particular species. Criteria for species using areas of special biological significance should likewise be derived from the general criteria for the habitat types involved, with special management diligence given where required.

2.1.15 WATER CONTACT RECREATION (REC1)

Uses of water for recreational activities involving body contact with water where ingestion of water is reasonably possible. These uses include, but are not limited to, swimming, wading, water-skiing, skin and scuba diving, surfing, whitewater activities, fishing, and uses of natural hot springs.

Water contact implies a risk of waterborne disease transmission and involves human health; accordingly, criteria required to protect this use are more stringent than those for more casual water-oriented recreation.

Excessive algal growth has reduced the value of shoreline recreation areas in some cases, particularly for swimming. Where algal growths exist in nuisance proportions, particularly bluegreen algae, all recreational water uses, including fishing, tend to suffer.

One criterion to protect the aesthetic quality of waters used for recreation from excessive algal growth is based on chlorophyll a.

2.1.16 NONCONTACT WATER RECREATION (REC2)

Uses of water for recreational activities involving proximity to water, but not normally involving contact with water where water ingestion is reasonably possible. These uses include, but are not limited to, picnicking, sunbathing, hiking, beachcombing, camping, boating, tide pool and marine life study, hunting, sightseeing, or aesthetic enjoyment in conjunction with the above activities.

Water quality considerations relevant to noncontact water recreation, such as hiking, camping, or boating, and those activities related to tide pool or other nature studies require protection of habitats and aesthetic features. In some cases, preservation of a natural wilderness condition is justified, particularly when nature study is a major dedicated use.

One criterion to protect the aesthetic quality of waters used for recreation from excessive algal growth is based on chlorophyll a.

2.1.17 SHELLFISH HARVESTING (SHELL)

Uses of water that support habitats suitable for the collection of crustaceans and filter-feeding shellfish (e.g., clams, oysters, and mussels) for human consumption, commercial, or sport purposes.

Shellfish harvesting areas require protection and management to preserve the resource and protect public health. The potential for disease transmission and direct poisoning of humans is of considerable concern in shellfish regulation. The bacteriological criteria for the open ocean, bays, and estuarine waters where shellfish cultivation and harvesting occur should conform with the standards described in the National Shellfish Sanitation Program, Manual of Operation.

Toxic metals can accumulate in shellfish. Mercury and cadmium are two metals known to have caused extremely disabling effects in humans who consumed shellfish that concentrated these elements from industrial waste discharges. Other elements, radioactive isotopes, and certain toxins produced by particular plankton species also concentrate in shellfish tissue. Documented cases of paralytic shellfish poisoning are not uncommon in California.

2.1.18 FISH SPAWNING (SPWN)

Uses of water that support high quality aquatic habitats suitable for reproduction and early development of fish.

Dissolved oxygen levels in spawning areas should ideally approach saturation levels. Free movement of water is essential to maintain well-oxygenated conditions around eggs deposited in sediments. Water temperature, size distribution and organic content of sediments, water depth, and current velocity are also important determinants of spawning area adequacy.

2.1.19 WARM FRESHWATER HABITAT (WARM)

Uses of water that support warm water ecosystems including, but not limited to, preservation or enhancement of aquatic habitats, vegetation, fish, or wildlife, including invertebrates.

The warm freshwater habitats supporting bass, bluegill, perch, and other panfish are generally lakes and reservoirs, although some minor streams will serve this purpose where stream flow is sufficient to sustain the fishery. The habitat is also important to a variety of nonfish species, such as frogs, crayfish, and insects, which provide food for fish and small mammals. This habitat is less sensitive to environmental changes, but more diverse than the cold freshwater habitat, and natural fluctuations in temperature, dissolved oxygen, pH, and turbidity are usually greater.

2.1.20 WILDLIFE HABITAT (WILD)

Uses of waters that support wildlife habitats, including, but not limited to, the preservation and enhancement of vegetation and prey species used by wildlife, such as waterfowl.

The two most important types of wildlife habitat are riparian and wetland habitats. These habitats can be threatened by development, erosion, andsedimentation, as well as by poor water quality.

The water quality requirements of wildlife pertain to the water directly ingested, the aquatic habitat itself, and the effect of water quality on the production of food materials. Waterfowl habitat is particularly sensitive to changes in water quality. Dissolved oxygen, pH, alkalinity, salinity, turbidity, settleable matter, oil, toxicants, and specific disease organisms are water quality characteristics particularly important to waterfowl habitat. Dissolved oxygen is needed in waterfowl habitats to suppress development of botulism organisms; botulism has killed millions of waterfowl. It is particularly important to maintain adequate circulation and aerobic conditions in shallow fringe areas of ponds or reservoirs where botulism has caused problems.

2.2 PRESENT AND POTENTIAL BENEFICIAL USES

2.2.1 SURFACE WATERS

Surface waters in the Region consist of non-tidal wetlands, rivers, streams, and lakes (collectively described as inland surface waters), estuarine wetlands known as baylands, estuarine waters, and coastal waters. In this Region, estuarine waters consist of the Bay system including intertidal, tidal, and subtidal habitats from the Golden Gate to the Region's boundary near Pittsburg and the lower portions of streams that are affected by tidal hydrology, such as the Napa and Petaluma rivers in the north and Coyote and San Francisquito creeks in the south.

Inland surface waters support or could support most of the beneficial uses described above. The specific beneficial uses for inland streams include municipal and domestic supply (MUN), agricultural supply (AGR), industrial process supply (PRO), groundwater recharge (GWR), water contact recreation (REC1), noncontact water recreation (REC2), wildlife habitat (WILD), cold freshwater habitat (COLD), warm freshwater habitat (WARM), fish migration (MIGR), and fish spawning (SPWN). The San Francisco Bay Estuary supports estuarine habitat (EST), industrial service supply (IND), and navigation (NAV) in addition to all of the uses supported by streams.

Coastal waters' beneficial uses include water contact recreation (REC1); noncontact water recreation (REC2); industrial service supply (IND); navigation (NAV); marine habitat (MAR); shellfish harvesting (SHELL); ocean, commercial and sport fishing (COMM); and preservation of rare and endangered species (RARE). In addition, the California coastline within the Region is endowed with exceptional scenic beauty.

Beneficial uses of each significant water body have been identified and are organized according to the seven major hydrologic units within the Region (Figure 2-2). Table 2-1 contains the beneficial uses for water bodies that have been designated in the Region. The maps locating each water body (Figures 2-3 through 2-9) were produced using a geographical information system (GIS) at the Water Board. The maps use the hydrologic basin information compiled by the California Interagency Watershed map, with supplemental information from the Oakland Museum of California Creek and Watershed Map series, the Contra Costa County Watershed Atlas, and the San Francisco Estuary Institute EcoAtlas. More detailed representations of each location can be created using this GIS version.

The beneficial uses of any specifically identified water body generally apply to all its tributaries. In some cases a beneficial use may not be applicable to the entire body of water, such as navigation in Richardson Bay or shellfish harvesting in the Pacific Ocean. In these cases, the

Water Board's judgment regarding water quality control measures necessary to protect beneficial uses will be applied.

2.2.2 GROUNDWATER

Groundwater is defined as subsurface water that occurs beneath the water table in soils and geologic formations that are fully saturated. Where groundwater occurs in a saturated geologic unit that contains sufficient permeable thickness to yield significant quantities of water to wells and springs, it can be defined as an aquifer. A groundwater basin is defined as a hydrogeologic unit containing one large aquifer or several connected and interrelated aquifers.

Water-bearing geologic units occur within groundwater basins in the Region that do not meet the definition of an aquifer. For instance, there are shallow, low permeability zones throughout the Region that have extremely low water yields. Groundwater may also occur outside of currently identified basins. Therefore, for basin planning purposes, the term "groundwater" includes all subsurface waters, whether or not these waters meet the classic definition of an aquifer or occur within identified groundwater basins.

The California Department of Water Resources (DWR) evaluated the characteristics of groundwater basins in the Region and throughout the state and summarized the results in California's Groundwater, Bulletin 118 (2003). Of special importance to the Region are the 28 groundwater basins and seven sub-basins classified by DWR that produce, or potentially could produce, significant amounts of groundwater (Figures 2-10 and 2-10A-D). The Water Board maintains a GIS for all water bodies in the Region and has the capacity to present information on each basin at a much higher level of resolution than is depicted in Figures 2-10A-D.

Existing and potential beneficial uses applicable to groundwater in the Region include municipal and domestic water supply (MUN), industrial water supply (IND), industrial process supply (PRO), agricultural water supply (AGR), groundwater recharge (GWR), and freshwater replenishment to surface waters (FRESH). Table 2-2 lists the 28 identified groundwater basins and seven sub-basins located in the Region and their existing and potential beneficial uses.

Unless otherwise designated by the Water Board, all groundwater is considered suitable, or potentially suitable, for municipal or domestic water supply (MUN). In making any exceptions, the Water Board will consider the criteria referenced in State Water Board Resolution No. 88-63 and Water Board Resolution No. 89-39, "Sources of Drinking Water," where:

- The total dissolved solids exceed 3,000 milligrams per liter (mg/L) (5,000 microSiemens per centimeter, μS/cm, electrical conductivity), and it is not reasonably expected by the Water Board that the groundwater could supply a public water system; or
- There is contamination, either by natural processes or by human activity (unrelated to a specific pollution incident), that cannot reasonably be treated for domestic use using either Best Management Practices (BMPs) or best economically achievable treatment practices; or
- The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day; or

- The aquifer is regulated as a geothermal energy-producing source or has been exempted administratively pursuant to 40 Code of Federal Regulations (CFR) Part 146.4 for the purpose of underground injection of fluids associated with the production of hydrocarbon or geothermal energy, provided that these fluids do not constitute a hazardous waste under 40 CFR Part 261.3.

2.2.3 WETLANDS

Federal administrative law (e.g., 40 CFR Part 122.2, revised December 22, 1993) defines wetlands as waters of the United States. National waters include waters of the State of California, defined by the Porter-Cologne Act as "any water, surface or underground, including saline waters, within the boundaries of the State" (California Water Code §13050[e]). Wetland water quality control is therefore clearly within the jurisdiction of the State Water Board and Regional Water Boards.

Wetlands are further defined in 40 CFR 122.2 as "those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

The Water Board recognizes that wetlands frequently include areas commonly referred to as saltwater marshes, freshwater marshes, open or closed brackish water marshes, mudflats, sandflats, unvegetated seasonally ponded areas, vegetated shallows, sloughs, wet meadows, playa lakes, natural ponds, vernal pools, diked baylands, seasonal wetlands, floodplains, and riparian woodlands.

Mudflats make up one of the largest and most important habitat types in the Estuary. Snails, clams, worms, and other animals convert the rich organic matter in the mud bottom to food for fish, crabs, and birds.

Mudflats generally support a variety of edible shellfish, and many species of fish rely heavily on the mudflats during at least a part of their life cycle. Additionally, San Francisco Bay mudflats are one of the most important habitats on the coast of California for millions of migrating shorebirds.

Another important characteristic of the Estuary is the fresh, brackish, and salt water marshes around the Bay's margins. These highly complex communities are recognized as vital components of the Bay system's ecology. Most marshes around the Bay have been destroyed through filling and development. The protection, preservation, and restoration of the remaining marsh communities are essential for maintaining the ecological integrity of the Estuary.

Identifying wetlands may be complicated by such factors as the seasonality of rainfall in the Region. Therefore, in identifying wetlands considered waters of the United States, the Water Board will consider such indicators as hydrology, hydrophytic plants, and/or hydric soils for the purpose of mapping and inventorying wetlands. The Water Board will, in general, rely on the federal manual for wetland delineation in the Region when issuing Clean Water Act Section 401 water quality certifications (U.S. Army Corps of Engineers (Corps) Wetlands Delineation Manual, 1987). In the rare cases where the U.S. EPA and Corps guidelines disagree on the boundaries for federal juridictional wetlands, the Water Board will rely on the wetlands delineation made by the

U.S. EPA or the California Department of Fish and Game (CDFG). For the purpose of mapping and inventorying wetlands, the Water Board will rely on the protocols and naming conventions of the National Wetlands Inventory (NWI) prepared by the U.S. Fish and Wildlife Service (USFWS).

Many individual wetlands provide multiple benefits depending on the wetland type and location. There are many potential beneficial uses of wetlands, including Wildlife Habitat (WILD); Preservation of Rare and Endangered Species (RARE); Shellfish Harvesting (SHELL); Water Contact Recreation (REC1); Noncontact Water Recreation (REC2); Ocean, Commercial, and Sport Fishing (COMM); Marine Habitat (MAR); Fish Migration (MIGR); Fish Spawning (SPAWN); and Estuarine Habitat (EST). Some of these general beneficial uses can be further described in terms of their component wetland function. For example, many wetlands that provide groundwater recharge (GWR) also provide flood control, pollution control, erosion control, and stream baseflow.

Table 2-3 shows how beneficial uses are associated with different wetland types. Table 2-3 lists and specifies beneficial uses for 34 significant wetland areas within the Region; generalized locations of these wetlands are shown in Figure 2-11. It should be noted that most of the wetlands listed in Table 2-3 are saltwater marshes, and that the list is not comprehensive.

The Water Board has participated in completing the Baylands Ecosystem Habitat Goals Report (1999) and the Baylands Ecosystem Species and Community Profiles (2000), which were written by scientists and managers in the Region in order to recommend sound wetland restoration strategies. Other efforts around the Bay to locate wetland sites include San Francisco Estuary Institute's (SFEI) EcoAtlas Baylands Maps (Baylands Maps) and Bay Area Wetlands Project Tracker (Wetlands Tracker), and the Wetland Tracker managed by the San Francisco Bay Joint Venture. Because of the large number of small and non-contiguous wetlands, it is not practical to delineate and specify beneficial uses of every wetland area. Therefore, beneficial uses may be determined site specifically, as needed. Chapter 4 of this Plan contains additional information on the process used to determine beneficial uses for specific wetland sites.

FIGURES

Figure 2-1: Areas of Special Biological Significance

Figure 2-2: Hydrologic Planning Areas

Figure 2-3: Marin Coastal Basin

Legend for Figures 2-3 through 2-9

Figure 2-4: San Mateo Coastal Basin

Figure 2-5: Central Basin

Figure 2-6: South Bay Basin

Figure 2-7: Santa Clara Basin

Figure 2-8: San Pablo Basin

Figure 2-9: Suisun Basin

Figure 2-10: Significant Groundwater Basins

Figure 2-10A: Groundwater Basins: Marin / Sonoma / Napa

Figure 2-10B: Groundwater Basins: Napa / Solano

Figure 2-10C: Groundwater Basins: San Francisco

Figure 2-10D: Groundwater Basins: East and South Bay

Figure 2-11: General Locations of Wetland Areas

TABLES

Table 2-1: Existing and Potential Beneficial Uses of Water Bodies in the San Francisco Bay Region

Table 2-2: Existing and Potential Beneficial Uses of Groundwater in Identified Basins

Table 2-3: Examples of Existing and Potential Beneficial Uses of Selected Wetlands

Table 2-4: Examples of Beneficial Uses of Wetland Areas

Figure 2-1 Areas of Special Biological Significance

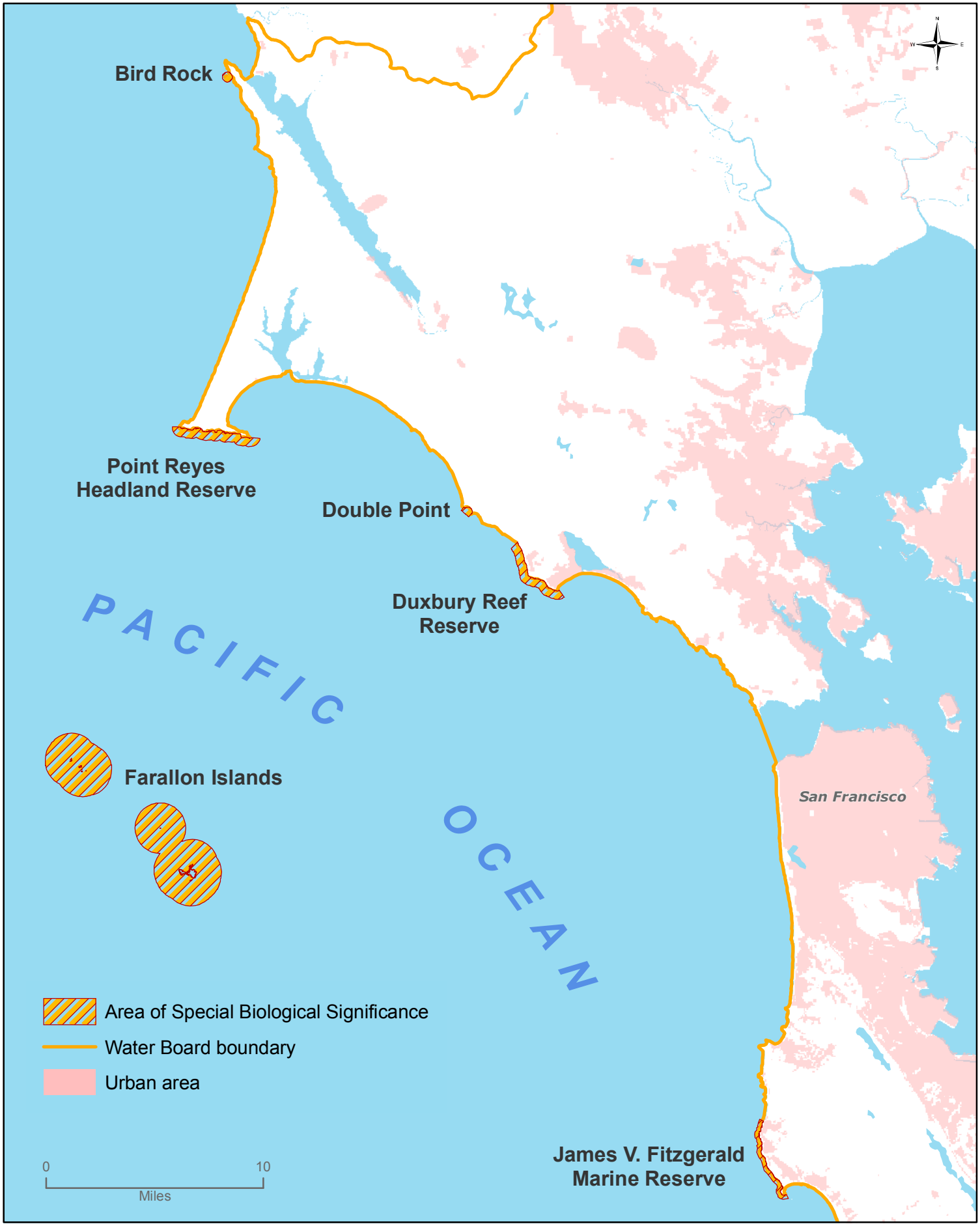
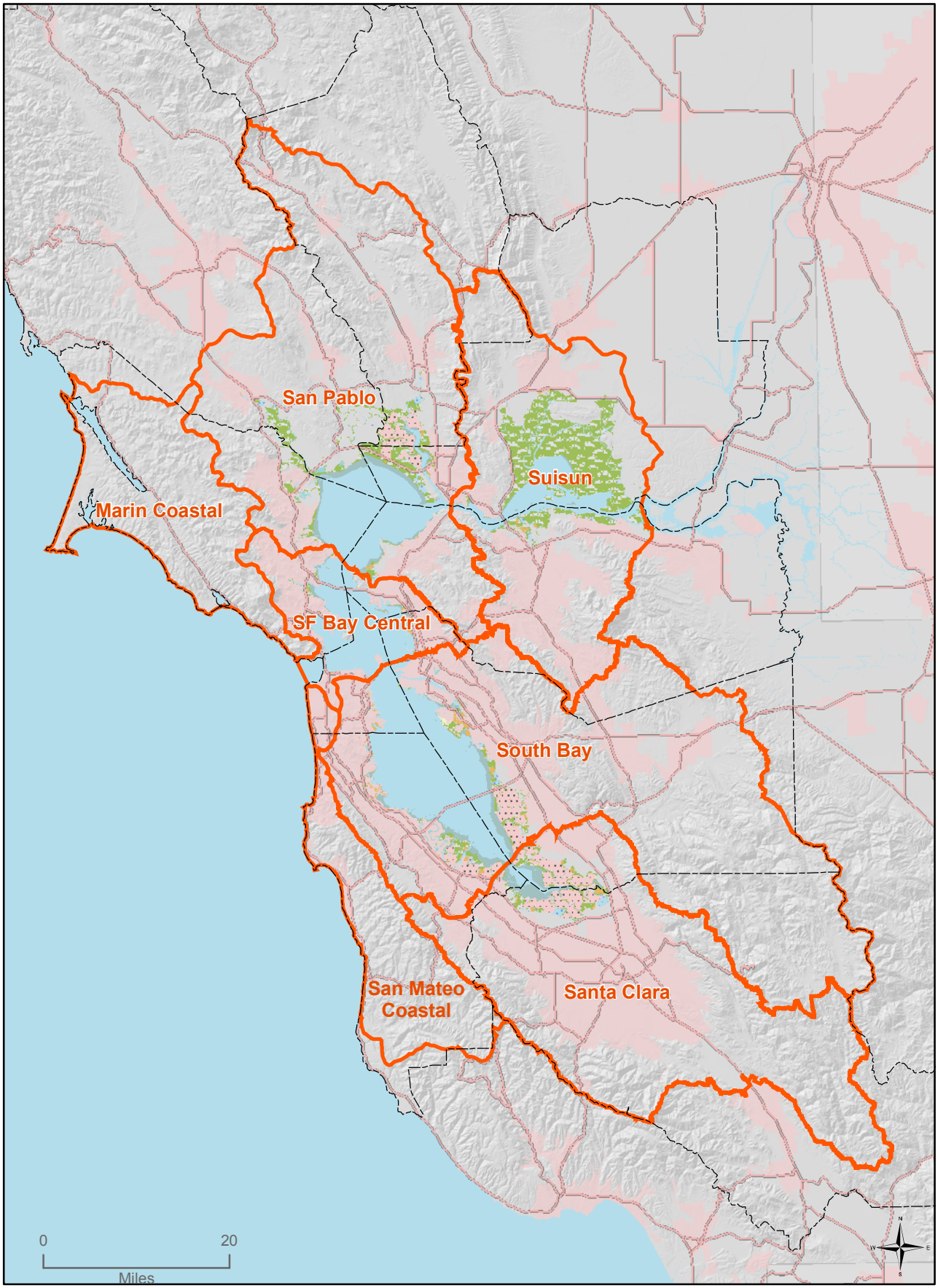


Figure 2-2 Hydrologic Planning Areas



Legend for Figures 2-3 to 2-9

Watershed boundaries


Basin boundary

Watershed boundary

Hydrologic features

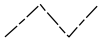

Streams / creeks listed in Table 2-1


Other streams / tributaries

Bay or ocean


Lake, reservoir or other water body

Other features


County boundary


Major road or highway

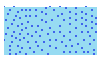
Urban area

Wetlands


Marshlands


Salt pond


Tidal flats


Storage or treatment basin


Undeveloped fill

Sand dune


Other baylands

All maps are in Universal Transverse Mercator projection (Zone 10), North American Datum 1983.

<u>Map sources:</u>

Basin boundaries: California Interagency Watershed Map of 1999 (CalWater 2.2.1).

Watershed boundaries: California Interagency Watershed Map of 1999 (CalWater 2.2.1); Contra Costa County Watershed Atlas; Creek and Watershed Map of Oakland and Berkeley (Oakland Museum of California); Creek and Watershed Map of Milpitas and North San Jose (Oakland Museum of California); Creek and Watershed Map of Palo Alto and Vicinity (Oakland Museum of California); Creek and Watershed Map of Fremont and Vicinity (Oakland Museum of California); Creek and Watershed Map of the Pleasanton and Dublin Area (Oakland Museum of California).

Hydrologic features: National Hydrologic Dataset (1:24000 scale) for hydrologic unit numbers 18050001 (Suisun), 18050002 (San Pablo), 18050003 (Santa Clara), 18050004 (South Bay), 18050005 (Marin Coastal) and 18050006 (San Mateo Coastal).

Wetlands: San Francisco Estuary Institute EcoAtlas (v. 1.50b4).

County boundaries: California Spatial Information Library.

Major roads and highways: GDT 2004.

Urban areas: Association of Bay Area Governments Land Use / Land Cover dataset, 1996, land use category 1 (urban areas).

Figure 2-3 Marin Coastal Basin



Figure 2-4 San Mateo Coastal Basin



Figure 2-5 Central Basin

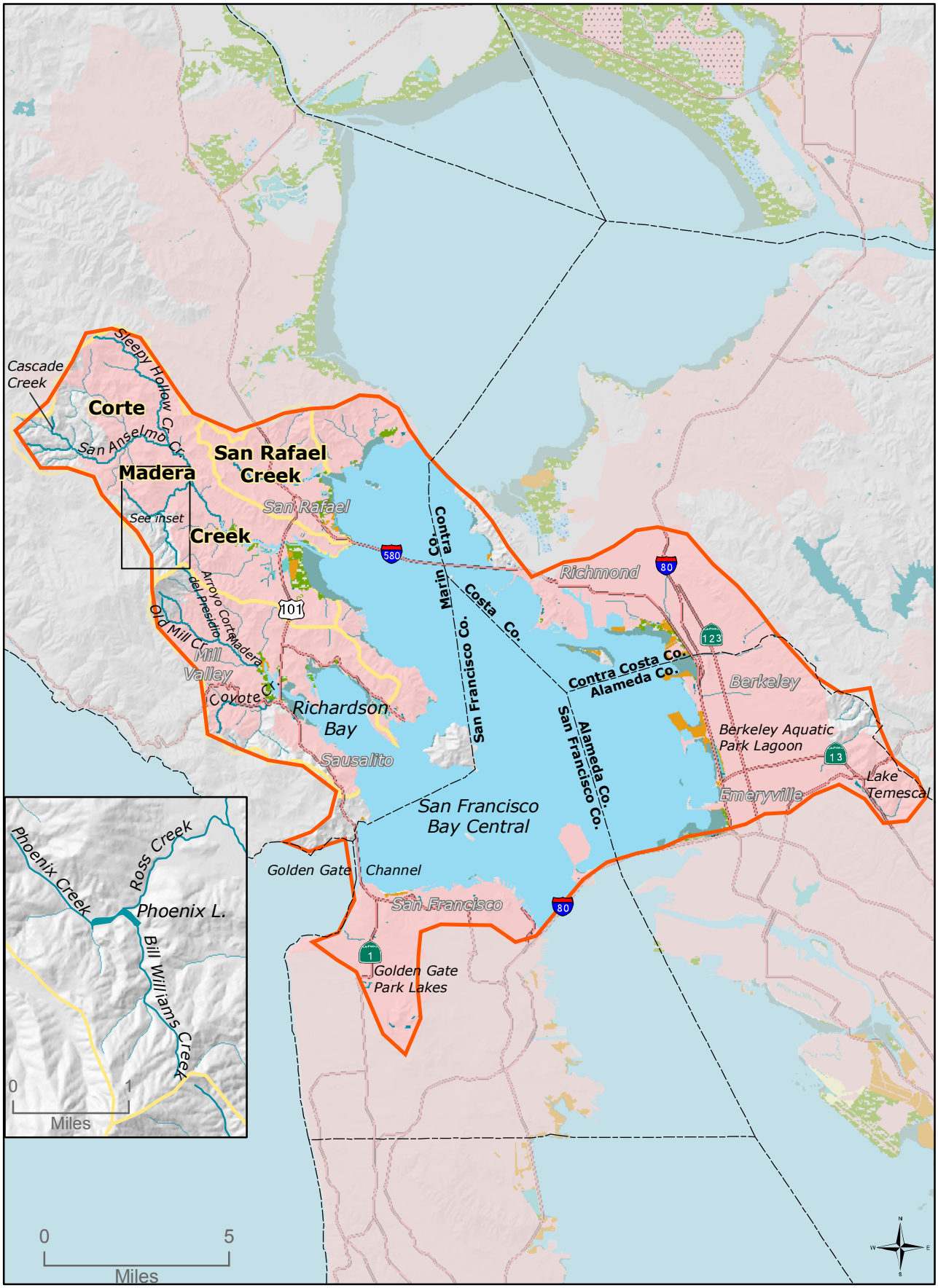


Figure 2-6 South Bay Basin

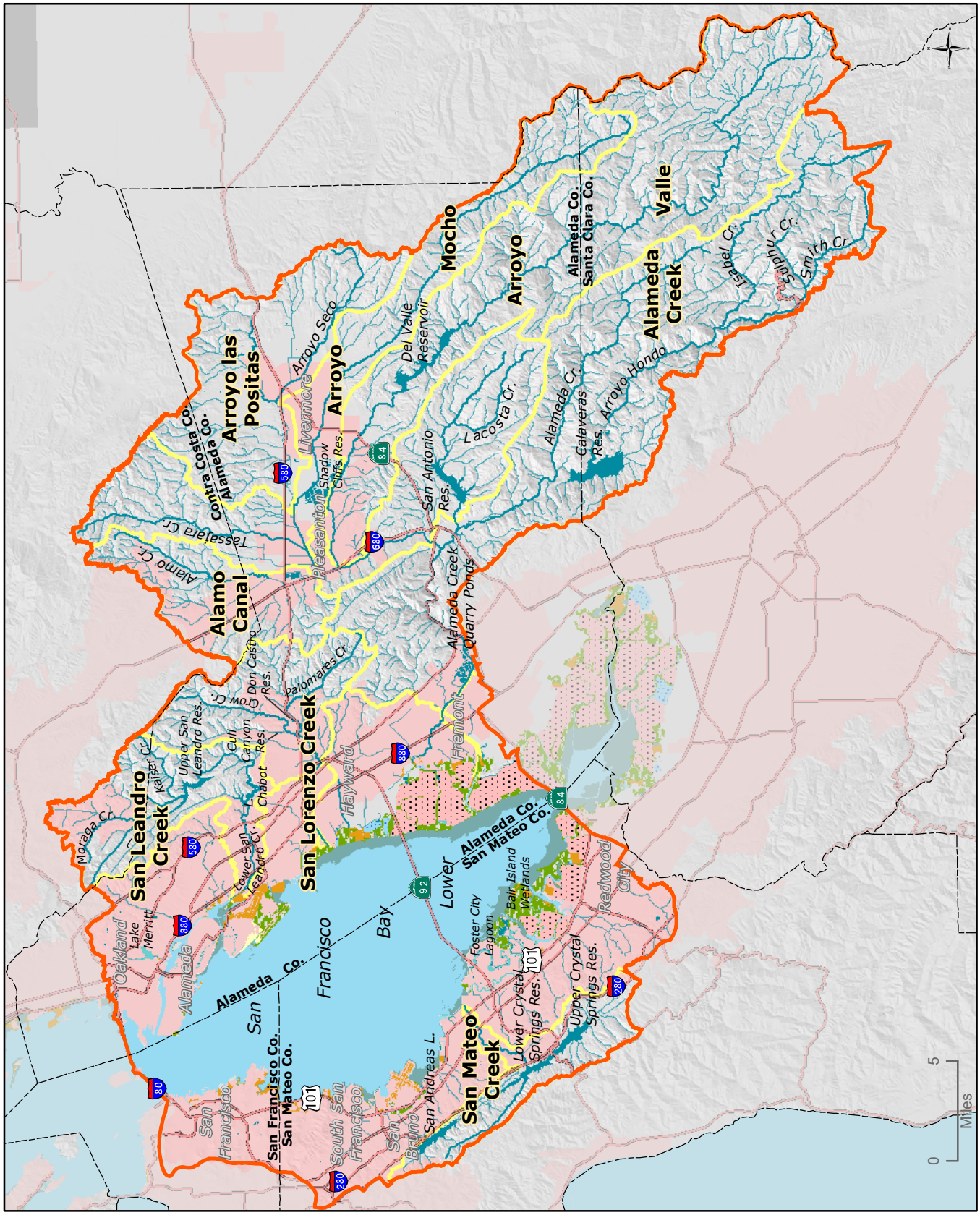


Figure 2-7 Santa Clara Basin

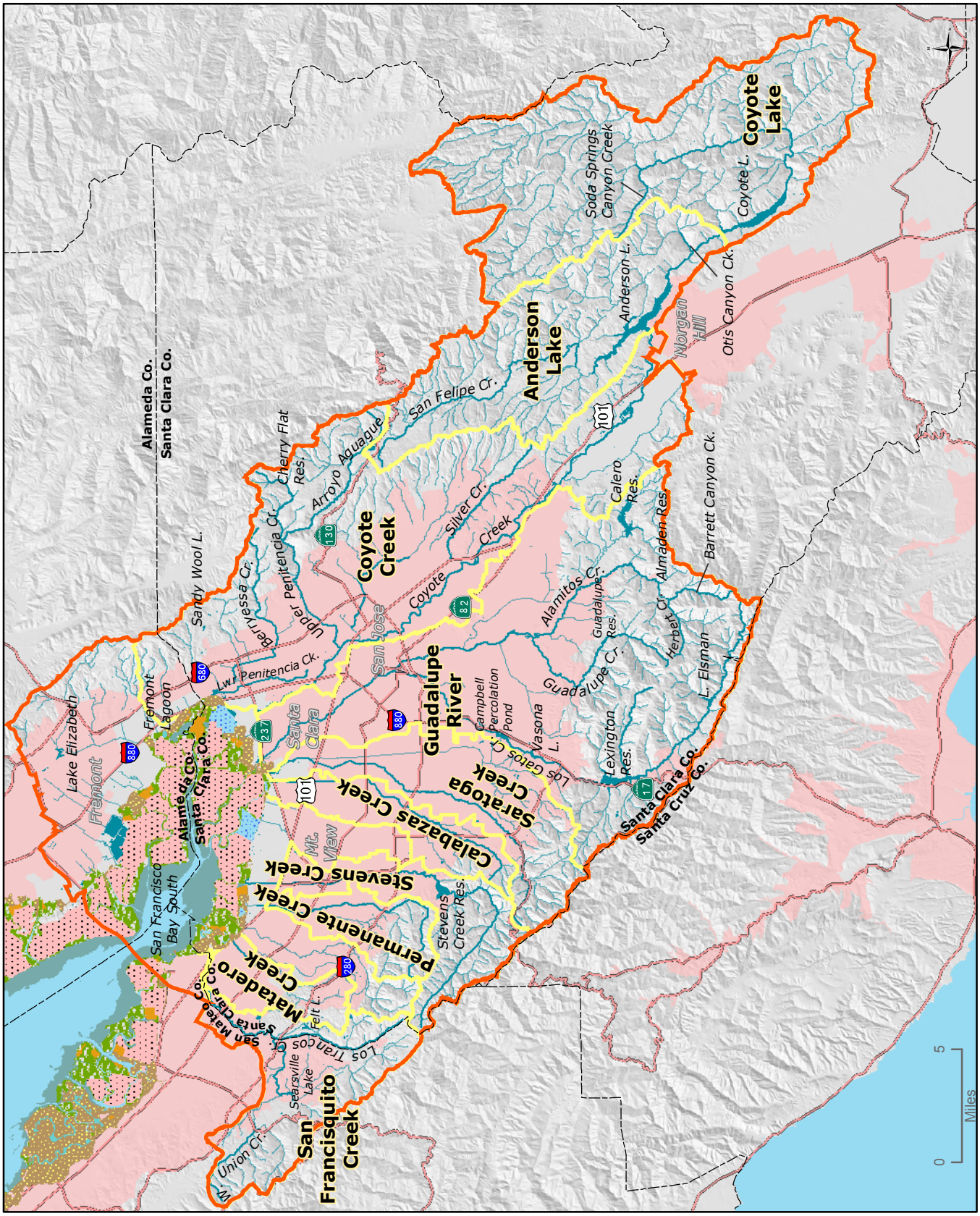


Figure 2-8 San Pablo Basin

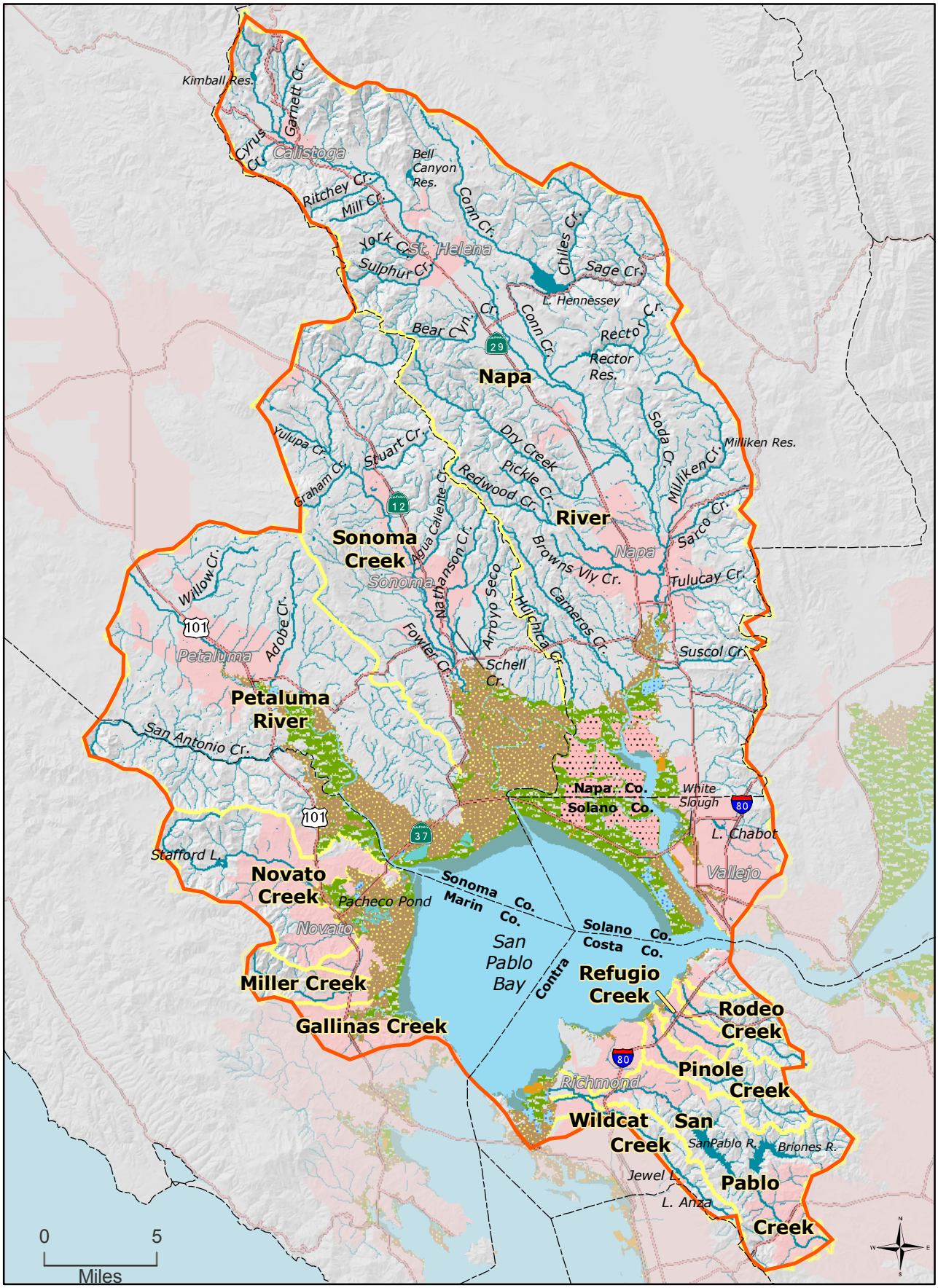


Figure 2-9 Suisun Basin

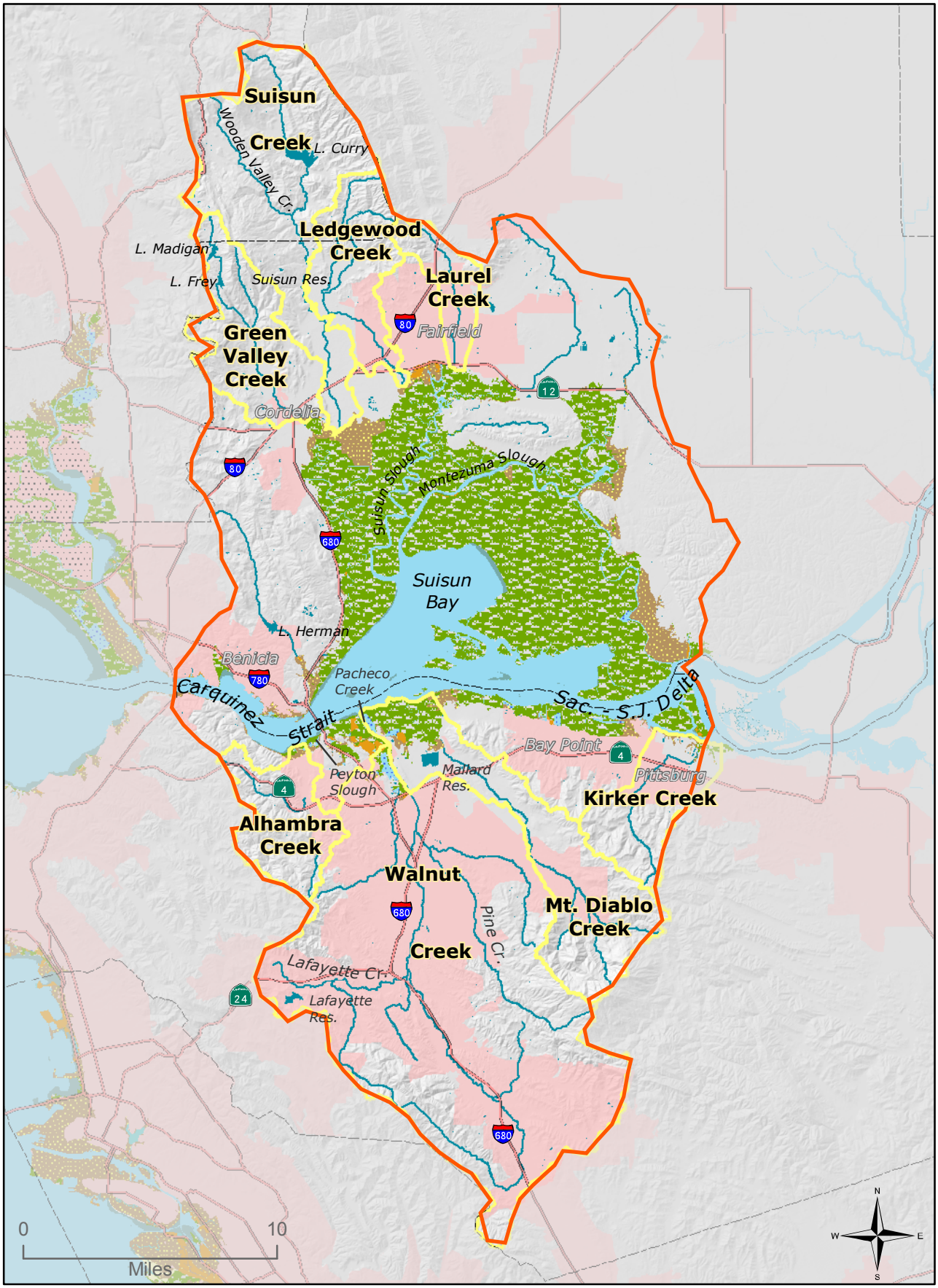
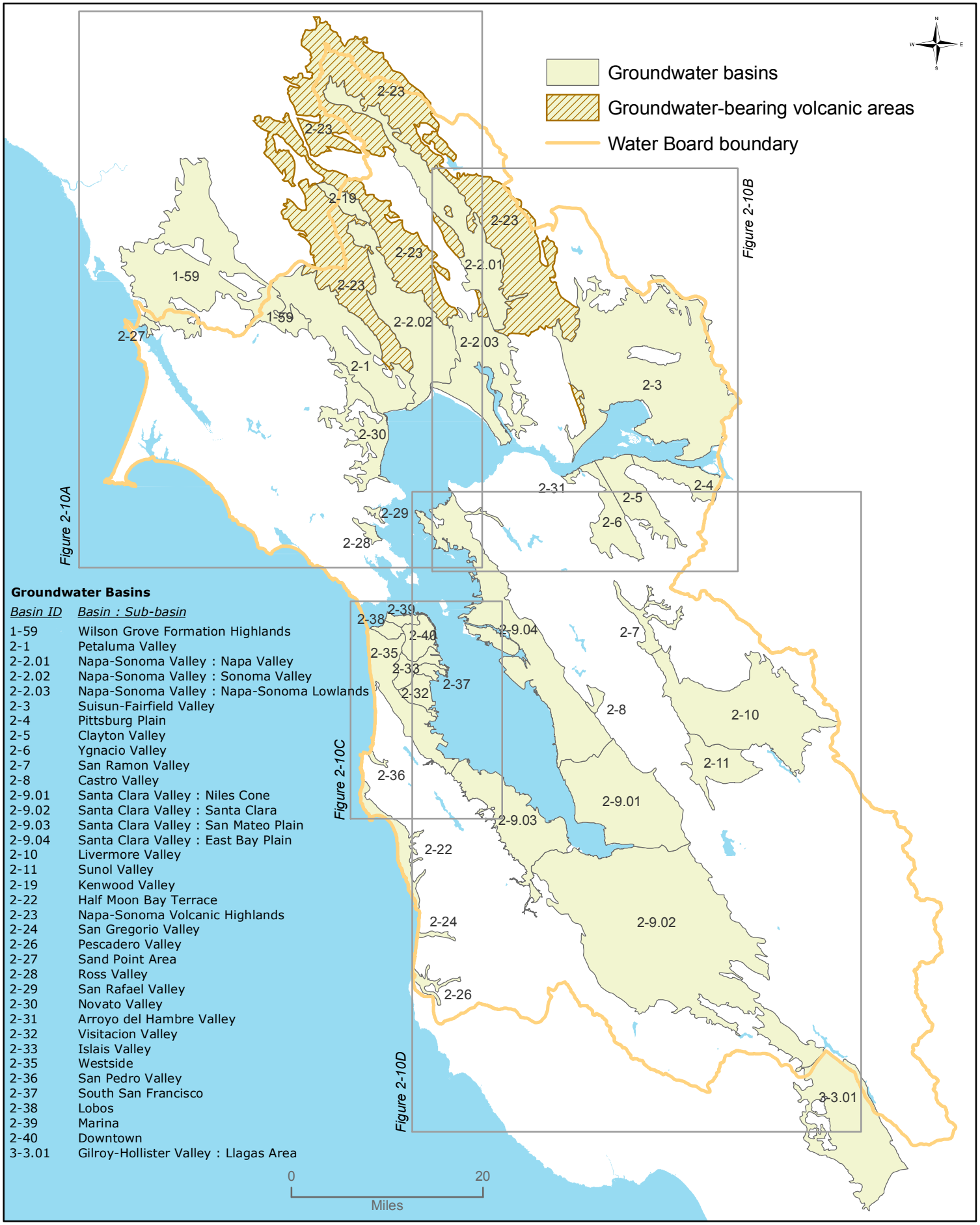


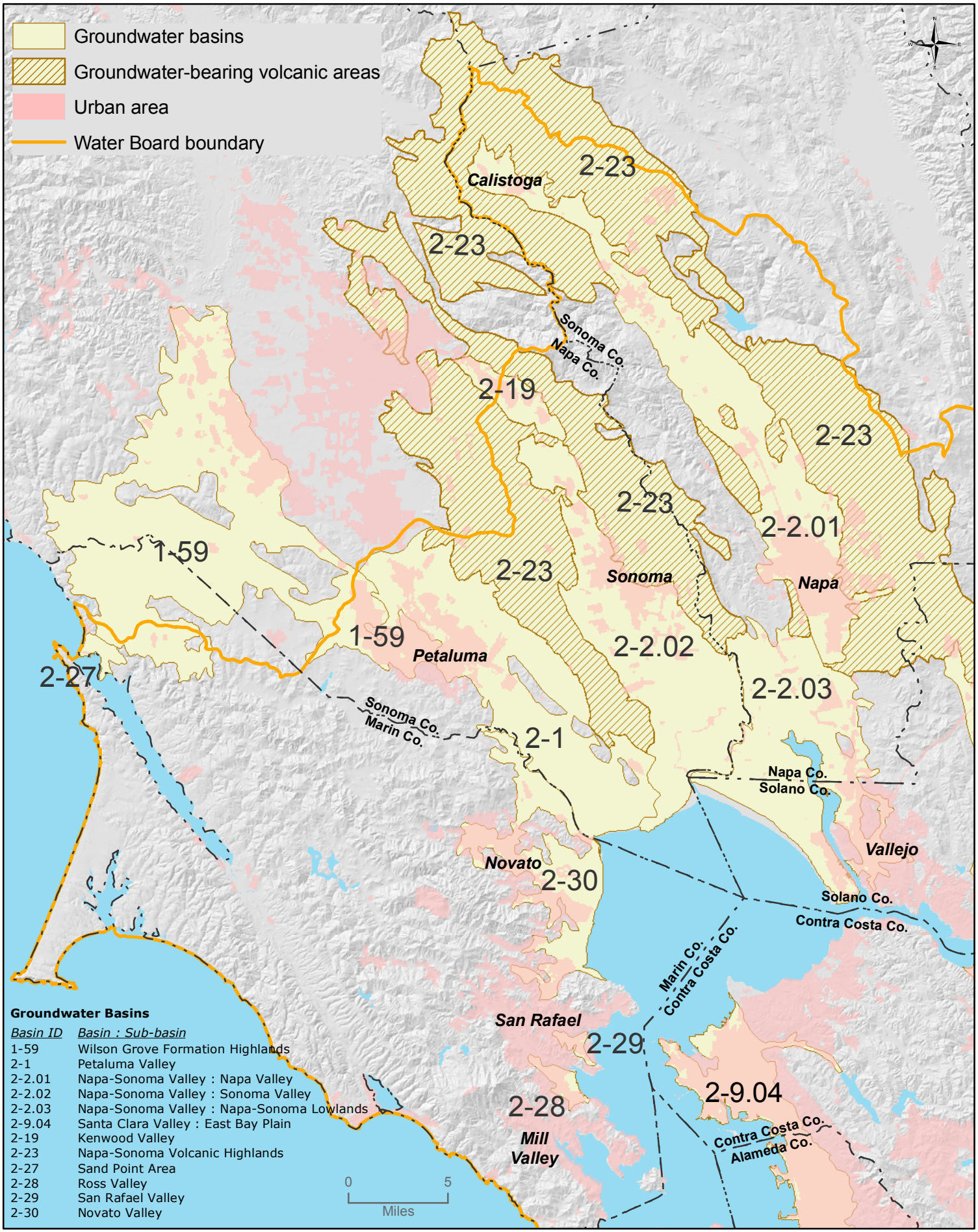
Figure 2-10 Groundwater Basins



Groundwater Basins

Basin ID	*Basin : Sub-basin*
1-59	Wilson Grove Formation Highlands
2-1	Petaluma Valley
2-2.01	Napa-Sonoma Valley : Napa Valley
2-2.02	Napa-Sonoma Valley : Sonoma Valley
2-2.03	Napa-Sonoma Valley : Napa-Sonoma Lowlands
2-3	Suisun-Fairfield Valley
2-4	Pittsburg Plain
2-5	Clayton Valley
2-6	Ygnacio Valley
2-7	San Ramon Valley
2-8	Castro Valley
2-9.01	Santa Clara Valley : Niles Cone
2-9.02	Santa Clara Valley : Santa Clara
2-9.03	Santa Clara Valley : San Mateo Plain
2-9.04	Santa Clara Valley : East Bay Plain
2-10	Livermore Valley
2-11	Sunol Valley
2-19	Kenwood Valley
2-22	Half Moon Bay Terrace
2-23	Napa-Sonoma Volcanic Highlands
2-24	San Gregorio Valley
2-26	Pescadero Valley
2-27	Sand Point Area
2-28	Ross Valley
2-29	San Rafael Valley
2-30	Novato Valley
2-31	Arroyo del Hambre Valley
2-32	Visitacion Valley
2-33	Islais Valley
2-35	Westside
2-36	San Pedro Valley
2-37	South San Francisco
2-38	Lobos
2-39	Marina
2-40	Downtown
3-3.01	Gilroy-Hollister Valley : Llagas Area

Figure 2-10A Groundwater Basins: Marin/Sonoma/Napa



Groundwater Basins

Basin ID	Basin : Sub-basin
1-59	Wilson Grove Formation Highlands
2-1	Petaluma Valley
2-2.01	Napa-Sonoma Valley : Napa Valley
2-2.02	Napa-Sonoma Valley : Sonoma Valley
2-2.03	Napa-Sonoma Valley : Napa-Sonoma Lowlands
2-9.04	Santa Clara Valley : East Bay Plain
2-19	Kenwood Valley
2-23	Napa-Sonoma Volcanic Highlands
2-27	Sand Point Area
2-28	Ross Valley
2-29	San Rafael Valley
2-30	Novato Valley

Figure 2-10B Groundwater Basins: Napa/Solano

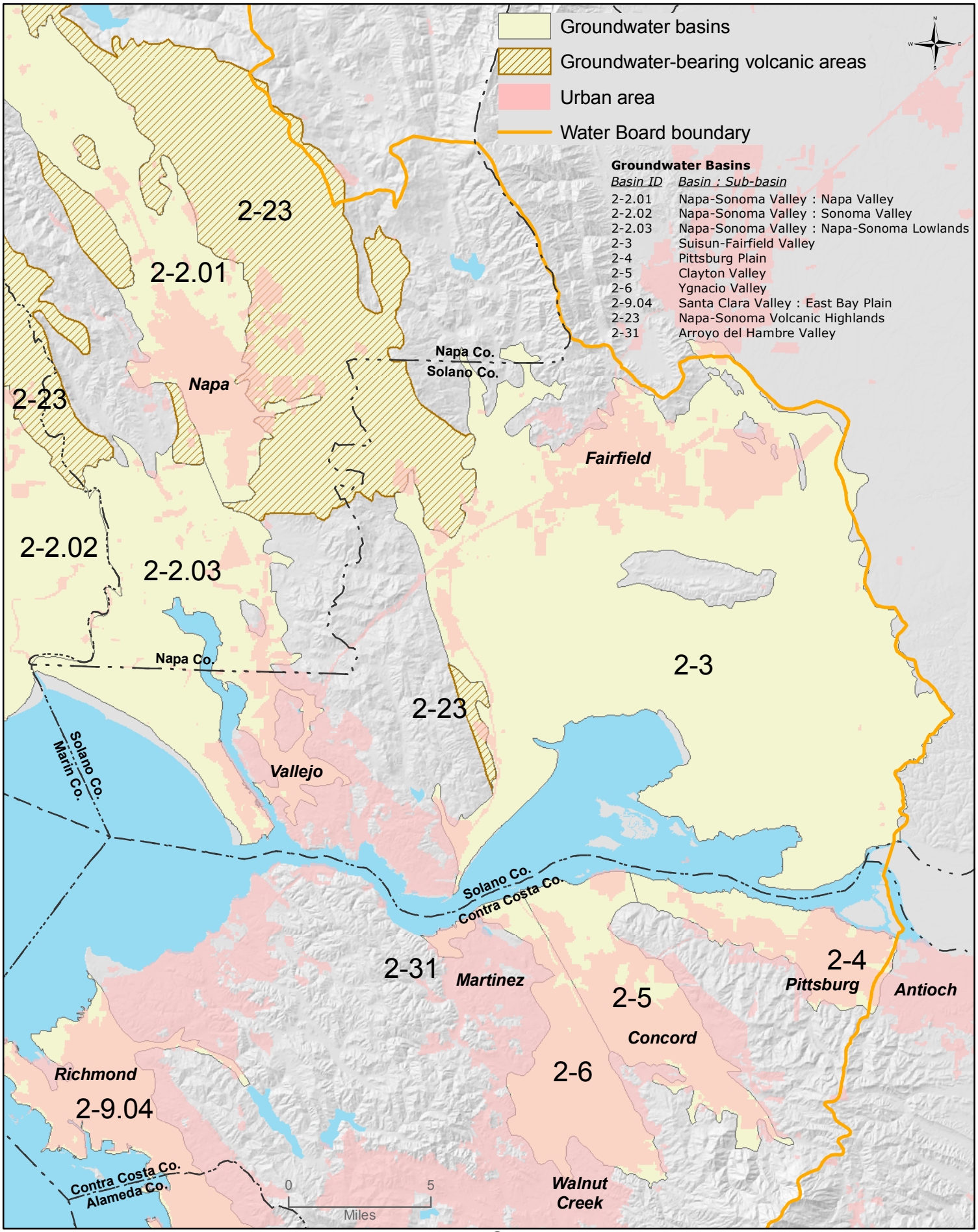


Figure 2-10C Groundwater Basins: San Francisco

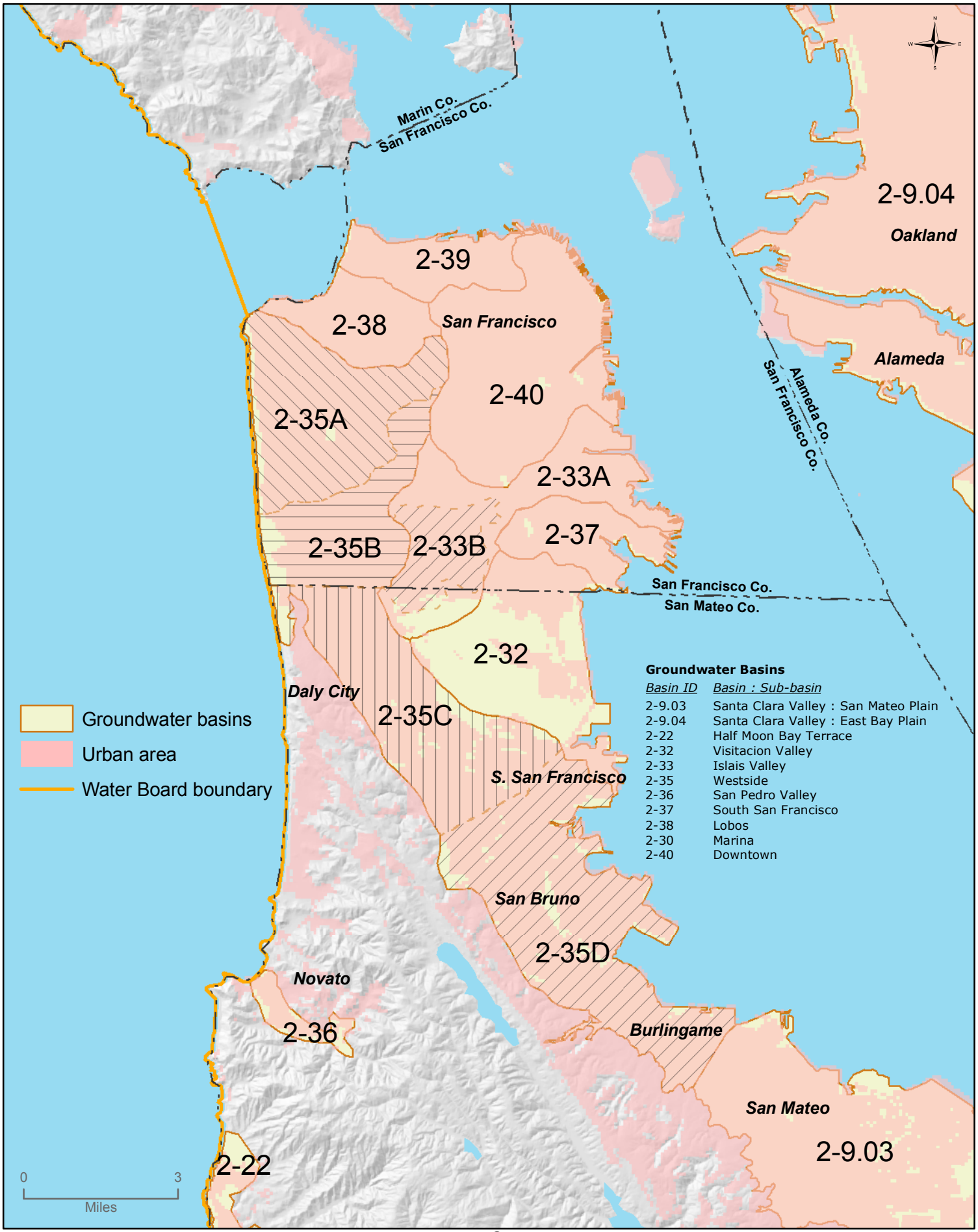


Figure 2-10D Groundwater Basins: East and South Bay

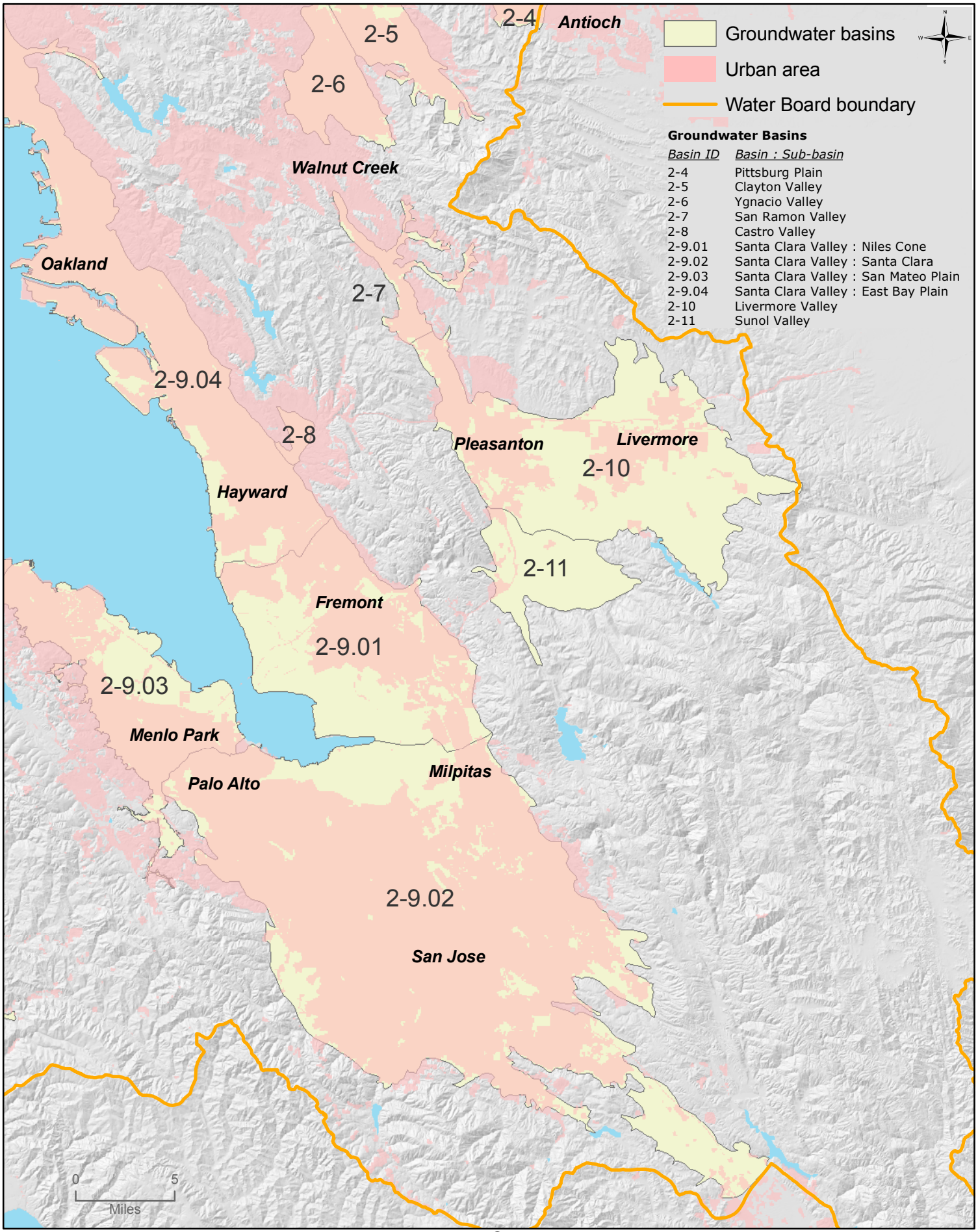


Figure 2-11 General Locations of Wetland Areas

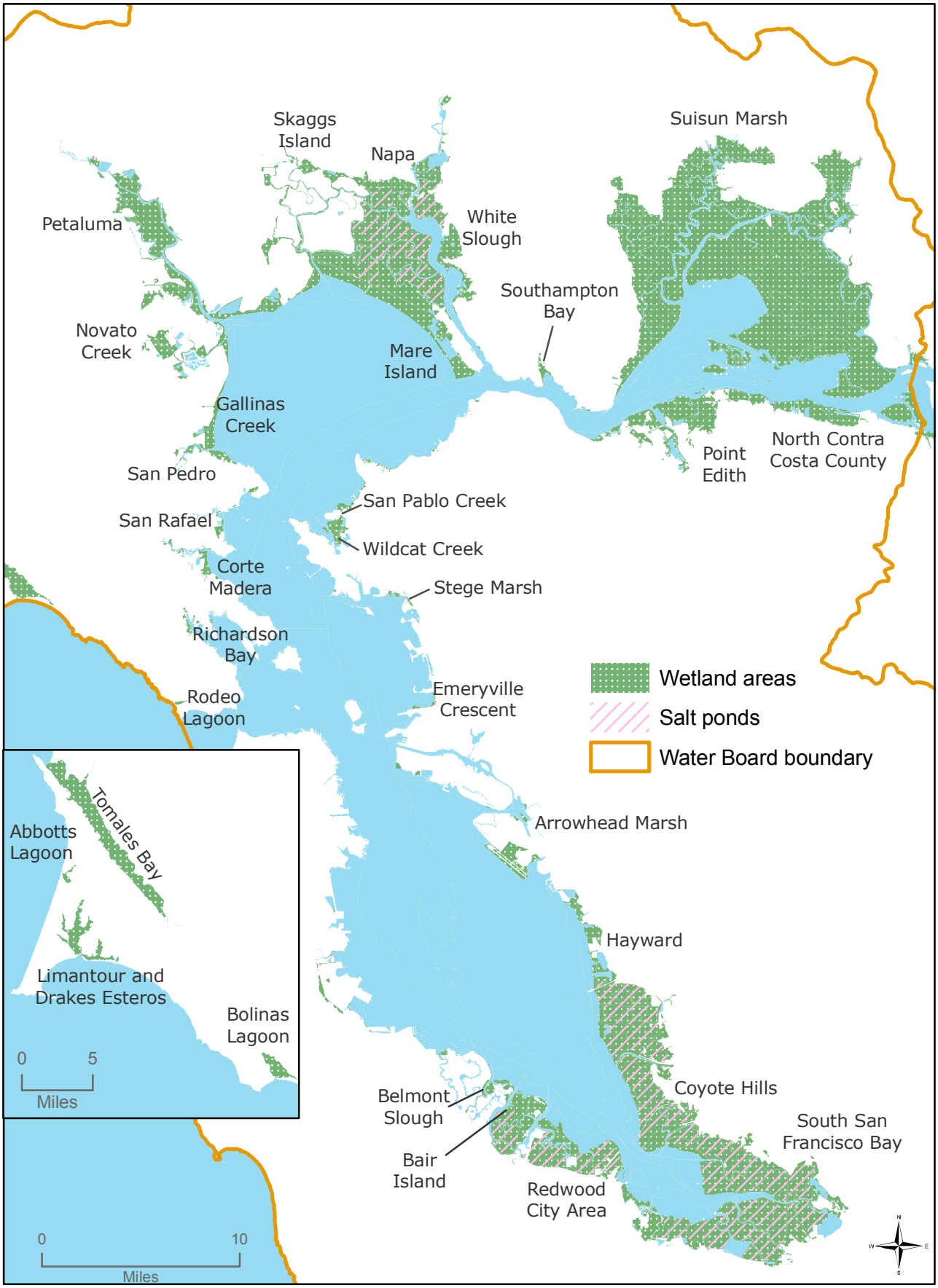


Table 2-1: Existing and Potential Beneficial Uses of Water Bodies in the San Francisco Bay Region

MARIN COASTAL BASIN

	Human Consumptive Uses						Aquatic Life Uses									Wildlife Use	Recreational Uses		
COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHEL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
MARIN COUNTY																			
Pacific Ocean (Marin)					E		E	E			E	E	E	E		E	E	E	E
Abbotts Lagoon											E					E	E	E	
Drakes Estero							E	E			E		E	E		E	E	E	
East Schooner Creek								E	E					E		E	P	E	
Limantour Estero							E	E			E		E	E		E	E	E	
Coast Creek								E	E					E		E	E	E	
Alamere Creek									E							E	P	E	
Crystal Lake									E					E	E	E	P	P	
Bolinas Lagoon							E	E			E	E	E	E		E	E	E	
Pine Gulch Creek		E							E			E		E	E	E		E	
Easkoot Creek																			
McKennan Gulch Creek																			
Morses Gulch Creek																			
Pike County Gulch Creek																			
Redwood Creek (Marin)	E	E	E					E	E					E	E	E	E	E	
Rodeo Lagoon									E							E	E	E	
Rodeo Creek									E		E		E	E		E	E	E	
Tomales Bay							E	E			E	E	E	E		E	E	E	
Millerton Gulch																			

MARIN COASTAL BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHEL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
Walker Creek									E			E	E	E	E	E	P	P	
Laguna Lake																			
Frink Canyon Creek																			
Verde Canyon Creek																			
Salmon Creek																			
Soulajule Reservoir		E	E												E	E	E	E	
Lagunitas Creek	E	E							E			E	E	E	E	E	E	E	
Haggerty Gulch Creek																			
Bear Valley Creek																			
Olema Creek									E			E		E	E	E	E	E	
Nicasio Reservoir		E	E						P					E	E	E	E	E	
Nicasio Creek		E	E						E			E		E		E	E	E	
Halleck Creek																			
Devils Gulch Creek																			
Kent Lake		E							E					E	E	E	E	E	
Big Carson Creek																			
Alpine Lake		E							E					E	E	E	E	E	
Bon Tempe Lake		E							E					E	E	E	E	E	
Lake Lagunitas		E							E					E	E	E	E	E	

E: Existing beneficial use L: Limited beneficial use P: Potential beneficial use

SAN MATEO COASTAL BASIN

	Human Consumptive Uses						Aquatic Life Uses									Wildlife Use	Recreational Uses		
COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHEL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
SAN MATEO COUNTY																			
Pacific Ocean (San Mateo, San Francisco)					E		E	E			E	E	E	E		E	E	E	E
Lake Merced		P							E					E	E	E	E	E	
San Pedro Creek		E							E			E		E	E	E		E	
San Vincente Creek	E	E							E			E	E	E		E	P	P	
Denniston Creek	E	E							E			E	E	E	E	E	E	E	
Frenchmans Creek	E								E			E	E	E	E	E	E	E	
Pilarcitos Creek	E	E							E			E	E	E	E	E	P	P	
Apanolio Creek																			
Arroyo Leon Creek																			
Mills Creek																			
Pilarcitos Lake		E							E				E	E	E	E	L	E	
Purisima Creek	E								E			E	E	E		E	E	E	
Lobitas Creek	E								E			E	E	E		E	E	E	
Tunitas Creek	E								E			E	E	E	E	E	P	P	
San Gregorio Creek	E								E			E	E	E	E	E	E	E	
Alpine Creek																			
El Corte de Madera Creek									E			P	E	P	E	E	P	E	
La Honda Creek																			
Woodruff Creek																			
Clear Creek																			
Harrington Creek																			
Bogess Creek																			
Mindego Creek																			
Pomponio Creek	E								E			E		E	E	E	P	E	
Pomponio Reservoir																			
Pescadero Creek	E	E							E			E	E	E	E	E	E	E	
Butano Creek																			
Fall Creek																			
Hoffman Creek																			

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHEL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
Honsinger Creek																			
Jones Gulch Creek																			
McCormick Creek																			
Oil Creek																			
Lambert Creek																			
Peters Creek																			
Slate Creek																			
Tarwater Creek																			
Little Boulder Creek																			
Waterman Creek																			

E: Existing beneficial use L: Limited beneficial use P: Potential beneficial use

CENTRAL BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHEL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
	← Human Consumptive Uses →						← Aquatic Life Uses →									Wildlife Use	Recreational Uses		
SAN FRANCISCO COUNTY																			
Golden Gate Channel																			
San Francisco Bay Central					E	E	E	E		E		E	E	E		E	E	E	E
Golden Gate Park Lakes															E	E		E	
MARIN COUNTY																			
San Rafael Creek									E						E	E		E	E
Corte Madera Creek									E			P	E	P	E	E	P	E	
Ross Creek																			
Cascade Creek																			
San Anselmo Creek																			
Sleepy Hollow Creek																			
Phoenix Lake		E							E					E	E	E	E	E	
Phoenix Creek																			
Bill Williams Creek																			
Richardson Bay					E		E	E		E		E	E	E		E	E	E	E
Arroyo Corte Madera del Presidio								E	E					E		E	P	E	
Old Mill Creek									E							E		E	
Coyote Creek (Marin)									E						E	E		E	
ALAMEDA COUNTY																			
Berkeley Aquatic Park Lagoon										E		E		P		E	E	E	
Lake Temescal									E					E	E	E	E	E	

E: Existing beneficial use L: Limited beneficial use P: Potential beneficial use

SOUTH BAY BASIN

	← Human Consumptive Uses →						← Aquatic Life Uses →									Wildlife Use	Recreational Uses		
COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHEL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
SAN FRANCISCO COUNTY																			
San Francisco Bay Lower					E		E	E		E		E	E	P		E	E	E	E
SAN MATEO COUNTY																			
San Mateo Creek			E						P				E	E		E	P	P	
Lower Crystal Springs Reservoir		E							E				E	E	E	E		E	
Upper Crystal Springs Reservoir		E							E				E	E	E	E		E	
San Andreas Lake		E							E				E	E	E	E	L	E	
Foster City Lagoon																			
Bair Island Wetlands																			
ALAMEDA COUNTY																			
Lake Merritt										E				E		E	E	E	
Lower San Leandro Creek			E									P		P	P	E	P	P	
Lake Chabot (Alameda)		E							E					E	E	E	E	E	
Upper San Leandro Reservoir		E							E					E	E	E	L	P	
San Leandro Creek			E						E			P		P	P	E	P	P	
Kaiser Creek																			
Moraga Creek																			
San Lorenzo Creek		E	E	E					E			E		E	E	E	E	E	
Don Castro Reservoir									E					E	E	E	E	E	
Cull Canyon Reservoir									E					E	E	E	E	E	
Palomares Creek									E			E		E	E	E	E	E	
Crow Creek									E			E		E	E	E	E	E	
Alameda Creek Quarry Ponds				E					E						E		E	E	
Alameda Creek	E			E					E			E		E	E	E	E	E	
San Antonio Reservoir		E							E					E	E	E	L	E	

SOUTH BAY BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHEL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
Lacosta Creek																			
Arroyo de la Laguna				E					P			E		E	P	E	E	E	
Arroyo Valle		E		E					E			P		E		E	P	P	
Shadow Cliffs Reservoir									E					E	E	E	E	E	
Del Valle Reservoir		E							E					E	E	E	E	E	
Arroyo Mocho				E					P			E		E	P	E	E	E	
Tassajara Creek				E					P			E		E	P	E	E	E	
Arroyo las Positas				E					P			E		E	P	E	E	E	
Arroyo Seco (Alameda)				E					P			E		E	P	E	E	E	
Alamo Canal				E					P			E		E	P	E	E	E	
Alamo Creek				E					P			E		E	P	E	E	E	
SANTA CLARA COUNTY																			
Calaveras Reservoir		E							E					E	E	E	L	E	
Arroyo Hondo		E	E						E					E	E	E	E	E	
Isabel Creek		E	E						E					E	E	E	E	E	
Smith Creek		E	E						E					E	E	E	E	E	
Sulphur Creek (Santa Clara)		E	E						E					E	E	E	E	E	

E: Existing beneficial use L: Limited beneficial use P: Potential beneficial use

SANTA CLARA BASIN

	Human Consumptive Uses						Aquatic Life Uses									Wildlife Use	Recreational Uses		
COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHEL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
San Francisco Bay South					E		E	E		E		E	E	P		E	E	E	E
ALAMEDA COUNTY																			
Lake Elizabeth									E					E	E	E		E	
SAN MATEO AND SANTA CLARA COUNTIES																			
San Francisquito Creek									E			E		E	E	E	P	P	
Felt Lake	E													E	E	E	E	E	
Los Trancos Creek																			
West Union Creek																			
Searsville Lake	E								E					E	E	E	E	E	
SANTA CLARA COUNTY																			
Matedero Creek									E			E		E	E	E	E	E	
Permanente Creek									E					E		E	E	E	
Stevens Creek			E						E			E		P	E	E	E	E	
Stevens Creek Reservoir		E		E					E			E		E	E	E		E	
Calabazas Creek	E			E					E						E	E	E	E	
Saratoga Creek	E		E	E					E						E	E	E	E	
Guadalupe Reservoir									E			P		P	E	E	P	E	
Los Gatos Creek		E	E	E					E			P		P	E	E		P	
Vasona Lake				E					E					E	E	E	E	E	
Lexington Reservoir		E							E					E	E	E	E	E	
Lake Elsman		E							E							E		P	
Campbell Percolation Pond				E					E					E	E	E	E	E	
Guadalupe Creek																			
Guadalupe Reservoir		E		E					E					E	E	E	E	E	
Alamitos Creek																			
Calero Reservoir		E		E										E	E	E	E	E	
Almaden Reservoir		E		E					E					E	E	E	E	E	
Herbert Creek																			

SANTA CLARA BASIN

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHEL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
Barrett Canyon Creek																			
Coyote Creek				E					E			E	E	E	E	E	P	E	
Lower Penitencia Creek																			
Berryessa Creek																			
Upper Penitencia Creek																			
Cherry Flat Reservoir	E	E												E	E	E	L	E	
Arroyo Aguague Creek																			
Halls Valley Reservoir														E	E	E	E	E	
Silver Creek																			
Fremont Lagoon																			
Sandy Wool Lake									E					E	E	E		E	
Cotton Wood Lake									E					E	E	E	E	E	
Anderson Lake		E		E					E					E	E	E	L	E	
San Felipe Creek									P					P	E	E	P	P	
Otis Canyon Creek																			
Coyote Lake	E	E							E					E	E	E	E	E	
Soda Springs Canyon Creek																			

E: Existing beneficial use L: Limited beneficial use P: Potential beneficial use

SAN PABLO BASIN

	← Human Consumptive Uses →						← Aquatic Life Uses →									Wildlife Use	Recreational Uses		
COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHEL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
San Pablo Bay					E		E	E		E		E	E	E		E	E	E	E
SOLANO COUNTY																			
White Slough Lake Chabot (Solano) Dalwick Lake	E	E							E					E	E	E	E	E	
CONTRA COSTA COUNTY																			
Rodeo Creek														E	E	E	P	E	
Refugio Creek																			
Pinole Creek									E			E		E	E	E	P	P	
San Pablo Creek												E		E	E	E		E	
San Pablo Reservoir		E							E					E	E	E	E	E	
Briones Reservoir		E							E					E	E	E	L	P	
Wildcat Creek												E		E	E	E		E	
Jewel Lake									E						E	E	E	E	
Lake Anza									E						E	E	E	E	
MARIN COUNTY																			
Novato Creek		E							P			P	E	P	P	E	P	P	
Stafford Lake		E							E					E	E	E	E	E	
Pacheco Pond							E		E			P		P	E	E	P	P	
Miller Creek									E			E	E	E	E	E	E	E	
Gallinas Creek									E				E		E	E		E	
SONOMA COUNTY																			
Petaluma River									E	E		E	E	E	E	E	E	E	E
San Antonio Creek									E			P		P	E	E	P	P	
Willow Creek																			
Adobe Creek (Sonoma) Sonoma Creek Fowler Creek									E			E	E	E	E	E	E	E	
Schnell Creek Arroyo Seco Creek (Sonoma)																			

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHEL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
Nathanson Creek																			
Agua Caliente Creek (Sonoma)																			
Stuart Creek																			
Graham Creek																			
Yulupa Creek																			
NAPA COUNTY																			
Napa River	E	E							E			E	E	E	E	E	E	E	E
Huichica Creek																			
Carneros Creek																			
Suscol Creek																			
Tulucay Creek																			
Lake Marie	E	E							P					E	P	E	E	E	
Napa Creek																			
Browns Valley Creek																			
Redwood Creek (Napa)																			
Pickle Creek																			
Milliken Creek																			
Sarco Creek																			
Milliken Reservoir		E							E					E	E	E	L	P	
Soda Creek																			
Dry Creek (Napa)	E	E							E			E		E	E	E	E	E	
Conn Creek		E	E						E			E		E		E	E	E	
Rector Creek																			
Rector Reservoir		E							E					E	E	E	L	E	
Lake Hennessey		E							E					E	E	E	E	E	
Sage Creek		E	E						E					E	E	E	P	P	
Chiles Creek		E	E						E					E	E	E	P	P	
Bear Canyon Creek																			
Sulphur Creek (Napa)																			
York Creek									E			E		E		E	P	P	
Mill Creek (Napa)																			
Ritchey Creek																			
Bell Canyon Reservoir																			
Cyrus Creek																			

COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHEL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
Garnett Creek																			
Hopper Creek																			
Jericho Canyon Creek																			
Kimball Reservoir		E													E	E	E	E	

E: Existing beneficial use L: Limited beneficial use P: Potential beneficial use

SUISUN BASIN

	← Human Consumptive Uses →						← Aquatic Life Uses →									Wildlife Use	Recreational Uses		
COUNTY Waterbody	AGR	MUN	FRSH	GWR	IND	PROC	COMM	SHEL	COLD	EST	MAR	MIGR	RARE	SPWN	WARM	WILD	REC-1	REC-2	NAV
Carquinez Strait					E		E			E		E	E	E		E	E	E	E
Suisun Bay					E	E	E			E		E	E	E		E	E	E	E
Sacramento-San Joaquin Delta	E	E		E	E	E	E			E		E	E	E		E	E	E	E
SOLANO COUNTY																			
Lake Herman		E			E				E					E	E	E	E	E	
Green Valley Creek			E						E					E	E	E	E	E	
Lake Frey		E							E					E	E	E		E	
Lake Madigan	E	E							E					E	E	E		E	
Suisun Slough														E	E	E	E	E	E
Suisun Creek			E						E			E		E	E	E	P	P	
Suisun Reservoir																			
Wooden Valley Creek																			
Lake Curry		E												E	E	E	E	E	
Ledgewood Creek			E						E			E		E	E	E	E	E	
Laurel Creek (Solano)			E						E			E		E	E	E	E	E	
Montezuma Slough													E	E	E	E	E	E	E
CONTRA COSTA COUNTY																			
Peyton Slough																			
Pacheco Creek																			
Walnut Creek									E			E		E	E	E	P	P	
Pine Creek									E					E	E	E	E	E	
Lafayette Creek																			
Lafayette Reservoir		E							E					E	E	E	E	E	
Mt. Diablo Creek									E			E		E	E	E	E	E	
Mallard Reservoir	E	E			E	E								E	E	E	L	P	

E: Existing beneficial use L: Limited beneficial use P: Potential beneficial use

Table 2-2: Existing and Potential Beneficial Uses in Groundwater in Identified Basins

County	Groundwater Basin Name[1]	Groundwater Sub-Basin[1]	Basin Number[1]	MUN[2]	PROC[3]	IND[4]	AGR[5]	FRESH[6]
Alameda	Castro Valley	--	2-8	P	P	P	P	--
Alameda	Santa Clara Valley	Niles Cone	2-9.01	E	E	E	E	--
Alameda and Contra Costa	Santa Clara Valley	East Bay Plain	2-9.04	E	E	E	E	--
Alameda and Contra Costa	Livermore Valley	--	2-10	E	E	E	E	--
Alameda	Sunol Valley	--	2-11	E	E	E	E	--
Contra Costa	Pittsburg Plain	--	2-4	P	P	P	P	--
Contra Costa	Clayton Valley	--	2-5	E	P	P	P	--
Contra Costa	Ygnacio Valley	--	2-6	P	P	P	P	--
Contra Costa	San Ramon Valley	--	2-7	E	P	P	E	--
Contra Costa	Arroyo del Hambre Valley	--	2-31	P	P	P	P	--
Marin	Sand Point Area	--	2-27	E	P	P	P	--
Marin	Ross Valley	--	2-28	E	P	P	E	--
Marin	San Rafael Valley	--	2-29	P	P	P	P	--
Marin	Novato Valley	--	2-30	P	P	P	P	--
Napa	Napa-Sonoma Valley	Napa Valley	2-2.01	E	E	E	E	--
Napa and Solano	Napa-Sonoma Valley	Napa-Sonoma Lowlands	2-2.03	E	E	E	E	--
San Francisco and San Mateo	Visitacion Valley	--	2-32	P	E	E	P	--
San Francisco and San Mateo	Islais Valley A[7]	--	2-33A	P	E	E	P	--
San Francisco	Islais Valley B[7]	--	2-33B	P	P	P	E	--
San Francisco	South San Francisco	--	2-37	P	E	E	P	--
San Francisco and San Mateo	Westside A[7]	--	2-35A	E	P	P	E	--
San Francisco	Lobos	--	2-38	E	P	P	E	--
San Francisco	Marina	--	2-39	E	P	P	E	--
San Francisco	Downtown	--	2-40	E	P	P	E	--
San Francisco	Westside B[7]	--	2-35B	P	P	P	E	--
San Mateo	Westside C[7]	--	2-35C	E	P	P	E	--

County	Groundwater Basin Name[1]	Groundwater Sub-Basin[1]	Basin Number[1]	MUN[2]	PROC[3]	IND[4]	AGR[5]	FRESH[6]
San Mateo	Westside D[7]	--	2-35D	E	E	E	P	--
San Mateo	Santa Clara Valley	San Mateo Plain	2-9.03	E	E	E	P	--
San Mateo and Santa Clara	Santa Clara Valley[8]	Santa Clara	2-9.02	E	E	E	E	--
San Mateo	Half Moon Bay Terrace	--	2-22	E	P	P	E	--
San Mateo	San Gregorio Valley	--	2-24	E	P	P	E	--
San Mateo	Pescadero Valley	--	2-26	E	P	P	E	--
San Mateo	San Pedro Valley	--	2-36	P	P	P	P	--
Solano	Suisun-Fairfield Valley	--	2-3	E	E	E	E	--
Sonoma and Marin	Petaluma Valley	--	2-1	E	P	P	E	--
Sonoma	Napa-Sonoma Valley	Sonoma Valley	2-2.02	E	P	P	E	--
Sonoma and Marin	Wilson Grove Formation Highlands	--	1.59	E	P	P	E	--
Sonoma and Marin	Wilson Grove Formation Highlands	--	1.59	See RB1 Basin Plan[9]				
Sonoma	Kenwood Valley	--	2-19	E	P	P	E	--
Sonoma	Napa – Sonoma Volcanic Highlands	--	2-23	X	X	X	X	X
Santa Clara	Gilroy – Hollister Valley	Llagas Area	3-3.01	See RB3 Basin Plan[10]				

Notes:

1. Department of Water Resources (DWR) Bulletin 118 “California Groundwater”, 2003.
2. MUN = Municipal and domestic water supply.
3. PROC = Industrial process water supply.
4. IND = Industrial service water supply.
5. AGR = Agricultural water supply.
6. FRESH = Freshwater replenishment to surface water; designation will be determined at a later date; for the interim, a site-by-site determination will be made.
7. The existing and potential beneficial uses for groundwater basins listed in the 1995 Basin Plan (Table 2-3) were assigned to the new groundwater basins based on the geographic location of the old basins compared to the new basins. The basin names, such as Westside A,

Westside B, etc., are informal names assigned by the Water Board to preserve the beneficial use designations in the 1995 Basin Plan and do not represent sub-basins identified by the Department of Water Resources.

8. The Santa Clara Valley groundwater basin/Santa Clara groundwater sub-basin is also known as Coyote Valley.
9. This groundwater basin is also located in the North Coast Region (RB1); beneficial uses of groundwater are specified in the Basin Plan for RB1.
10. This groundwater basin is also located in the Central Coast Region (RB3); beneficial uses of groundwater are specified in the Basin Plan for RB3.

E = Existing beneficial uses; based on best available information.
P = Potential beneficial uses; based on best available information.
X = This groundwater basin was not listed in the 1995 Basin Plan; designation will be determined at a later date; for the interim, a site-by-site determination will be made.
See DWR Bulletin 118 (2003) for groundwater basin characteristics.

Table 2-3: Examples of Existing and Potential Beneficial Uses of Selected Wetlands

	TYPE OF WETLAND				
BENEFICIAL USE	**MARINE**	**ESTUARINE**	**RIVERINE**	**LACUSTRINE**	**PALUSTRINE**
AGR		○	○	○	○
COLD			○	○	○
COMM	○	○			
EST		○			
FRESH			○	○	○
GWR	○	○	○	○	○
IND		○	●	●	
MAR	○				
MIGR	○	○	○	○	
NAV	○	○	○	○	○
PROC					
REC-1	○	○	○	○	○
REC-2	○	○	○	○	○
SHELL	○	○	○		
SPWN	○	○	○	○	○
WARM			○	○	○
WILD	○	○	○	○	○
RARE	○	○	○	○	○

NOTE:
○ Existing beneficial use
● Potential beneficial use

Table 2-4 Examples of Beneficial Uses of Wetland Areas[a]

Basin/Marsh Area	*Wetland Types*		*Beneficial Uses*									
	Fresh	Brackish	EST	MAR	MIGR	COMM	RARE	REC1	REC2	SALT	SPWN	WILD
ALAMEDA COUNTY												
Arrowhead			●				●	●	●	●	●	●
Coyote Hills			●				●	●	●	●	●	●
Emeryville Crescent			●				●	●	●	●	●	●
Hayward			●					●	●	●	●	●
CONTRA COSTA COUNTY												
North Contra Costa		●	●				●	●	●	●	●	●
Point Edith		●	●				●		●		●	●
San Pablo Creek			●				●	●	●	●	●	●
Wildcat Creek			●				●	●	●		●	●
MARIN COUNTY												
Abbotts Lagoon				●				●	●	●		●
Bolinas Lagoon				●				●	●	●		●
Corte Madera			●				●	●	●	●	●	●
Drakes Estero								●	●	●	●	●
Gallinas Creek		●	●				●	●	●	●	●	●
Limantour Estero				●				●	●	●		●
Corte Madera Ecological Reserve			●					●	●	●		●
Novato Creek		●	●		●		●	●	●	●	●	
Richardson Bay			●				●	●	●	●	●	●
Rodeo Lagoon				●				●	●	●		●
San Pedro		●	●			●	●		●	●	●	●
San Rafael Creek		●	●				●	●	●	●		●
Tomales Bay				●	●			●	●	●	●	●
NAPA COUNTY												
Mare Island			●						●	●		●
Napa		●	●		●	●	●	●	●		●	
San Pablo Bay			●		●	●	●	●	●	●	●	●
SAN MATEO COUNTY												
Bair Island			●				●	●	●	●		●
Belmont Slough			●				●	●	●	●	●	●
Pescadero	●			●	●		●	●	●	●	●	●
Princeton		●						●	●	●		●
Redwood City Area			●				●	●	●			●
SANTA CLARA COUNTY												
South San Francisco Bay			●		●	●	●	●	●	●	●	●
SOLANO COUNTY												
Southhampton Bay			●				●	●	●	●	●	●
Suisun	●	●	●		●		●	●	●		●	●
White Slough			●		●		●	●	●	●	●	●
SONOMA COUNTY												
Petaluma		●	●		●	●	●	●	●		●	●

NOTE:
a. General locations of wetlands areas are depicted in Figure 2-11.

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CHAPTER 3: WATER QUALITY OBJECTIVES

The overall goals of water quality regulation are to protect and maintain thriving aquatic ecosystems and the resources those systems provide to society and to accomplish these in an economically and socially sound manner. California's regulatory framework uses water quality objectives both to define appropriate levels of environmental quality and to control activities that can adversely affect aquatic systems.

3.1 WATER QUALITY OBJECTIVES

There are two types of objectives: narrative and numerical. Narrative objectives present general descriptions of water quality that must be attained through pollutant control measures and watershed management. They also serve as the basis for the development of detailed numerical objectives.

Historically, numerical objectives were developed primarily to limit the adverse effect of pollutants in the water column. Two decades of regulatory experience and extensive research in environmental science have demonstrated that beneficial uses are not fully protected unless pollutant levels in all parts of the aquatic system are also monitored and controlled. The Regional Board is actively working towards an integrated set of objectives, including numerical sediment objectives, that will ensure the protection of all current and potential beneficial uses.

Numerical objectives typically describe pollutant concentrations, physical/chemical conditions of the water itself, and the toxicity of the water to aquatic organisms. These objectives are designed to represent the maximum amount of pollutants that can remain in the water column without causing any adverse effect on organisms using the aquatic system as habitat, on people consuming those organisms or water, and on other current or potential beneficial uses (as described in Chapter 2).

The technical bases of the region's water quality objectives include extensive biological, chemical, and physical partitioning information reported in the scientific literature, national water quality criteria, studies conducted by other agencies, and information gained from local environmental and discharge monitoring (as described in Chapter 6). The Regional Board recognizes that limited information exists in some cases, making it difficult to establish definitive numerical objectives, but the Regional Board believes its conservative approach to setting objectives has been proper. In addition to the technical review, the overall feasibility of reaching objectives in terms of technological, institutional, economic, and administrative factors is considered at many different stages of objective derivation and implementation of the water quality control plan.

Together, the narrative and numerical objectives define the level of water quality that shall be maintained within the region. In instances where water quality is better than that prescribed by the objectives, the state Antidegradation Policy applies (State Board Resolution 68-16: Statement of Policy With Respect to Maintaining High Quality of Waters in California). This policy is aimed at protecting relatively uncontaminated aquatic systems where they exist and preventing further degradation. The state’s Antidegradation Policy is consistent with the federal Antidegradation Policy, as interpreted by the State Water Resources Control Board in State Board Order No. 86-17.

When uncontrollable water quality factors result in the degradation of water quality beyond the levels or limits established herein as water quality objectives, the Regional Board will conduct a case-by-case analysis of the benefits and costs of preventing further degradation. In cases where this analysis indicates that beneficial uses will be adversely impacted by allowing further degradation, then the Regional Board will not allow controllable water quality factors to cause any further degradation of water quality. Controllable water quality factors are those actions, conditions, or circumstances resulting from human activities that may influence the quality of the waters of the state and that may be reasonably controlled.

The Regional Board establishes and enforces waste discharge requirements for point and nonpoint source of pollutants at levels necessary to meet numerical and narrative water quality objectives. In setting waste discharge requirements, the Regional Board will consider, among other things, the potential impact on beneficial uses within the area of influence of the discharge, the existing quality of receiving waters, and the appropriate water quality objectives.

In general, the objectives are intended to govern the concentration of pollutant constituents in the main water mass. The same objectives cannot be applied at or immediately adjacent to submerged effluent discharge structures. Zones of initial dilution within which higher concentrations can be tolerated will be allowed for such discharges.

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from submerged outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting wastewater ceases to rise in the water column and first begins to spread horizontally.

For shallow water submerged discharges, surface discharges, and nonbuoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum-induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Board, whichever results in the lower estimate for initial dilution.

Compliance with water quality objectives may be prohibitively expensive or technically impossible in some cases. The Regional Board will consider modification of specific water quality objectives as long as the discharger can demonstrate that the alternate objective will protect existing beneficial uses, is scientifically defensible, and is consistent with the state Antidegradation Policy. This exception clause properly indicates that the Regional Board will conservatively compare benefits and costs in these cases because of the difficulty in quantifying beneficial uses.

These water quality objectives are considered necessary to protect the present and potential beneficial uses described in Chapter 2 of this Plan and to protect existing high quality waters of the state. These objectives will be achieved primarily through establishing and enforcing waste discharge requirements and by implementing this water quality control plan.

3.2 OBJECTIVES FOR OCEAN WATERS

The provisions of the State Board's "Water Quality Control Plan for Ocean Waters of California" (Ocean Plan) and "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California" (Thermal Plan) and any revision to them will apply to ocean waters. These plans describe objectives and effluent limitations for ocean waters.

3.3 OBJECTIVES FOR SURFACE WATERS

The following objectives apply to all surface waters within the region, except the Pacific Ocean.

3.3.1 BACTERIA

Table 3-1 provides a summary of the bacterial water quality objectives and identifies the sources of those objectives. Table 3-2 summarizes U.S. EPA's water quality criteria for water contact recreation based on the frequency of use a particular area receives. These criteria will be used to differentiate between pollution sources or to supplement objectives for water contact recreation.

3.3.2 BIOACCUMULATION

Many pollutants can accumulate on particles, in sediment, or bioaccumulate in fish and other aquatic organisms. Controllable water quality factors shall not cause a detrimental increase in concentrations of toxic substances found in bottom sediments or aquatic life. Effects on aquatic organisms, wildlife, and human health will be considered.

3.3.3 BIOSTIMULATORY SUBSTANCES

Waters shall not contain biostimulatory substances in concentrations that promote aquatic growths to the extent that such growths cause nuisance or adversely affect beneficial uses. Changes in chlorophyll a and associated phytoplankton communities follow complex dynamics that are sometimes associated with a discharge of biostimulatory substances. Irregular and extreme levels of chlorophyll a or phytoplankton blooms may indicate exceedance of this objective and require investigation.

3.3.4 COLOR

Waters shall be free of coloration that causes nuisance or adversely affects beneficial uses.

3.3.5 DISSOLVED OXYGEN

For all tidal waters, the following objectives shall apply:

In the Bay:

Downstream of Carquinez Bridge	5.0 mg/l minimum
Upstream of Carquinez Bridge	7.0 mg/l minimum

For nontidal waters, the following objectives shall apply:

Waters designated as:

Cold water habitat	7.0 mg/l minimum
Warm water habitat	5.0 mg/l minimum

The median dissolved oxygen concentration for any three consecutive months shall not be less than 80 percent of the dissolved oxygen content at saturation.

Dissolved oxygen is a general index of the state of the health of receiving waters. Although minimum concentrations of 5 mg/l and 7 mg/l are frequently used as objectives to protect fish life, higher concentrations are generally desirable to protect sensitive aquatic forms. In areas unaffected by waste discharges, a level of about 85 percent of oxygen saturation exists. A three-month median objective of 80 percent of oxygen saturation allows for some degradation from this level, but still requires a consistently high oxygen content in the receiving water.

3.3.6 FLOATING MATERIAL

Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses.

3.3.7 OIL AND GREASE

Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses.

3.3.8 POPULATION AND COMMUNITY ECOLOGY

All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce significant alterations in population or community ecology or receiving water biota. In addition, the health and life history characteristics of aquatic organisms in waters affected by controllable water quality factors shall not differ significantly from those for the same waters in areas unaffected by controllable water quality factors.

3.3.9 pH

The pH shall not be depressed below 6.5 nor raised above 8.5. This encompasses the pH range usually found in waters within the basin. Controllable water quality factors shall not cause changes greater than 0.5 units in normal ambient pH levels.

3.3.10 RADIOACTIVITY

Radionuclides shall not be present in concentrations that result in the accumulation of radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life. Waters designated for use as domestic or municipal supply shall not contain concentrations of radionuclides in excess of the limits specified in Table 4 of Section 64443 (Radioactivity) of Title 22 of the California Code of Regulations (CCR), which is incorporated by reference into this Plan. This incorporation is prospective, including future changes to the incorporated provisions as the changes take effect (see Table 3-5).

3.3.11 SALINITY

Controllable water quality factors shall not increase the total dissolved solids or salinity of waters of the state so as to adversely affect beneficial uses, particularly fish migration and estuarine habitat.

3.3.12 SEDIMENT

The suspended sediment load and suspended sediment discharge rate of surface waters shall not be altered in such a manner as to cause nuisance or adversely affect beneficial uses.

Controllable water quality factors shall not cause a detrimental increase in the concentrations of toxic pollutants in sediments or aquatic life.

3.3.13 SETTLEABLE MATERIAL

Waters shall not contain substances in concentrations that result in the deposition of material that cause nuisance or adversely affect beneficial uses.

3.3.14 SUSPENDED MATERIAL

Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

3.3.15 SULFIDE

All water shall be free from dissolved sulfide concentrations above natural background levels. Sulfide occurs in Bay muds as a result of bacterial action on organic matter in an anaerobic environment.

Concentrations of only a few hundredths of a milligram per liter can cause a noticeable odor or be toxic to aquatic life. Violation of the sulfide objective will reflect violation of dissolved oxygen objectives as sulfides cannot exist to a significant degree in an oxygenated environment.

3.3.16 TASTES AND ODORS

Waters shall not contain taste- or odor-producing substances in concentrations that impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin, that cause nuisance, or that adversely affect beneficial uses.

3.3.17 TEMPERATURE

Temperature objectives for enclosed bays and estuaries are as specified in the "Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays of California," including any revisions to the plan.

In addition, the following temperature objectives apply to surface waters:

- The natural receiving water temperature of inland surface waters shall not be altered unless it can be demonstrated to the satisfaction of the Regional Board that such alteration in temperature does not adversely affect beneficial uses.
- The temperature of any cold or warm freshwater habitat shall not be increased by more than 5°F (2.8°C) above natural receiving water temperature

3.3.18 TOXICITY

All waters shall be maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms. Detrimental responses include, but are not limited to, decreased growth rate and decreased reproductive success of resident or indicator species. There shall be no acute toxicity in ambient waters. Acute toxicity is defined as a median of less than 90 percent survival, or less than 70 percent survival, 10 percent of the time, of test organisms in a 96-hour static or continuous flow test.

There shall be no chronic toxicity in ambient waters. Chronic toxicity is a detrimental biological effect on growth rate, reproduction, fertilization success, larval development, population abundance, community composition, or any other relevant measure of the health of an organism, population, or community.

Attainment of this objective will be determined by analyses of indicator organisms, species diversity, population density, growth anomalies, or toxicity tests (including those described in Chapter 4), or other methods selected by the Water Board. The Water Board will also consider other relevant information and numeric criteria and guidelines for toxic substances developed by other agencies as appropriate.

The health and life history characteristics of aquatic organisms in waters affected by controllable water quality factors shall not differ significantly from those for the same waters in areas unaffected by controllable water quality factors.

3.3.19 TURBIDITY

Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses. Increases from normal background light penetration or turbidity relatable to waste discharge shall not be greater than 10 percent in areas where natural turbidity is greater than 50 NTU.

3.3.20 UN-IONIZED AMMONIA

The discharge of wastes shall not cause receiving waters to contain concentrations of un-ionized ammonia in excess of the following limits (in mg/l as N):

Annual Median	0.025
Maximum, Central Bay (as depicted in Figure 2-5) and upstream	0.16
Maximum, Lower Bay (as depicted in Figures 2-6 and 2-7):	0.4

The intent of this objective is to protect against the chronic toxic effects of ammonia in the receiving waters. An ammonia objective is needed for the following reasons:

- Ammonia (specifically un-ionized ammonia) is a demonstrated toxicant. Ammonia is generally accepted as one of the principle toxicants in municipal waste discharges. Some industries also discharge significant quantities of ammonia.
- Exceptions to the effluent toxicity limitations in Chapter 4 of the Plan allow for the discharge of ammonia in toxic amounts. In most instances, ammonia will be diluted or degraded to a nontoxic state fairly rapidly. However, this does not occur in all cases, the South Bay being a notable example. The ammonia limit is recommended in order to preclude any build up of ammonia in the receiving water.
- A more stringent maximum objective is desirable for the northern reach of the Bay for the protection of the migratory corridor running through Central Bay, San Pablo Bay, and upstream reaches.

3.3.21 OBJECTIVES FOR SPECIFIC CHEMICAL CONSTITUENTS

Surface waters shall not contain concentrations of chemical constituents in amounts that adversely affect any designated beneficial use. Water quality objectives for selected toxic pollutants for surface waters are given in Tables 3-3 and 3-4.

The Regional Board intends to work towards the derivation of site-specific objectives for the Bay-Delta estuarine system. Site-specific objectives to be considered by the Regional Board shall be developed in accordance with the provisions of the federal Clean Water Act, the State Water Code, State Board water quality control plans, and this Plan. These site-specific objectives will take into consideration factors such as all available scientific information and monitoring data and the latest U.S. EPA guidance, and local environmental conditions and impacts caused by bioaccumulation. Pending the adoption of site-specific objectives, the objectives in Tables 3-3 and 3-4 apply throughout the region. Site-specific objectives for copper and nickel, adopted for South San Francisco Bay south of the Dumbarton Bridge, are listed in Table 3-3A.

South San Francisco Bay south of the Dumbarton Bridge is a unique, water-quality-limited, hydrodynamic and biological environment that merits continued special attention by the Regional Board. Controlling urban and upland runoff sources is critical to the success of maintaining water quality in this portion of the Bay. Site-specific water quality objectives have been adopted for dissolved copper and nickel in this Bay segment. Site-specific objectives may be appropriate for other pollutants of concern, but this determination will be made on a case-by-case basis, and after it has been demonstrated that all other reasonable treatment, source control and pollution prevention measures have been exhausted. The Regional Board will determine whether revised water quality objectives and/or effluent limitations are appropriate based on sound technical information and scientific studies, stakeholder input, and the need for flexibility to address priority problems in the watershed.

3.3.22 CONSTITUENTS OF CONCERN FOR MUNICIPAL AND AGRICULTURAL WATER SUPPLIES

At a minimum, surface waters designated for use as domestic or municipal supply (MUN) shall not contain concentrations of constituents in excess of the maximum (MCLs) or secondary maximum contaminant levels (SMCLs) specified in the following provisions of Title 22, which are incorporated by reference into this plan: Table 64431-A (Inorganic Chemicals) of Section 64431, and Table 64433.2-A (Fluoride) of Section 64433.2, Table 64444-A (Organic Chemicals) of Section 64444, and Table 64449-A (SMCLs-Consumer Acceptance Limits) and 64449-B (SMCLs-Ranges) of Section 64449. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect. Table 3-5 contains water quality objectives for municipal supply, including the MCLs contained in various sections of Title 22 as of the adoption of this plan.

At a minimum, surface waters designated for use as agricultural supply (AGR) shall not contain concentrations of constituents in excess of the levels specified in Table 3-6.

3.4 OBJECTIVES FOR GROUNDWATER

Groundwater objectives consist primarily of narrative objectives combined with a limited number of numerical objectives. Additionally, the Water Board will establish basin- and/or site-specific numerical groundwater objectives as necessary. For example, the Water Board has groundwater basin-specific objectives for the Alameda Creek watershed above Niles to include the Livermore-Amador Valley as shown in Table 3-7.

The maintenance of existing high quality of groundwater (i.e., "background") is the primary groundwater objective.

In addition, at a minimum, groundwater shall not contain concentrations of bacteria, chemical constituents, radioactivity, or substances producing taste and odor in excess of the objectives described below unless naturally occurring background concentrations are greater. Under existing law, the Water Board regulates waste discharges to land that could affect water quality, including both groundwater and surface water quality. Waste discharges that reach groundwater are regulated to protect both groundwater and any surface water in continuity with groundwater. Waste discharges that affect groundwater that is in continuity with surface water cannot cause violations of any applicable surface water standards.

3.4.1 BACTERIA

In groundwater with a beneficial use of municipal and domestic supply, the median of the most probable number of coliform organisms over any seven-day period shall be less than 1.1 most probable number per 100 milliliters (MPN/100 mL) (based on multiple tube fermentation technique; equivalent test results based on other analytical techniques as specified in the National Primary Drinking Water Regulation, 40 CFR, Part 141.21 (f), revised June 10, 1992, are acceptable).

3.4.2 ORGANIC AND INORGANIC CHEMICAL CONSTITUENTS

All groundwater shall be maintained free of organic and inorganic chemical constituents in concentrations that adversely affect beneficial uses. To evaluate compliance with water quality objectives, the Water Board will consider all relevant and scientifically valid evidence, including relevant and scientifically valid numerical criteria and guidelines developed and/or published by other agencies and organizations (e.g., U.S. Environmental Protection Agency (U.S. EPA), the State Water Board, California Department of Health Services (DHS), U.S. Food and Drug Administration, National Academy of Sciences, California Environmental Protection Agency's (Cal/EPA) Office of Environmental Health Hazard Assessment (OEHHA), U.S. Agency for Toxic Substances and Disease Registry, Cal/EPA Department of Toxic Substances Control (DTSC), and other appropriate organizations.)

At a minimum, groundwater designated for use as domestic or municipal supply (MUN) shall not contain concentrations of constituents in excess of the maximum (MCLs) or secondary maximum contaminant levels (SMCLs) specified in the following provisions of Title 22, which are incorporated by reference into this plan: Tables 64431-A (Inorganic Chemicals) of Section 64431, Table 64433.2-A (Fluoride) of Section 64433.2, and Table 64444-A (Organic Chemicals) of Section 64444. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect. (See Table 3-5.)

Groundwater with a beneficial use of agricultural supply shall not contain concentrations of chemical constituents in amounts that adversely affect such beneficial use. In determining compliance with this objective, the Water Board will consider as evidence relevant and scientifically valid water quality goals from sources such as the Food and Agricultural Organizations of the United Nations; University of California Cooperative Extension, Committee of Experts; and McKee and Wolf's "Water Quality Criteria," as well as other relevant and scientifically valid evidence. At a minimum, groundwater designated for use as agricultural supply (AGR) shall not contain concentrations of constituents in excess of the levels specified in Table 3-6.

Groundwater with a beneficial use of freshwater replenishment shall not contain concentrations of chemicals in amounts that will adversely affect the beneficial use of the receiving surface water.

Groundwater with a beneficial use of industrial service supply or industrial process supply shall not contain pollutant levels that impair current or potential industrial uses.

3.4.3 RADIOACTIVITY

At a minimum, groundwater designated for use as domestic or municipal supply (MUN) shall not contain concentrations of radionuclides in excess of the MCLs specified in Table 4 (Radioactivity) of Section 64443 of Title 22, which is incorporated by reference into this plan. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect. (See Table 3-5.)

3.4.4 TASTE AND ODOR

Groundwater designated for use as domestic or municipal supply (MUN) shall not contain taste- or odor-producing substances in concentrations that cause a nuisance or adversely affect beneficial uses. At a minimum, groundwater designated for use as domestic or municipal supply shall not contain concentrations in excess of the SMCLs specified in Tables 64449-A (Secondary MCLs-Consumer Acceptance Limits) and 64449-B (Secondary MCLs-Ranges) of Section 64449 of Title 22, which is incorporated by reference into this plan. This incorporation-by-reference is prospective, including future changes to the incorporated provisions as the changes take effect. (See Table 3-5.)

3.5 OBJECTIVES FOR THE DELTA

The objectives contained in the State Water Board's 1995 "Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary" and any revisions thereto shall apply to the waters of the Sacramento-San Joaquin Delta and adjacent waters as specified in that plan.

3.6 OBJECTIVES FOR ALAMEDA CREEK WATERSHED

The water quality objectives contained in Table 3-7 apply to the surface and groundwaters of the Alameda Creek watershed above Niles.

Wastewater discharges that cause the surface water limits in Table 3-7 to be exceeded may be allowed if they are part of an overall waterwastewater resource operational program developed by those agencies affected and approved by the Water Board.

TABLES

Table 3-1: Water Quality Objectives for Coliform Bacteria

Table 3-2: U.S. EPA Bacteriological Criteria for Water Contact Recreation

Table 3-3: Marine Water Quality Objectives for Toxic Pollutants for Surface Waters

Table 3-3A: Water Quality Objectives for Copper and Nickel in Lower South San Francisco Bay

Table 3-4: Freshwater Water Quality Objectives for Toxic Pollutants for Surface Waters

Table 3-5: Water Quality Objectives for Municipal Supply

Table 3-6: Water Quality Objectives for Agricultural Supply

Table 3-7: Water Quality Objectives for the Alameda Creek Watershed above Niles

Table 3-1: Water Quality Objectives for Coliform Bacteria[a]

Beneficial Use	Fecal Coliform (MPN/100ml)	Total Coliform (MPN/100ml
Water Contact Recreation	geometric mean < 200 90th percentile < 400	median < 240 no sample > 10,000
Shellfish Harvesting[b]	median < 14 90th percentile < 43	median < 70 90th percentile < 230[c]
Non-contact Water Recreation[d]	mean < 2000 90th percentile < 4000	
Municipal Supply:		
- Surface Water[e]	geometric mean < 20	geometric mean < 100
- Groundwater		< 1.1[f]

NOTES:

a. Based on a minimum of five consecutive samples equally spaced over a 30-day period.

b. Source: National Shellfish Sanitation Program.

c. Based on a five-tube decimal dilution test or 300 MPN/100 ml when a three-tube decimal dilution test is used.

d. Source: Report of the Committee on Water Quality Criteria, National Technical Advisory Committee, 1968.

e. Source: DOHS recommendation.

f. Based on multiple tube fermentation technique; equivalent test results based on other analytical techniques, as specified in the National Primary Drinking Water Regulation, 40 CFR, Part 141.21(f), revised June 10, 1992, are acceptable.

Table 3-2: U.S. EPA Bacteriological Criteria for Water Contact Recreation[1,2]
(in colonies per 100 ML)

	Fresh Water		Salt Water
	Enterococci	**E. Coli**	**Enterococci**
Steady State (all areas)	33	126	35
Maximum at:			
- designated beach	61	235	104
- moderately used area	89	298	124
- lightly used area	108	406	276
- infrequently used area	151	576	500

NOTES:

1. The criteria were published in the Federal Register, Vol. 51, No. 45 / Friday, March 7, 1986 / 8012-8016. The Criteria are based on:
(a) Cabelli, V.J. 1983. Health Effects Criteria for Marine Recreational Waters. U.S. EPA, EPA 600/1-80-031, Cincinnati, Ohio, and
(b) Dufour, A.P. 1984. Health Effects Criteria for Fresh Recreational Waters. U.S. EPA, EPA 600/1-84-004, Cincinnati Ohio.

2. The U.S. EPA criteria apply to water contact recreation only. The criteria provide for a level of production based on the frequency of usage of a given water contact recreation area. The criteria may be employed in special studies within this region to differentiate between pollution sources or to supplement the current coliform objectives for water contact recreation.

Table 3-3: Marine[a] Water Quality Objectives for Toxic Pollutants for Surface Waters (all values in ug/l)

Compound	4-day Average	1-hr Average	24-hr Average
Arsenic[b, c, d]	36	69	
Cadmium[b, c, d]	9.3	42	
Chromium VI[b, c, d, e]	50	1100	
Copper[c, d, f]			
Cyanide[g]			
Lead[b, c, d]	8.1	210	
Mercury[h]	0.025	2.1	
Nickel[b, c, d]	8.2	74	
Selenium[i]			
Silver[b, c, d]		1.9	
Tributyltin[j]			
Zinc[b, c, d]	81	90	
PAHs[k]			15

NOTES:

a. Marine waters are those in which the salinity is equal to or greater than 10 parts per thousand 95% of the time, as set forth in Chapter 4 of the Basin Plan. Unless a site-specific objective has been adopted, these objectives shall apply to all marine waters except for the South Bay south of Dumbarton Bridge, where the California Toxics Rule (CTR) applies. For waters in which the salinity is between 1 and 10 parts per thousand, the applicable objectives are the more stringent of the freshwater (Table 3-4) or marine objectives.

b. Source: 40 CFR Part 131.38 (California Toxics Rule or CTR), May 18, 2000.

c. These objectives for metals are expressed in terms of the dissolved fraction of the metal in the water column.

d. According to the CTR, these objectives are expressed as a function of the water-effect ratio (WER), which is a measure of the toxicity of a pollutant in site water divided by the same measure of the toxicity of the same pollutant in laboratory dilution water. The 1-hr. and 4-day objectives = table value X WER. The table values assume a WER equal to one.

e. This objective may be met as total chromium.

f. Water quality objectives for copper were promulgated by the CTR and may be updated by U.S. EPA without amending the Basin Plan. Note: at the time of writing, the values are 3.1 ug/l (4-day average) and 4.8 ug/l (1-hr. average). The most recent version of the CTR should be consulted before applying these values.

g. Cyanide criteria were promulgated in the National Toxics Rule (NTR). The NTR criteria specifically apply to San Francisco Bay upstream to and including Suisun Bay and Sacramento-San Joaquin Delta. Note: at the time of writing, the values are 1.0 ug/l (4-day average) and 1.0 ug/l (1-hr. average).

h. Source: U.S. EPA Ambient Water Quality Criteria for Mercury (1984).

i. Selenium criteria were promulgated for all San Francisco Bay/Delta waters in the National Toxics Rule (NTR). The NTR criteria specifically apply to San Francisco Bay upstream to and including Suisun Bay and Sacramento-San Joaquin Delta. Note: at the time of writing, the values are 5.0 ug/l (4-day average) and 20 ug/l (1-hr. average).

j. Tributyltin is a compound used as an antifouling ingredient in marine paints and toxic to aquatic life in low concentrations. U.S. EPA has published draft criteria for protection of aquatic life (Federal Register: December 27, 2002, Vol. 67, No. 249, Page 79090-79091). These criteria are cited for advisory purposes. The draft criteria may be revised.

k. The 24-hour average aquatic life protection objective for total PAHs is retained from the 1995 Basin Plan. Source: U.S. EPA 1980.

Table 3-3A: Water Quality Objectives for Copper and Nickel in Lower South San Francisco Bay

Compound	4-day Average (CCC)[1]	1-hr Average (CMC)[2]	Extent of Applicability
Copper	6.9	10.8	Marine and Estuarine Waters Contiguous to SF Bay, South of Dumbarton Bridge
Nickel	11.9	62.4[*]	Marine and Estuarine Waters Contiguous to SF Bay, South of Dumbarton Bridge

[*] Handbook of WQS, 2nd ed. 1994 in Section 3.7.6 states that the CMC = Final AcuteValue/2; 62.4 is the Final Acute Value (resident species database)/2; so the site-specific CMC is lower than the California Toxics Rule value because we are using the resident species database instead of the National Species Database.

[1] Criteria Continuous Concentration

[2] Criteria Maximum Concentration

Table 3-4: Freshwater[a] Water Quality Objectives for Toxic Pollutants for Surface Waters (all values in ug/l)

COMPOUND	4-DAY AVERAGE	1-HR AVERAGE
Arsenic[b, c, d]	150	340
Cadmium[d]	e	e
Chromium III[c, f]		
Chromium VI[b, c, d, g]	11	16
Copper[b, c, d]	9.0[h]	13[h]
Cyanide[i]		
Lead[b, c, d]	2.5[j]	65[j]
Mercury[k]	0.025	2.4
Nickel[b, c, d]	52[l]	470[l]
Selenium[m]		
Silver[b, c, d]		3.4[n]
Tributyltin[o]		
Zinc[b, c, d]	120[p]	120[p]

NOTES:

a. Freshwaters are those in which the salinity is equal to or less than 1 part per thousand 95% of the time, as set forth in Chapter 4 of the Basin Plan. Unless a site-specific objective has been adopted, these objectives shall apply to all freshwaters except for the South Bay south of Dumbarton Bridge, where the California Toxics Rule (CTR) applies. For waters in which the salinity is between 1 and 10 parts per thousand, the applicable objectives are the more stringent of the marine (Table 3-3) and freshwater objectives.

b. Source: 40 CFR Part 131.38 (California Toxics Rule or CTR), May 18, 2000.

c. These objectives for metals are expressed in terms of the dissolved fraction of the metal in the water column.

d. These objectives are expressed as a function of the water-effect ratio (WER), which is a measure of the toxicity of a pollutant in site water divided by the same measure of the toxicity of the same pollutant in laboratory dilution water. The 1-hr. and 4-day objectives = table value X WER. The table values assume a WER equal to one.

e. The objectives for cadmium and other noted metals are expressed by formulas where H = ln (hardness) as CaCO3 in mg/l: The four-day average objective for cadmium is $e^{(0.7852\ H\ -\ 3.490)}$. This is 1.1 µg/l at a hardness of 100 mg/l as $CaCO_3$. The one-hour average objective for cadmium is $e^{(1.128\ H\ -\ 3.828)}$. This is 3.9 µg/l at a hardness of 100 mg/l as $CaCO_3$.

f. Chromium III criteria were promulgated in the National Toxics Rule (NTR). The NTR criteria specifically apply to San Francisco Bay upstream to and including Suisun Bay and Sacramento-San Joaquin Delta. Note: at the time of writing, the values are 180 ug/l (4-day average) and 550

ug/l (1-hr. average). The objectives for chromium III are based on hardness. The values in this footnote assume a hardness of 100 mg/l $CaCO_3$. At other hardnesses, the objectives must be calculated using the following formulas where H = ln (hardness): The 4-day average objective for chromium III is $-0.860 \times e^{(0.8190H+1.561)}$. The 1-hour average for chromium III is $0.316 \times e^{(0.8190 H+3.688)}$.

g. This objective may be met as total chromium.

h. The objectives for copper are based on hardness. The table values assume a hardness of 100 mg/l $CaCO_3$. At other hardnesses, the objectives must be calculated using the following formulas where H = ln (hardness): The 4-day average objective for copper is $0.960 \times e^{(0.8545H-1.702)}$. The 1-hour average for copper is $0.960 \times e^{(0.9422H-1.700)}$.

i. Cyanide criteria were promulgated in the National Toxics Rule (NTR). The NTR criteria specifically apply to San Francisco Bay upstream to and including Suisun Bay and Sacramento-San Joaquin Delta. Note: at the time of writing, the values are 5.2 ug/l (4-day average) and 22 ug/l (1-hr. average).

j. The objectives for lead are based on hardness. The table values assume a hardness of 100 mg/l $CaCO_3$. At other hardnesses, the objectives must be calculated using the following formulas where H = ln (hardness): The 4-day average objective is $(1.46203 - 0.475712H) \times e^{(1.273H -4.705)}$. The 1-hour average for lead is $(1.46203 - 0.145712H) \times e^{(1.273H-1.460)}$.

k. Source: U.S. EPA Quality Criteria for Water 1986 (EPA 440/5-86-001), which established a mercury criterion of 0.012 ug/l. The Basin Plan set the objective at 0.025 based on considerations of the level of detection attainable at that time.

l. The objectives for nickel are based on hardness. The table values assume a hardness of 100 mg/l $CaCO_3$. At other hardnesses, the objectives must be calculated using the following formulas where H = ln (hardness): The 4-day average objective is $0.997 \times e^{(0.8460H + 0.0584)}$. The 1-hour average objective is $0.998 \times e^{(0.8460H + 2.255)}$.

m. Selenium criteria were promulgated for all San Francisco Bay/Delta waters in the National Toxics Rule (NTR). The NTR criteria specifically apply to San Francisco Bay upstream to and including Suisun Bay and Sacramento-San Joaquin Delta. Note: at the time of writing, the values are 5.0 ug/l (4-day average) and 20 ug/l (1-hr. average).

n. The objective for silver is based on hardness. The table value assumes a hardness of 100 mg/l $CaCO_3$. At other hardnesses, the objective must be calculated using the following formula where H = ln (hardness): The 1-hour average objective for silver is $0.85 \times e^{(1.72H - 6.52)}$. U.S. EPA has not developed a 4-day criterion.

o. Tributyltin is a compound used as an antifouling ingredient in marine paints and toxic to aquatic life in low concentrations. U.S. EPA has published draft criteria for protection of aquatic life (Federal Register: December 27, 2002, Vol. 67, No. 249, Page 79090-79091). These criteria are cited for advisory purposes. The draft criteria may be revised.

p. The objectives for zinc are based on hardness. The table values assume a hardness of 100 mg/l $CaCO_3$. At other hardnesses, the objectives must be calculated using the following formulas where H = ln (hardness): The 4-day average objective for zinc is $0.986 \times e^{(0.8473 H+0.884)}$. The 1-hour average for zinc is $0.978 \times e^{(0.8473 H+ 0.884)}$.

Table 3-5: Water Quality Objectives for Municipal Supply

Parameter	Objective (in MG/L)
Physical:	
Color (units)[a]	15.0
Odor (number)[a]	3.0
Turbidity (NTU)[a]	5.0
pH[b]	6.5 - 8.0
TDS[c]	500.0
EC (mmhos/cm)[c]	900
Corrosivity	non-corrosive
Inorganic Parameters:	
Aluminum[d]	1.0[d] / 0.2[a]
Antimony[d]	0.006
Arsenic[d]	0.05
Asbestos[d]	7 MFL[e]
Barium[d]	1.0
Beryllium[d]	0.004
Chloride[c]	250.0
Cadmium[d]	0.005
Chromium[d]	0.05
Copper[a]	1.0
Cyanide[d]	0.15
Fluoride[f]	0.6 - 1.7[g]
Iron[a]	0.3
Lead[b]	0.05
Manganese[a]	0.05
Mercury[d]	0.002
Nickel[d]	0.1
Nitrate (as NO_3)[d]	45.0
Nitrate + Nitrite (as N)[d]	10.0
Nitrite (as N)[d]	1.0
Selenium[d]	0.05
Silver[b]	0.1
Sulfate[c]	250.0
Thallium[d]	0.002
Zinc[a]	5.0
Organic Parameters:	
MBAS (Foaming agents)[a]	0.5
Oil and grease[b]	none
Phenols[b]	0.001
Trihalomethanes[b]	0.1
Chlorinated Hydrocarbons:	
Endrin[h]	0.002
Lindane[h]	0.0002
Methoxychlor[h]	0.03
Toxaphene[h]	0.003
2,3,7,8-TCDD (Dioxin)[h]	3×10^{-8}
2,4-D[h]	0.07
2,4,4-TP Silvex[h]	0.05

Parameter	Objective (in MG/L)
Synthetic Organic Chemicals:	
Alachor[h]	0.002
Atrazine[h]	0.001
Bentazon[h]	0.018
Benzo(a)pyrene[h]	0.0002
Dalapon[h]	0.2
Dinoseb[h]	0.007
Diquat[h]	0.02
Endothall[h]	0.1
Ethylene dibromide[h]	0.00005
Glyphosate[h]	0.7
Heptachlor[h]	0.00001
Heptachlor epoxide[h]	0.00001
Hexachlorecyclopentadiene[h]	0.001
Molinate[h]	0.02
Oxarnyl[h]	0.05
Pentachlorophenol[h]	0.001
Picloram[h]	0.5
Polychlorinated Biphenyls[h]	0.0005
Simazine[h]	0.004
Thiobencarb[h]	0.07 / 0.001
Volatile Organic Chemicals:	
Benzene[h]	0.001
Carbon Tetrachloride[h]	0.005
1,2-Dibromo-3-chloropropane[h]	0.0002
1,2-Dichlorobenzene[h]	0.6
1,4-Dichlorobenzene[h]	0.005
1,1-Dichloroethane[h]	0.005
1,2-Dichloroethane[h]	0.0005
cis-1,2-Dichloroethlyene[h]	0.006
trans-1,2-Dichloroethylene[h]	0.01
1,1-Dichloroethylene[h]	0.006
Dichloromethane[h]	0.005
1,2-Dichloropropane[h]	0.005
1,3-Dichloropropene[h]	0.0005
Ethylbenzene[h]	0.7
Methyl-tert-butyl ether[h]	0.13 / 0.005
Monochlorobenzene[h]	0.07
Styrene[h]	0.1
1,1,2,2-Tetrachloroethane[h]	0.001
Tetrachloroethylene[h]	0.005
1,2,4-Trichlorobenzene[h]	0.005
1,1,1-Trichloroethane	0.200
1,1,2-Trichloroethane[h]	0.005
Trichloroethylene[h]	0.005
Trichlorofluoromethane	0.15

Parameter	Objective (in MG/L)
Volatile Organic Chemicals (cont'd):	
1,1,2-Trichloro-1,2,2-trifluoromethane[h]	1.2
Toluene[h]	0.15
Vinyl Chloride[h]	0.0005
Xylenes (single or sum of isomers)[h]	1.750
Radioactivity:	
Combined Radium-226 and Radium-228[i]	5
Gross Alpha Particle Activity[i]	15i
Tritium[i]	20,000
Strontium-90[i]	8
Gross Beta Particle Activity[i]	50
Uranium[i]	20

NOTES:

a. Secondary Maximum Contaminant Levels as specified in Table 64449-A of Section 64449, Title 22 of the California Code of Regulations, as June 3, 2005.

b. Table III-2, 1986 Basin Plan

c. Secondary Maximum Contaminant Levels as specified in Table 64449-B of Section 64449, Title 22 of the California Code of Regulations, as of June 3, 2005. (Levels indicated are "recommended" levels. Table 64449-B contains a complete list of upper and short-term ranges.)

d. Maximum Contaminant Levels as specified in Table 64431-A (Inorganic Chemicals) of Section 64431, Title 22 of the California Code of Regulations, as of June 3, 2005.

e. MFL = million fibers per liter; MCL for fibers exceeding 10 um in length.

f. Flouride objectives depend on temperature.

g. A complete list of optimum and limiting concentrations is specified in Table 64433.2-A of Section 64433.2, Title 22 of the California Code of Regulations, as of June 3, 2005.

h. Maximum Contaminant Levels as specified in Table 64444-A (Organic Chemicals) of Section 64444, Title 22 of the California Code of Regulations, as of June 3, 2005.

i. Maximum Contaminant Levels as specified in Table 4 (Radioactivity) of Section 64443, Title 22 of the California Code of Regulations, as of June 3, 2005.

j. Included Radium-226 but excludes Radon and Uranium.

MG/L Milligrams per liter
pCi/L pico Curries per liter

Table 3-6: Water Quality Objectives for Agricultural Supply[a] (in mg/l)

Parameter	Threshold	Limit	Limit for Livestock Watering
Physical:			
pH	5.5-8.3	4.5-9.0	
TDS			10,000.0
EC (mmhos / cm)		0.2-3.0	
Inorganic Parameters:			
Aluminum	5.0	20.0	5.0
Arsenic	0.1	2.0	0.2
Beryllium	0.1	0.5	
Boron	0.5	2.0	5.0
Chloride	142.0	355.0	
Cadmium	0.01	0.5	0.05
Chromium	0.1	1.0	1.0
Cobalt	0.05	5.0	1.0
Copper	0.2	5.0	0.5
Flouride	1.0	15.0	2.0
Iron	5.0	20.0	
Lead	5.0	10.0	0.1
Lithium		2.5[b]	
Manganese	0.2	10.0	
Molybdenum	0.01	0.05	0.5
Nickel	0.2	2.0	
$NO_3 + NO_2$ (as N)	5.0	30[c]	100.0
Selenium		0.02	0.05
Sodium adsorption ratio (adjusted)[d]	3.0	9.0	
Vanadium	0.1	1.0	0.1
Zinc	2.0	10.0	25

NOTES:

a. For an extensive discussion of water quality for agricultural purposes, see "A Compilation of Water Quality Goals," Central Valley Regional Water Quality Control Board, May 1993.

b. For citrus irrigation, maximum 0.075 mg/l.

c. For sensitive crops. Values are actually for NO_3-N + NH_4-N.

d. Adjusted SAR = { Na /[(Ca + Mg)+2]$^{0.5}$ }{1 + [8.4 – pHc]}, where pHc is a calculated value based on total cations, Ca + Mg, and CO_3 + HCO_3, in me/l. Exact calculations of pHc can be found in "Guidelines for Interpretation of Water Quality for Agriculture" prepared by the Univ. of California Cooperative Extension.

Table 3-7: Water Quality Objectives for the Alameda Creek Watershed Above Niles

SURFACE WATER QUALITY OBJECTIVES (ALAMEDA CREEK AND TRIBUTARIES)

TDS:	250 mg/l (90 day-arithmetic mean)
	360 mg/l (90 day-90th percentile)
	500 mg/l (daily maximum)
Chlorides:	60 mg/l (90 day-arithmetic mean)
	100 mg/l (90 day-90th percentile)
	250 mg/l (daily maximum)

GROUNDWATER QUALITY OBJECTIVES

(Concentration not to be exceeded more than 10 percent of the time during one year.)

Central Basin

TDS:	Ambient or 500 mg/l, whichever is lower
Nitrate (NO_3):	45 mg/l

Fringe Subbasins

TDS:	Ambient or 1000 mg/l, whichever is lower
Nitrate (NO_3):	45 mg/l

Upland and Highland Areas

California domestic water quality standards set forth in California Code of Regulations, Title 22 and current county standards.

Ambient water quality conditions at a proposed project area will be determined by Zone 7 of the Alameda County Flood Control and Water Conservation District at the time the project is proposed, with the cost borne by the project proponents. Ambient conditions apply to the water-bearing zone with the highest quality water.

Waters designated for use as domestic or municipal water supply shall not contain concentrations of chemicals in excess of natural concentrations or the limits specified in California Code of Regulations, Title 22, Chapter 15, particularly Tables 64431-A and 64431-B of Section 64431, Table 64444-A of Section 64444, and Table 4 of Section 64443.

CHAPTER 4: IMPLEMENTATION PLANS

INTRODUCTION

The San Francisco Bay Regional Water Quality Control Board (Water Board)'s overall mission is to protect the beneficial uses supported by the quality of the San Francisco Bay Region (Region)'s surface water and groundwater. Together, the beneficial uses described in detail in Chapter 2 define the resources, services, and qualities of aquatic ecosystems that are the ultimate goals of protecting and achieving water quality. The objectives presented in Chapter 3 present a framework for determining whether water quality is indeed supporting these beneficial uses. This chapter describes in detail the Water Board's regulatory programs and specific plans of action for meeting water quality objectives and protecting beneficial uses.

The descriptions of specific actions to be taken by local public entities and industries to comply with the policies and objectives of this Water Quality Control Plan (Basin Plan) are intended for the guidance of local officials. The Water Board will consider any proposed alternative actions that are consistent with and achieve the policies and objectives of the Basin Plan.

This chapter describes the watershed management conceptual framework for water quality control in the Region and presents each of the individual regulatory programs that form part of this comprehensive approach. These programs are organized into general categories, including surface water protection and management, groundwater protection and management, wetland protection and management, and emerging program areas. Taken together, these programs constitute an integrated, comprehensive water quality control program that is protective, efficient, and flexible.

4.1 THE WATERSHED MANAGEMENT APPROACH

In 1995, the Water Board initiated a watershed management approach to regulating water quality, expanding its primary focus from point sources of pollution to include more diffuse sources such as urban and agricultural runoff. A five-year statewide Strategic Plan, initiated in 1995 and last updated in 2001, guides the water resource protection efforts of the State and Regional Water Boards. A key component of the Strategic Plan is the Watershed Management Initiative (WMI), which promotes a watershed management approach for water quality protection as discussed in Chapter 1.

The WMI is designed to integrate various surface water and groundwater regulatory programs while promoting cooperative, collaborative efforts within a watershed that are designed to improve water quality and protect the beneficial uses of the watershed's water bodies. The WMI is also designed to focus limited funding and resources on the highest priority water quality issues identified by the Water Board in consultation with local stakeholders. The Water Board's strategy for the WMI is contained in the report titled, "San Francisco Bay Regional Water Quality Control Board Watershed Management Initiative, Integrated Plan Chapter." This report is a regularly updated planning tool for identifying priorities to be funded by existing resources, as well as priority tasks that are currently not funded. For each update, activities are planned over the next one to two years, and in some cases, over the next five years. The report also contains descriptions of regional and watershed strategies, discusses how the Water Board is structured to implement the WMI, and how the Water Board is implementing a priority-setting process. The WMI builds upon the progress made to date by the Water Board's efforts, combined with local

watershed efforts led by other entities, and it also identifies tasks to be accomplished to fully implement the WMI. Examples of local implementation of the WMI are included in Section 4.1.3 Watershed Management in Countywide Programs and Individual Watersheds.

To implement the WMI in the Region, there are three levels of watershed management: 1) region-wide, 2) countywide, and 3) in sub-watersheds. This watershed management process is flexible and recognizes the existing institutional structures that can implement watershed management to protect water quality.

Some water quality issues are managed at the region-wide level. For example, the Water Board's water quality control program focuses in part on managing the influx of toxic pollutants to the Estuary's aquatic system, described in Section 4.1.2 Toxic Pollutant Management in the San Francisco Estuary System. The goal of this program element is to limit the total amount of pollutants in the entire system to ensure protection of beneficial uses. In cases where evidence suggests beneficial uses are not protected due to specific pollutants in the system, the program described in Section 4.1.1 Water Quality Attainment Strategies Including Total Maximum Daily Loads is initiated.

Other water quality issues are managed at the countywide level. The Region includes portions of nine counties, which all include shoreline on the Bay, permitted discharges to the Bay, and watershed drainage to the Bay. These institutions are therefore well suited to organize and/or participate in a watershed management approach at the countywide level, forming stakeholder groups that include municipalities, other organizations, and members of the public. Examples are discussed in Section 4.1.3 Watershed Management in Countywide Programs and Individual Watersheds. For example, several urban runoff management programs are organized at this countywide level.

Sub-watershed level watershed management occurs within the county-wide framework, as a result of priority setting that is strongly influenced by local input.

4.1.1 WATER QUALITY ATTAINMENT STRATEGIES INCLUDING TOTAL MAXIMUM DAILY LOADS

The Water Board intends to establish Water Quality Attainment Strategies (WQAS) including Total Maximum Daily Loads (TMDLs) where necessary and appropriate to ensure attainment and maintenance of water quality standards. WQAS and TMDLs for the Region are described in Chapter 7. Section 303(d) of the federal Clean Water Act requires states to identify water bodies that are not attaining water quality standards, and to establish TMDLs for pollutants causing the impairment (non-attainment of water quality standards) of listed water bodies. As such, TMDLs are the pollutant load levels necessary to attain the applicable water quality standards. A complete TMDL refers to the process and elements associated with establishing a TMDL that include, but are not limited to, problem statement, numeric target(s), source analysis, linkage analysis, wasteload and load allocations, implementation plan, and monitoring plan.

WQAS are development and implementation actions associated with implementing (attaining) water quality standards. Complete TMDLs are WQAS, but WQAS are not limited to 303(d)-list pollutants. For example, they may be developed for pollutants for which threat of impairment

provides cause for pollution prevention actions and related activities. WQAS may contain, but not necessarily include, all or some of the complete TMDL elements.

The Water Board will establish WQAS including TMDLs at the level (the Estuary, smaller segments within the Estuary, or individual watersheds) deemed most appropriate in terms of effectiveness and efficiency relative to the applicable water quality standard, types and locations of pollutant sources, and type and scale of implementation actions.

4.1.2 TOXIC POLLUTANT MANAGEMENT IN THE ESTUARY

The Water Board's water quality programs began decades ago with a focus on controlling the discharge of point sources of pollution such as municipal sewage and industrial wastewater. Since then, highly effective waste treatment systems have been built, essentially eliminating what had been major water quality problems associated with high nutrient and organic loading. In addition, the overall influx of toxic pollutants from point sources has significantly declined as a result of these efforts. Still, certain toxic pollutants remain a great concern.

The focus of efforts to attain water quality goals has expanded accordingly. Further reductions in point source pollutant loadings are being attained through complex, innovative programs often involving numerous public agencies and private organizations. Loading from diffuse sources, such as urban and agricultural runoff, had until recently, continued largely unchecked. These sources are now generally considered to be the largest source of pollutants to aquatic systems. Water Board programs aim to reduce this diffuse pollutant loading.

4.1.2.1 NUMERIC WATER QUALITY OBJECTIVES: WASTELOAD ALLOCATIONS

The numerical objectives presented in Chapter 3 define maximum levels of individual pollutants allowed in the waters of the region. These objectives are based on extensive technical information that relates concentrations of pollutants in water to adverse effects on beneficial uses.

Assuring that pollutant concentrations throughout the whole Estuary system will meet objectives for each pollutant requires (a) information on the fate, transport, and distribution of that pollutant and (b) quantification of loading from all sources, including riverine inputs, urban and agricultural runoff, and point source discharges. When this information is available, the total amount of each pollutant that can enter the system without exceeding water quality objectives can be calculated. The maximum pollutant load can then be allocated among all sources, a process known as wasteload allocation. By considering pollutant influx from all sources, wasteload allocation supports the identification and implementation of the most effective and economically efficient means of achieving water quality objectives in the larger Estuary system.

There are three limitations to this approach. First, there are many pollutants of local concern for which objectives have not been developed and adopted. The objectives for specific toxic pollutants contained in Chapter 3 are reasonable for the purposes of interim regulation because they provide a minimum level of protection in the Estuary; however, additional objectives are necessary to fully implement the wasteload allocation approach. The Water Board will establish water quality objectives for selected pollutants as the necessary technical information becomes available and a framework for assessing economic factors is developed.

Second, the wasteload allocation approach only considers the impact of individual pollutants. Aquatic systems in the region contain mixtures of pollutants in a complex and variable water matrix. Implementation of the toxicity objective described in the following section addresses this issue.

Finally, substances that accumulate in sediment or organisms pose a more complicated problem for water quality control. The additional considerations necessary for these pollutants are described below.

4.1.2.2 TOXIC POLLUTANT ACCUMULATION: MASS-BASED STRATEGIES

Wasteload allocations based on the achievement of numeric water quality objectives will provide appropriate protection of beneficial uses for many toxic pollutants. For some pollutants, however, concentrations in water are not good indicators of their impairment of beneficial uses. Instead, wasteload allocations for such compounds are developed based on mass rather than concentration, and tissue and sediment concentrations. Typically, mass-based allocations require more extensive technical information on the fate and transport of pollutants in the system than those based on water alone.

The Water Board implements the narrative objectives regarding sediment accumulation and bioaccumulation in several ways. These are discussed in greater detail later in this chapter. In general, pollutants are identified and monitored in both discharges and the aquatic system. At a minimum, limits placed on point and nonpoint discharges take pollutant accumulation into consideration. Ultimately, the goal is to develop system-wide, mass-based wasteload allocations for appropriate substances.

4.1.2.3 SCIENTIFIC RESEARCH: ONGOING REFINEMENT OF PROGRAMS

The quantity of pollutants in the Estuary system is the result of many complex and interacting factors beyond the total amount discharged day-to-day. Levels of pollutants in water, sediments, and aquatic organisms are regularly assessed through the Regional Monitoring Program and other surveillance described in Chapter 6.

In addition, implementation of this Water Quality Control Plan involves research and investigation on processes controlling the fate, transport, and distribution of pollutants. In the past, the Water Board has supported research on Delta outflow and associated flushing, sediment movement, chemical transformations within the aquatic system, and biological effects associated with existing and projected pollutant levels.

Information resulting from ongoing scientific research and regular monitoring within the Estuary is continuously incorporated into each of the programs described in detail later in this chapter. In addition, the Water Board typically requires technical investigations in situations where water quality problems have been identified but not enough information is available to craft appropriate courses of action. As a result, programs are constantly evolving as better scientific information becomes available.

4.1.2.4 RIVERINE FLOWS, SYSTEM FLUSHING, AND POLLUTANT LOADING

4.1.2.4.1 DELTA OUTFLOW

In addition to pollution control measures, achieving water quality objectives and protecting the beneficial uses of the San Francisco Bay Estuary system (particularly fish migration and estuarine habitat) are depends on freshwater outflow from the Delta. Adequate freshwater inflow to the Bay system is necessary to control salinity, to provide mixing (particularly in the entrapment zone), to maintain proper temperature, and to flush out residual pollutants that cannot be eliminated by treatment or nonpoint source management. Except for local drainage and wastewater discharges, Delta outflow provides virtually all the freshwater inflow to San Francisco Bay. However, the availability of adequate Delta outflow to meet these needs is very uncertain because of the existing and potential upstream diversions of water and fluctuations in rainfall.

The State Board first addressed the issue of the Bay's inflow needs in the Water Quality Control Plan for the Sacramento-San Joaquin Delta and Suisun Marsh in the Water Rights Decision 1485, issued in August, 1978. In these documents, the State Board established maximum salinity standards (but no corresponding flow standards for the Delta) and required the two major water diverters to conduct research and determine:

- Outflow needs in San Francisco Bay, including the ecological benefits of unregulated outflows and salinity gradients established by them; and
- The need for winter flows for long-term protection of striped bass and other aquatic organisms in the Delta.

In 1993, estuarine scientists and managers associated with the San Francisco Estuary Project recommended development of salinity standards for different parts of the year to be used in conjunction with flow standards. Specifically, they indicate that average upstream positions of the near-bottom 2 0/00 isohaline would be an appropriate index for salinity standards.

Technical evidence developed during the Estuary Project process and the State Board Bay/Delta hearings will be used to help formulate future amendments to the Basin Plan.

4.1.2.4.2 SAN LUIS DRAIN

The San Luis Drain is a proposed method of funneling agricultural runoff from the San Joaquin Valley into the Delta.

Agricultural irrigation in the San Joaquin Valley leads to high salinity concentrations in the soil, which may be harmful to crops. To alleviate this condition, tile drains have been and are being installed to carry the saline water away from the fields. However, there have been adverse environmental effects associated with this wastewater.

In 1982, the U.S. Fish and Wildlife Service discovered selenium concentrations in fish from the San Luis Drain and Kesterson Reservoir to be as much as 100 times higher than background. It also found high mortalities and deformities among newborn coots, grebes, stilts, and ducks.

There was early concern about the potential for impacts on beneficial uses in the Estuary if the Drain were completed and discharged into the Delta. In response, the Water Board prohibited the proposed discharge in 1964, unless compelling evidence that the proposed discharge would not harm beneficial uses was submitted by proponents. In 1981, the Water Board requested that the State Board take the lead role in developing, revising, renewing, and enforcing waste discharge requirements for the Drain.

Unfortunately, the problem of agricultural drainage still exists. The San Joaquin Valley Drainage Program, another state and federal interagency program, has begun to investigate further the problems associated with the drainage of agricultural lands and to develop solutions.

4.1.3 WATERSHED MANAGEMENT COUNTYWIDE PROGRAMS AND INDIVIDUAL WATERSHEDS

Protection of beneficial uses associated with the Estuary also depends upon achieving water quality goals within each of the watersheds draining to the Bay. Successful wasteload allocations depend upon limiting pollutant influx from nonpoint as well as point sources. In turn, nonpoint source control is dependent on a wide range of factors, including physical factors such as the geology and hydrological characteristics of an area; existing natural resources such as vegetation along streambanks; and a wide range of human activities.

Watershed management planning in each countywide program or individual watershed involves a series of steps. First, a detailed assessment of current conditions, including identification of existing or potential problems, is conducted. Next, the process attempts to bring together all affected stakeholders and interested parties to determine how they would manage their watershed. Finally, specific actions are taken during implementation of the countywide or local watershed action plan.

The Water Board firmly believes that watershed planning and protection efforts will not be effective unless solutions are defined and implemented at the local level. The following sections present four examples of local watershed management planning activities supported by the Water Board.

4.1.3.1 THE NAPA RIVER WATERSHED

The Water Board has initiated county-level watershed management planning efforts. The first began in the Napa River Watershed where depressed oxygen levels, high coliform levels, and sedimentation due to erosion were recurring problems in segments of the Napa River.

The Water Board initiated the planning process by preparing a complete resource evaluation in cooperation with a wide range of local public and private entities. This evaluation encompassed traditional evaluations of natural resources and also included descriptions of existing management and regulatory frameworks, funding, and tax incentive programs to support the local planning process.

The Water Board is supporting local agency staff, public officials, agricultural landowners, urban residents of Napa County, and the Napa Resource Conservation District in their efforts to define watershed management goals and specific actions that will eventually allow those goals to be

met. In 1999, the Water Board issued waste discharge requirements (WDRs) for the Napa River Flood Control Project, which has set a national standard for innovative, community-based planning to ensure a "Living River" corridor along the Napa River that protects water quality, successfully integrating flood control, water quality, and habitat protection requirements.

4.1.3.2 THE SANTA CLARA BASIN WATERSHED MANAGEMENT INITIATIVE

In 1996, the Water Board and the U.S. EPA initiated a broad stakeholder effort to encourage local stewardship in the Santa Clara basin as part of the statewide WMI. The Santa Clara basin is defined as the San Francisco Bay south of the Dumbarton Bridge and the watersheds draining to that segment of the Bay. The Santa Clara Basin Watershed Management Initiative is a broad-based stakeholder group of 32 signatories from local, state and federal public agencies, business and trade associations, and civic and environmental groups and programs. The declared purpose of this WMI is "to develop and implement a comprehensive watershed management program - one that recognizes that healthy watersheds mean addressing water quality problems and quality of life issues for the people, animals and plants that live in the watershed." This WMI first established a mission statement, goals, planning objectives for development of a watershed action plan, implementation objectives, and a framework for conducting a watershed assessment. The most outstanding successes of this WMI have been in sustaining organizational continuity, providing a forum for stakeholder input on regulatory actions, and producing a variety of outreach materials for the general public to assist in natural resource protection. This WMI has continued to develop its foundation by producing watershed assessments (2002), and a watershed action plan (2003), and by further developing its priorities for implementation to protect and improve water quality (2005).

4.1.3.3 THE TOMALES BAY WATERSHED

The Tomales Bay watershed in western Marin County is one of the major estuaries on the west coast of the United States. It has a diverse ecosystem and several notable tributaries, including Lagunitas Creek, which has one of the few remaining viable coho salmon runs in central California. In December 1999, the local citizens and state, federal, and local agencies formed the Tomales Bay Watershed Council. The Council produced a Stewardship Plan for the Tomales Bay watershed to ensure that water quality in Tomales Bay and its tributary streams is sufficient to support natural resources and beneficial uses. The plan also includes recommendations to restore and protect the integrity of natural habitats and native plant communities, which contribute to improved water quality. The Water Board has actively participated on the Council, working with the other agencies and interested parties to coordinate monitoring and recommend funding for grant projects for a variety of pollution prevention and restoration projects within the watershed.

4.1.3.4 THE CONTRA COSTA WATERSHED FORUM

The Contra Costa Watershed Forum (CCWF) was established as a result of a countywide Creek and Watershed Symposium in 1999. The CCWF is an open committee of approximately 50 organizations, including federal, state, and local agencies; local governments; a professional watershed research organization; local non-profit environmental and education organizations; community volunteer groups; and private citizens. The CCWF staff are from the Contra Costa County Community Development Department. This diverse group of stakeholders is united by their concern for the watersheds of Contra Costa County. Through the coordinated activities of

the CCWF, local creek and watershed groups have been sustained, and the CCWF has received grant funding for creek surveys and mapping, biological water quality (benthic macroinvertebrate) monitoring, and production of the Watershed Atlas. The Watershed Atlas compiles information on geography, hydrology, demographics, impervious surface, drainage patterns and much other information pertinent to water quality protection and evaluation, including activities of local watershed groups and restoration projects. The Water Board supports the CCWF by attendance at meetings, management of grant-funded projects, and work with CCWF staff on setting watershed priorities. These efforts are leading to water quality improvements as the citizens of Contra Costa County become more directly involved in assessing, monitoring, restoring, and protecting their watersheds.

4.2 DISCHARGE PROHIBITIONS APPLICABLE THROUGHOUT THE REGION

To protect water quality of all aquatic systems throughout the region, the discharge prohibitions listed in Table 4-1 apply. The Water Board will not allow exceptions to these prohibitions, except where noted below.

Exceptions to Prohibitions 1, 2, and 3 will be considered where:

- An inordinate burden would be placed on the discharger relative to beneficial uses protected and an equivalent level of environmental protection can be achieved by alternate means, such as an alternative discharge site, a higher level of treatment, and/or improved treatment reliability; or
- A discharge is approved as part of a reclamation project; or
- It can be demonstrated that net environmental benefits will be derived as a result of the discharge; or
- A discharge is approved as part of a groundwater clean-up project, and in accordance with Resolution No. 88-160 "Regional Board Position on the Disposal of Extracted Groundwater from Groundwater Clean-up Projects," and it has been demonstrated that neither reclamation nor discharge to a POTW is technically and economically feasible, and the discharger has provided certification of the adequacy and reliability of treatment facilities and a plan that describes procedures for proper operation and maintenance of all treatment facilities. (The Water Board recognizes the resource value of extracted and treated groundwater and urges its utilization for the highest beneficial use for which applicable water quality standards can be achieved.)

In reviewing requests for exceptions, the Water Board will consider the reliability of the discharger's system in preventing inadequately treated wastewater from being discharged to the receiving water and the environmental consequences of such discharges.

Prohibitions 1 through 5 refer to particular characteristics of concern to beneficial uses. The Water Board may consider an exception to 4 provided that any proposed reclamation project demonstrates that beneficial uses will be protected. This broad language has been and will be interpreted by the Water Board on a case-by-case basis. It should be noted that the Water Board will consider all discharges of treated sewage and other discharges where the treatment process

is subject to upset to contain particular characteristics of concern unless the discharger can demonstrate that the discharge of inadequately treated waste will be reliably prevented.

4.2.1 SUMMARY

The detailed program descriptions presented in the remainder of this chapter are focused on protecting water quality in systems ranging from small creeks to the larger Estuary.

The section on point source control focuses primarily on protecting beneficial uses in each segment of the Estuary, as well as the whole system. The section on nonpoint source control focuses primarily on individual watersheds, but also on the contributions of runoff to the larger Bay system. The section on groundwater protection and management centers on groundwater basins within each watershed. The section on emerging program areas describes resources and issues that have increasingly become the focus of Water Board activity. Often, these areas require integrated and innovative approaches that are substantially different than those that exist in established programs.

4.3 POINT SOURCE CONTROL

Surface waters in the region consist of inland surface water (freshwater lakes, rivers, and streams), estuaries, enclosed bays, and ocean waters. Historical and ongoing wasteloads contributed to the surface water bodies in the region come from upstream discharges carried into the region via Delta outflow, direct input in the forms of point and nonpoint sources, and indirect input via groundwater seepage.

A point source usually refers to waste emanating from a single, identifiable location, while a nonpoint source usually refers to waste emanating from diffuse locations. While legally considered point sources, stormwater sewer systems are discussed under the nonpoint source control because waste entering the systems is generated from diffuse sources. This section describes control measures for point source discharges. The Water Board may control either type of discharge, but approaches may differ.

Wasteloads from point sources are those that are generally associated with pollutant discharges from an identifiable location to a specific receiving water body. Major types of point sources include:

- Treated municipal sewage discharged from Publicly Owned Treatment Works (POTWs), which often consist of a combination of domestic, industrial, and commercial waste streams;
- Treated industrial wastewater resulting from industrial operations, processing, cleaning, and cooling;
- Treated groundwater from clean-up of groundwater pollution sites; and,
- Other miscellaneous types of discharges, including certain non-point sources with a physically identifiable point of discharge.

4.4 WASTE DISCHARGE PERMITTING PROGRAM

Point source discharges to surface waters are generally controlled through waste discharge requirements issued under the federal National Pollutant Discharge Elimination System (NPDES) permits. Although the NPDES program was established by the federal Clean Water Act, the permits are prepared and enforced by the Water Boards per California's delegated authority for the act.

Issued in five-year terms, an NPDES permit usually contains components such as discharge prohibitions, effluent limitations, and necessary specifications and provisions to ensure proper treatment, storage, and disposal of the waste. The permit often contains a monitoring program that establishes monitoring stations at effluent outfall and receiving waters.

Under the state's Porter-Cologne Water Quality Control Act, any person discharging or proposing to discharge waste within the region (except discharges into a community sewer system) that could affect the quality of the waters of the state is required to file a Report Of Waste Discharge (ROWD). The Water Board reviews the nature of the proposed discharge and adopts Waste Discharge Requirements (WDRs) to protect the beneficial uses of waters of the state. Waste discharge requirements could be adopted for an individual discharge, or a specific type of discharges in the form of a general permit. The Water Board may waive the requirements for filing a ROWD or issuing WDRs for a specific discharge where such a waiver is not against the public interest. NPDES requirements may not be waived.

Acceptable control measures for point source discharges must ensure compliance with NPDES permit conditions, including the discharge prohibitions (Table 4-1) and the effluent limitations provided on the following pages. In addition, control measures must satisfy water quality objectives set forth in the Basin Plan unless the Water Board judges that related economic, environmental, or social considerations merit a modification after a public hearing process has been conducted. Control measures employed must be sufficiently flexible to accommodate future changes in technology, population growth, land development, and legal requirements.

4.5 EFFLUENT LIMITATIONS

4.5.1 TECHNOLOGY- AND WATER QUALITY-BASED LIMITATIONS

The federal Clean Water Act (CWA) requires that NPDES permits include technology-based and, where appropriate, water quality-based effluent limitations. Technology-based effluent limitations are promulgated performance standards based on secondary treatment or best practicable control technology. When technology-based limitations fail to attain or maintain acceptable water quality (as measured by water quality objectives) or comply with water quality control plans, additional or more stringent effluent limitations will be required in order to attain water quality objectives. The more stringent limitations are known as water quality-based limits.

Water quality-based effluent limitations will consist of narrative requirements and, where appropriate, numerical limits for the protection of the most sensitive beneficial uses of the receiving water. Establishing numeric limits takes into account the appropriate water quality objectives, background concentrations in the receiving water, and allowable dilution credit.

In many cases, numerical water quality objectives are not available for various types of beneficial uses or for various constituents of concern. In these cases, best professional judgment will be used in deriving numerical effluent limitations that will ensure attainment and maintenance of narrative water quality objectives.

4.5.2 SITE-SPECIFIC OBJECTIVES

In some cases, the Water Board may elect to develop and adopt site-specific water quality objectives. These objectives will be based on reflect site-specific conditions and comply with the Antidegradation Policy. This situation may arise when:

- It is determined that promulgated water quality standards or objectives are not protective of beneficial uses; or
- Site-specific conditions warrant less stringent effluent limits than those based on promulgated water quality standards or objectives, without compromising the beneficial uses of the receiving water.

In the above cases, the Water Board may consider developing and adopting site-specific water quality objectives for the constituent(s) of concern. These site-specific objectives will be developed to provide the same level of environmental protection as intended by national criteria, but will more accurately reflect local conditions. Such objectives are subject to approval by the State Board, Office of Administrative Law, and U.S. EPA.

There may be cases where the promulgated water quality standard or adopted objectives are practically not attainable in the receiving water due to existing high concentrations. In such circumstances, discharges shall not cause impairment of beneficial uses.

4.5.3 BEST PROFESSIONAL JUDGMENT

In developing and setting water quality-based effluent limitations for toxic pollutants, best professional judgment will involve consideration of many factors. Factors that may be considered include:

- Applicable and relevant federal laws, regulation, and guidance (specifically 40 CFR122 and 131, promulgated National Toxics Rules, U.S. EPA Water Quality Criteria, and technical guidance on water-quality based toxics control);
- State laws, regulations, policies, guidance, and Water Quality Control Plans;
- This Regional Water Quality Control Plan;
- Achievability by available technology or control strategies;
- Effectiveness of pollution prevention and source control measures; and
- Economic and social costs and benefits.

While the conditions surrounding a waste discharge may vary from case to case, all attempts will be made to ensure consistency among permits when exercising best professional judgment.

The effluent limitations described below have been established to help achieve the water quality objectives identified in Chapter 3.

Numerical effluent limitations identified in this section may not contain a complete list of pollutants that have a reasonable potential to cause an adverse impact on water quality. Inclusion of such pollutants of concern into the NPDES permit will be evaluated on a case-by-case basis.

The Water Board will consider establishing more stringent limitations as necessary to meet water quality objectives and protect beneficial uses in particularly sensitive areas. Similarly, the Water Board will consider establishing less stringent limitations, consistent with state and federal laws, for any discharge where it can be conclusively demonstrated through a comprehensive program approved by the Water Board that such limitations will not result in unacceptable adverse impacts on the beneficial uses of the receiving water. Such a comprehensive program must evaluate the impact of other, nearby discharges as well as the discharge itself.

The numerical limits identified in this section have been and will be applied on a gross rather than a net basis except for certain industrial waste discharges, which will be evaluated on a case-by-case basis.

4.5.4 DISCHARGES TO OCEAN WATERS

Within the context of this Basin Plan, ocean waters of the region are all territorial marine waters of the state west of the coastline, except enclosed bays.

All discharges to ocean waters must comply with the applicable quality requirements for waste discharges specified in the State Board's Ocean Plan and Thermal Plan.

4.5.5 DISCHARGES TO INLAND SURFACE WATERS, ENCLOSED BAYS, AND ESTUARIES

Within the context of this plan, enclosed bays are the indentations along the coast that enclose an area of marine water (such as Tomales Bay and Drake's Estero) including San Francisco Bay; estuaries extend from a bay to points upstream where there is no significant mixing or fresh water or sea water (this includes significant portions of the main San Francisco Bay and the portions of streams draining to the Bay where salt and freshwater mix); and inland surface waters are all other waterbodies within the region (freshwater rivers, streams, lakes, and reservoirs). As described in Chapter 3, effluent limits for discharge into any surface water body within the region is based on salinity. These are defined in the State Enclosed Bays and Estuaries Policy, 1974.

4.5.5.1 LIMITATIONS FOR CONVENTIONAL POLLUTANTS

Effluent limitations for conventional pollutants are contained in Table 4-2 for discharges to inland surface waters and enclosed bays and estuaries within the region.

4.5.5.2 LIMITATIONS FOR SELECTED TOXIC POLLUTANTS

Water quality-based effluent limitations for shallow water and deepwater dischargers shall be calculated according to the methodology in the “Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bay, and Estuaries of California (SIP).” and any amendments thereto.

The Water Board may adopt additional numerical standards for conservative constituents documented in discharges and/or documented to be of concern in receiving waters.

4.5.5.3 WHOLE EFFLUENT TOXICITY LIMITS AND CONTROL PROGRAM

The narrative water quality objective for toxicity (see Chapter 3) protects beneficial uses against mixtures of pollutants typically found in aquatic systems. This approach is used because numerical objectives for individual pollutants do not take mixtures into account and because numerical objectives exist for only a small fraction of potential pollutants of concern.

Effluent limits for acute toxicity are described below and were derived through the Effluent Toxicity Characterization Program (ETCP). A detailed description of the ETCP is presented later in this section. These limits define in specific terms how the Water Board assesses whether waters are "maintained free of toxic substances in concentrations that are lethal to or that produce other detrimental responses in aquatic organisms" (the narrative objective in Chapter 3) and maintains waters free of "toxic substances in toxic amounts" (Clean Water Act).

4.5.5.3.1 ACUTE TOXICITY

The acute toxicity effluent limitation states that the survival of organisms in effluent shall be a median value of not less than 90 percent survival, and a 90 percentile value of not less than 70 percent survival using tests as specified in Table 4-4 and Table 4-5.

Compliance with the acute toxicity limitation is evaluated by measuring survival of test fishes exposed to effluent for 96 hours. Each fish species represents a single sample. Dischargers are required to conduct flow-through effluent toxicity tests, except for those that discharge intermittently and discharge less than 1.0 million gallons per day (average dry weather flow). Such small, intermittent dischargers are required to perform static renewal bioassays.

All dischargers perform toxicity tests using fish species, according to protocols approved by the U.S. EPA or State Board or published by the American Society for Testing and Materials (ASTM) or American Public Health Association. Two fish species shall be tested concurrently. These shall be the most sensitive two species determined from concurrent screening(s) of three species: three-spine stickleback, rainbow trout, and fathead minnow. Tests completed within ten days of the initial test are considered concurrent. This three-species-screening requirement can be met using either flow-through or static renewal bioassays.

The Water Board may consider allowing compliance monitoring with only one (the most sensitive, if known) fish species, if the following condition is met: The discharger can document that the acute toxicity limitation, specified above, has not been exceeded during the previous three years, or that acute toxicity has been observed in only one of two fish species.

The Water Board may modify the flow-through bioassay requirements and the specific test species requirements on a case-by-case basis for discharges of once-through cooling water or excessively saline wastes, which make the implementation of these test requirements impractical. Such changes are not intended as a reduction in the acute toxicity limitation, but rather to account for the technical difficulties of performing the tests.

In addition, for deep water discharges subject to marine effluent limitations, dischargers are not to be considered out of compliance with the acute toxicity effluent limitation under the following circumstances: the discharger documents that the only cause of acute toxicity is ammonia which rapidly decays in the receiving water, and demonstrates that ammonia in the discharge does not impact water quality or beneficial uses.

4.5.5.3.2 CHRONIC TOXICITY

Chronic toxicity effluent limits are derived for individual dischargers based upon Best Professional Judgement. Some of the factors that may be considered in the development of these limits include: allowing credit for dilution comparable to those allowed for numeric chemical-specific objectives, effluent variability, and intent to protect against consistent chronic toxicity and severe episodic toxic events.

Chronic toxicity limitations are contained in the permits of all dischargers that have completed or are currently participating in the Effluent Toxicity Characterization Program (ETCP). This includes all municipal facilities with pre-treatment programs, all major industrial facilities, and selected treated groundwater dischargers.

Monitoring requirements for chronic toxicity, such as test species, effluent sampling procedures, dilution series, monitoring frequency, dilution waters and reference toxicant testing requirements, are specified in NPDES permits on a case-by-case basis. Monitoring requirements will be based on Effluent Toxicity Characterization Program data. Test species and protocols will be selected from those listed in Table 4-5.

Dischargers with chronic toxicity limits in their permits monitoring quarterly or less frequently are required to accelerate the frequency to monthly (or as otherwise specified by the Executive Officer) when conditions such as those listed in Table 4-6 occur.

4.5.5.3.3 TOXICITY IDENTIFICATION/REDUCTION EVALUATION (TIE/TRE)

Permits shall require that if consistent toxicity is exhibited, then a chronic toxicity identification evaluation (TIE) and toxicity reduction evaluation (TRE) shall be conducted. Specific language in permits requires the development of workplans for implementing TIEs. TIEs will be initiated within 30 days of detection of persistent toxicity. The purpose of a TIE is to identify the chemical or combination of chemicals causing the observed toxicity. Every reasonable effort using currently available TIE methodologies shall be employed by the discharger. The Water Board recognizes that identification of causes of chronic toxicity may not be successful in all cases.

The purposes of a TRE are to identify the source(s) of the toxic constituents and evaluate alternative strategies for reducing or eliminating their discharge. The TRE shall include all reasonable steps to reduce toxicity to the required level. In addition, the Water Board will review chronic toxicity test results to assess acute toxicity and consider the need for an acute TIE.

Following completion of the TRE, if consistent toxicity is still exhibited in a discharge, then the discharger shall pursue all feasible waste minimization measures at a level that is acceptable to the Water Board. The discharger must document that the acceptable level of participation is maintained by submitting reports on a specified schedule to the Water Board.

A Toxicity Reduction Evaluation may again be required in situations where chronic toxicity still exists and new techniques for identifying and reducing toxicity become available. Alternatively, the cause of effluent toxicity may change, so that existing techniques will enable identification and reduction of toxicity.

Consideration of any enforcement action by the Water Board for violation of the effluent limitation will be based in part on the discharger's actions in identifying and reducing sources of persistent toxicity.

4.5.5.3.4 EFFLUENT TOXICITY CHARACTERIZATION PROGRAM

The Effluent Toxicity Characterization Program was initiated in 1986 with the goal of developing and implementing toxicity limits for each discharger based on actual characteristics of both receiving waters and waste streams. The Water Board initiated the program as a means of implementing the narrative objective prohibiting toxic effects in receiving water.

The first two phases of the program focused on developing methods for monitoring effluent toxicity (known as effluent characterization) and deriving the appropriate series of tests to ensure that each effluent and its immediate receiving waters are not toxic to aquatic organisms.

Information from these phases is used to determine whether the narrative objectives are being met in each segment of the Bay and will support the development of site-specific water quality objectives and wasteload allocations.

As the program progresses, the Water Board may: (a) Modify existing effluent limits; (b) Specify different test organisms and methods for determining compliance with toxicity effluent limits; and/or (3) Require a toxicity reduction evaluation (TRE) to determine the cost-effectiveness of controlling toxicity or reducing concentrations of specific pollutants.

This program is being implemented within the existing framework of the NPDES permitting program for municipal and industrial facilities.

The purposes of effluent characterization are to:

- Define effluent variability so that the most appropriate compliance monitoring program can be put in place for each discharge and so that adequate information can be developed to determine if treatment processes or source control modifications are necessary to comply with effluent limits;
- Define the sensitivity of different test species to different effluents so that appropriate acute toxicity effluent limits can be defined and to identify the most sensitive of a group of test organisms used for compliance monitoring; and
- Define the chronic toxicity of the effluent to different test species such that the most sensitive organism of a standard set can be defined and either used for compliance monitoring or used for development of application factors to be applied to the acute toxicity effluent limit.

Two rounds of effluent characterization have been completed by dischargers selected on the basis of the nature, volume, and location of discharge. The first round started characterization in 1988; the second round in 1991. The Water Board adopted guidance documents for each round of characterization, with modifications made to the second round from knowledge gained during the first. Status reports were issued in July, 1989, March, 1990, and July, 1991. A summary report is scheduled upon completion of the second round in 1995. The need for a third round of characterization will be evaluated at that time.

Thus far, no one test species has consistently been the most sensitive to all discharges. This strongly supports the current approach of requiring screening using several test species. Also, acute toxicity has been observed at several sites using the expanded range of test species.

Although these sites can meet existing limits with test species currently used to determine compliance (fathead minnow, trout, and stickleback), they cannot meet the limits based on more sensitive species now available.

Detailed technical guidelines for conducting toxicity tests and analyzing resulting data were compiled in "Modified Guidelines: Effluent Toxicity Characterization Program," San Francisco Bay Regional Water Quality Control Board, 1991, Resolution No. 91-083, after experience gained during the first round. This document is incorporated by reference into this plan.

4.6 CALCULATION OF WATER QUALITY-BASED EFFLUENT LIMITATIONS

4.6.1 DILUTION RATIOS

The allocation of dilution ratio depends on whether a discharge is classified as a deep water or a shallow water discharge. In order to be classified as a deep water discharge, waste must be discharged through an outfall with a diffuser and must receive a minimum initial dilution of 10:1, with generally much greater dilution. All other dischargers are classified as shallow water discharges.

4.6.1.1 DEEP WATER DISCHARGES

While it is recognized that the actual initial dilution of many deep water discharges is greater than ten, the Water Board has taken a conservative approach to calculating effluent limitations for the following reasons. First, there is concern over the effects of the cumulative mass loadings of toxic pollutants from the numerous discharges into San Francisco Bay. Limiting the allocation of dilution credits is one means of limiting mass loadings. Second, recent Water Board studies have detected toxicity in ambient waters throughout the Bay system based on laboratory toxicity tests. This calls for a cautious approach in allowing the discharge of toxic substances. Third, studies indicate that bioaccumulation of pollutants in San Francisco Bay biota is of concern to wildlife and human health. Fourth, it is difficult to either measure or predict actual dilution in the San Francisco Bay estuarine environment. In the Estuary, the direction of waste transport varies over the course of the tidal cycle, so it is difficult to determine the fraction of new water versus recirculated water mixing with the discharge. U.S. EPA has developed several models of initial dilution for discharge plumes, but none take into account transport due to tidal currents.

The Water Board will consider inclusion of an effluent limitation greater than that calculated from water quality objectives when the increase in concentration is caused by implementation of significant water reclamation or water reuse programs at the facility; the increase in the effluent limitation does not result in an increase in the mass loading; and water quality objectives will not be exceeded outside the zone of initial dilution.

4.6.1.2 SHALLOW WATER DISCHARGES

Shallow water dischargers are subject to a discharge prohibition (Table 4-1, No. 1), which is intended to protect beneficial uses in areas that receive very limited, if any, dilution. When an exception to the prohibition is granted, it is generally not appropriate to allocate dilution credits for purposes of calculating effluent limitations, because these shallow aquatic environments are often biologically sensitive or critical habitats.

However, dilution credit may be granted on a discharger-by-discharger and pollutant-by-pollutant basis based on provisions of the "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bay, and Estuaries of California (SIP)." In making this determination, the Water Board will grant dilution credit on a pollutant-by-pollutant basis if the discharger demonstrates that an aggressive pretreatment and source control program is in place, including the following:

- Completion of a source identification study;
- Development and implementation of a source reduction plan; and
- Commitment of resources to fully implement the source control and reduction plan.

Any dilution credit granted must be consistent with the antibacksliding policy and may be granted only after very rigorous scrutiny of source control efforts and receiving water data. When dilution is granted, permits shall include provisions requiring continuing efforts at source control, targeting the substances to which the exceptions apply.

For certain low volume, short duration, or one-time discharges, the requirements of pretreatment and source control programs may not be practical. The Water Board may choose to waive such requirements for pollutants in low volume discharges determined to have no significant adverse impact on water quality.

In addition, the Water Board will consider the discharger's demonstration of compliance with water quality objectives, in accordance with the SIP. This demonstration shall address the following issues:

(a) A demonstration that the proposed effluent limitation will result in compliance with water quality objectives, including the narrative chronic toxicity objective, in the receiving water. Water quality objectives used in this demonstration are to be based on ambient salinity and hardness (for fresh waters) at the time of sampling. In addition, demonstration of compliance is to be based on the averaging period associated with each objective. Compliance with both acute and chronic chemical-specific water quality objectives shall be demonstrated. If freshwater objectives apply in the receiving waters (i.e., salinity is less than 5 parts per thousand), compliance with saltwater objectives shall also be demonstrated at the

nearest point in the receiving waters where salinity reaches 5 parts per thousand. Such a demonstration shall be based on ambient monitoring at a frequency equal to that typically required for effluent monitoring for a period of time defined in the study plan;

(b) An evaluation of worst-case conditions (in terms of tidal cycle, currents, or instream flows, as appropriate) through monitoring and/or modeling to demonstrate that water quality objectives will continue to be met, taking into account the averaging period associated with each objective; and

(c) An evaluation of the effects of mass loading resulting from allowing higher concentrations of pollutants in the discharge, in particular, the potential for accumulation of pollutants in aquatic life or sediments to levels that would impair aquatic life or threaten human health. This evaluation may include sampling of sediment and biota in the vicinity of the discharge to determine the accumulation of pollutants resulting from the current levels of discharge.

A study plan for conducting this work must be submitted to the Water Board for approval by the Executive Officer. Results of the study or studies addressing these three points shall be submitted to the Water Board. Effluent limitations based on either concentration or mass loading shall be developed for consideration by the Water Board based on study results and any other available information. The goal in setting effluent limitations shall be to ensure that water quality objectives are met in the receiving water and that mass loadings are limited to a level that provides protection of beneficial uses. In no case shall effluent limitations impair the basis upon which exception to the prohibition against discharge to shallow water was granted. Continued ambient monitoring shall also be required to ensure that water quality objectives are met.

4.6.2 FRESH WATER VS. MARINE WATER

Due to the unique estuarine environment that exists in the region, the salinity characteristics (i.e., freshwater vs. marine water) of the receiving water shall be considered in establishing water quality objectives. Freshwater effluent limitations shall apply to discharges to waters both outside the zone of tidal influence and with salinities equal to or less than 1 part per thousand at least 95 percent of the time in a normal water year. Marine effluent limitations shall apply to discharges to waters with salinities equal to or greater than 10 parts per thousand at least 95 percent of the time, except for discharges to the Pacific Ocean, which are covered by the California Ocean Plan. For discharges to waters with salinities in between these two categories, defined as estuarine, effluent limitations shall be the lower of the marine or freshwater effluent limitation, based on ambient hardness, for each substance. The use of alternative marine or freshwater criteria may be approved if scientifically defensible information and data demonstrate that on a site-specific basis the biology of the water body is dominated by freshwater aquatic life; or conversely, the biology of the water body is dominated by marine aquatic life.

4.6.3 BACKGROUND CONCENTRATIONS

When dilution credit is granted, the background concentration of the substance is taken into account in calculating effluent limitations so that the dilution provided by mixing with receiving waters is not overestimated. Ambient background concentration means the concentration of a substance, in the vicinity of a discharge, which is not influenced by the discharge. For the San

Francisco Estuary, it is difficult to identify a location that is not influenced by a discharge. Furthermore, background concentrations should vary within the Estuary due to changing geochemistry of the waters as they travel downstream. However, in order to simplify the calculation of effluent limitations, it is desirable to use one background concentration throughout the region.

The determination of ambient background concentration, for purposes of establishing NPDES effluent limitations for toxic pollutants, will be done in accordance with the provisions of the SIP, and amendments thereto.

4.7 IMPLEMENTATION OF EFFLUENT LIMITATIONS

In incorporating and implementing effluent limitations in NPDES permits, the following general guidance shall apply:

4.7.1. PERFORMANCE-BASED LIMITS

Where water quality objectives in the receiving water are being met, and an existing effluent limitation for a substance in a discharge is significantly lower than appropriate water quality-based limits, performance-based effluent limitations for that substance may be specified or the effluent limit revised. Any changes are subject to compliance with the state Antidegradation Policy. The performance-based effluent limitation may be either concentration- or mass-based, as appropriate.

4.7.2 SITE-SPECIFIC OBJECTIVE INCORPORATION

Once the Water Board has adopted a site-specific objective for any substance, effluent limitations shall be calculated from that objective in accordance with the methods described above.

4.7.3 AVERAGING PERIODS

For some substances there may be more than one effluent limitation with different averaging periods (e.g., daily average and 30-day average). In both cases, the effluent limitations shall apply to the mean concentration of all samples analyzed during the averaging period. If only one sample is taken during the averaging period, the effluent limitation applies to the concentration of that sample.

4.7.4 METHOD DETECTION LIMITS, PRACTICAL QUANTITATION LEVELS (PQL), AND LIMITS OF QUANTIFICATION (LOQ)

Method Detection Limits are defined in Title 40, Code of Federal Regulations, Part 136, Appendix B (revised June 30, 1986).

Practical Quantitation Level is the lowest concentration of a substance within plus or minus 20 percent of the true concentration by 75 percent of the analytical laboratories testing in a performance evaluation study. If performance data are not available, the PQL is the MDL x 5 for carcinogens and the MDL x 10 for noncarcinogens.

Limits of Quantification are ten standard deviations greater than the average measured blank values used in developing the MDL.

These terms and concepts are useful when pollutant concentrations in waters are relatively low. However, these will be taken into account in determining compliance with, rather than in the calculation of, effluent limitations.

4.7.5 SELECTION OF PARAMETERS

Effluent limits are not necessary for substances that do not pose any risk to beneficial uses or are shown not to be present in discharge. However, a discharger must demonstrate to the satisfaction of the Water Board that particular substances do not cause, or have the reasonable potential to cause or contribute to an excursion above numerical and narrative objectives. Dischargers must also demonstrate that pollutants of concern are (a) not in the waste stream, and (b) no change has occurred that may cause release of pollutants. This certification shall be supported, at a minimum, by monitoring results for such pollutants and process and treatment descriptions that demonstrate these substances are not expected to be present in the waste stream. At a minimum, this monitoring and certification is required prior to issuance and reissuance of WDRs.

The Water Board may choose to not require periodic monitoring and certification for pollutants in low volume discharges determined to have no significant adverse impact on water quality.

4.7.6 COMPLIANCE SCHEDULES

As new objectives or standards are adopted, permits will be revised accordingly. Revised permits will distinguish between effluent limitations that are met by current performance, and effluent limitations not currently attained. Immediate compliance will be required for effluent limitations that are met by current performance.

The Water Board may consider dischargers' proposals for longer compliance schedules for newly adopted objectives or standards as NPDES permit conditions for particular substances, where revised effluent limitations are not currently being met and where justified. The primary goal in setting compliance schedules is to promote the completion of source control and waste minimization measures, including water reclamation.

Justification for compliance schedules will include, at a minimum, all of the following:

(a) Submission of results of a diligent effort to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream;

(b) Documentation of source control efforts currently underway or completed, including compliance with the Pollution Prevention program described in the Basin Plan;

(c) A proposed schedule for additional source control measures or waste treatment; and

(d) A demonstration that the proposed schedule is as short as possible.

Implementation of source control measures to reduce pollutant loadings to the maximum extent practicable shall be completed as soon as possible, but in no event later than four years after new objectives or standards take effect. Implementation of any additional measures that may be required to comply with effluent limitations shall be completed as soon as possible, but in no event later than ten years after new objectives or standards take effect. The issuance of the permit containing a compliance schedule should not result in a violation of any applicable requirement of the federal Clean Water Act or the California Water Code, including any applicable Clean Water Act statutory deadlines.

4.8 STORMWATER DISCHARGES

As discussed in a later section titled "Urban Runoff Management," the Water Board has initiated a program that regulates certain municipal, industrial, and construction stormwater discharges through NPDES permits. Since both the sources of pollutants in stormwater discharges and the points of discharge are diffuse, and the methods of reducing pollutants in stormwater discharges are in the development stage, water quality-based numerical effluent limitations are not feasible at this time. Instead, stormwater permits will include requirements to prevent or reduce discharges of pollutants that cause or contribute to violations of water quality objectives. Compliance with these requirements is expected to be achieved through implementation of control measures or best management practices identified in dischargers' stormwater management plans or stormwater pollution prevention plans. Instead, stormwater permits will include requirements to prevent or reduce discharges of pollutants that cause or contribute to violations of water quality objectives for receiving waters. Compliance with these requirements is expected to be achieved through implementation of control measures or best management practices identified in dischargers' stormwater management plans or stormwater pollution prevention plans.

The Water Board is taking a phased approach towards attainment of water quality objectives in waters that receive stormwater discharges from urban areas and certain industrial and construction activities. The Water Board will first require entities subject to NPDES permits for stormwater discharges to complete implementation of technically and economically feasible control measures to reduce pollutants in stormwater to the maximum extent practicable. For industrial facilities, such control measures include those representing the best available technology that is economically achievable.

NPDES permits for stormwater discharges will require completion of technically and economically feasible control measures as soon as possible. Specific schedules for implementing control measures may, at the discretion of the Water Board, be included in permits (to the extent that such schedules are authorized by state or federal laws) either by reference to a stormwater management plan or by permit conditions. In no event will these schedules extend beyond the term of the permit.

If this first phase does not result in attainment of water quality objectives, the Water Board will consider permit conditions which may require implementation of additional control measures. In such circumstances, the Water Board may consider dischargers' proposed schedules for identification and implementation of additional control measures designed to attain water

quality objectives. Such schedules shall be as short as practicable and will only be considered for inclusion in permits when a discharger has demonstrated the following:

(a) A diligent effort to quantify pollutant levels and the sources of the pollutant in stormwater discharges; and

(b) Documentation of completion of implementation of all technically and economically reasonable control measures.

4.9 WET WEATHER OVERFLOWS

During periods of heavy rainfall, large pulses of water enter sewerage systems. When these pulses exceed the collection, treatment, or disposal capacity of a sewerage system, overflows occur. This is especially problematic for sewer systems that combine both sanitary sewage and stormwater (Combined Sewer Systems or CSS), such as the City and County of San Francisco's system (discussed under the municipal discharger section). All other municipalities in the region operate two distinct sewer systems. Wet weather is also problematic for separate systems because more water infiltrates the pipes leading to treatment plants. This problem is commonly referred to as inflow/infiltration (I/I). In either case, pulses of water during wet weather may cause untreated or partially treated wastewater to be discharged directly to surface water bodies.

Wet weather overflows of wastewater affect three types of beneficial uses: water contact recreation, non-contact water recreation, and shellfish harvesting. The water quality characteristics that can adversely affect these beneficial uses are pathogens, oxygen-demanding pollutants, suspended and settleable solids, nutrients, toxics, and floatable matter.

4.9.1 FEDERAL COMBINED SEWER OVERFLOW CONTROL POLICY

On April 11, 1994, the U.S. EPA adopted the Combined Sewer Overflow (CSO) Control Policy (50FR 18688). This policy establishes a consistent national approach for controlling discharges from CSOs to the nation’s water. Using the NPDES permit program, the policy initiates a two-phased process with higher priority given to more environmentally sensitive areas. During the first phase, the permittee is required to implement the following 9 Minimum Controls. These constitute the technology-based requirements of the Clean Water Act as applied to combined sewer facilities (best conventional treatment (BCT) and best available treatment (BAT)). These minimum controls can reduce CSOs and their effects on receiving water quality:

(1) Conduct proper operation and regular maintenance programs for the CSS and the CSO outfalls;

(2) Maximize use of the collection system for storage;

(3) Review and modify pretreatment programs to ensure that CSO impacts are minimized;

(4) Maximize flow to the POTW for treatment;

(5) Prohibit CSOs during dry weather;

(6) Control solids and floatable materials in CSOs;

(7) Develop and implement pollution prevention programs that focus on contaminant reduction activities;

(8) Notify the public; and

(9) Monitor to effectively characterize CSO impacts and the efficacy of CSO controls.

Compliance with the minimum controls shall be as soon as practicable, but no later than January 1, 1997. The permittee is also required to initiate development of a long-term control plan to select CSO controls, based on consideration of the permittee's financial capability.

The second phase of the process involves implementation of the long-term control plan developed in the first phase. Such implementation must provide for the attainment of water quality objectives and may result in additional site-specific technology-based controls, as well as water quality-based performance standards that are established based on best professional judgement. While numeric water quality-based effluent limits are not readily established due to unpredictability of a storm event and the general lack of data, the CSO Control Policy requires immediate compliance with water quality standards expressed in the form of a narrative limitation.

The Water Board intends to implement the federal CSO Control Policy for the combined sewer overflows from the City and County of San Francisco. The City and County of San Francisco has substantially completed implementation of the long-term CSO control plan (and is thereby exempted requirements to prepare a long-term control plan).

Additionally, the following is the Water Board's recommended approach to control the seasonal degradation of water quality that results from all wet weather overflows of wastewater, including POTWs with either combined and separate sewer systems, and industrial wastewater facilities. The overflow from San Francisco's combined sewer system is addressed by the CSO Control Policy described above.

4.9.2 CONCEPTUAL APPROACH

The recommended approach to controlling wet weather overflows of wastewater that contains particular characteristics of concern to beneficial uses is a combination of designated alternative levels of maintenance (i.e., combination of treatment levels and beneficial use protection categories) and guidance for the design of overflow discharge structures. The Water Board is not endorsing any specific control measures, but is presenting a conceptual framework that allows for the evaluation of costs and benefits. This framework can be used as guidance in adopting specific control measures. As with all of its programs, the Water Board will implement this conceptual approach consistent with the national goal of "...water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water."

Maintenance and associated treatment and overflow requirements are detailed in Table 4-8. The following requirements should be met for all overflows:

(a) Outfalls achieve an initial dilution of 10:1;

(b) Overflows receive treatment to remove large visible floatable material and to protect the outfall system; and

(c) Overflow locations be removed from dead-end sloughs and channels, and from close proximity to beaches and marinas.

Exceptions to (a) and (c) will be considered where an inordinate burden would be placed on the discharger relative to beneficial uses protected, and when an equivalent level of environmental protection can be achieved by alternative means, such as an alternative discharge site, a higher level of treatment, and/or improved treatment reliability.

The conceptual approach described above will be used by the Water Board in evaluating wet weather discharge conditions where polluted stormwater or process wastewater bypasses any treatment unit or units that are used in the normal treatment of the waste stream. Evaluation of such discharges must include identification of:

- Actual capacities of the collection system, each treatment unit, and the disposal system;
- Flow return period probabilities for the specific facility location;
- Cost of providing complete storage or treatment capacity and disposal capacity for flow return periods of 1, 5, and 20 years;
- Quality of the polluted stormwater and process wastewater for flow return periods of 1, 5, and 20, years; and
- Beneficial uses that may be affected by such discharges.

4.9.3 SURFACE IMPOUNDMENT OVERFLOW PROTECTION

In providing protection of waste management units against wet weather overflows, Chapter 15 requires that surface impoundments must have sufficient freeboard to accommodate seasonal precipitation and precipitation conditions specified for each class of waste management unit. Those specified precipitation conditions are probable maximum precipitation for Class I units; and the 1000-year, 24-hour precipitation for Class II units.

To guarantee the protection of water quality, the Water Board will interpret seasonal precipitation to be the 100-year return period wet season for Class I units and the 10-year return period wet season for Class II units. The sources to be used for determining the applicable precipitation for a given return period and location are California Department of Water Resources Bulletin No. 195 (or any update by the Department), local water agency publications, or other sources approved by the Executive Officer.

4.10 DISCHARGE OF TREATED GROUNDWATER

Cleanup of groundwater pollution sites often includes groundwater extraction, and thus creates the need for proper disposal of treated groundwater. The majority of the groundwater pollution cases in the Region involve surface spills, pipeline breaks, or leakages from tanks, vaults, sumps, surface impoundments, or landfills. Toxic pollutants commonly found in groundwater range from solvents (including volatile organic compounds [VOCs] and semi-volatile organic compounds [SVOCs]), petroleum hydrocarbons, heavy metals, or a combination of these pollutants. In many cases, the treated groundwater is discharged to surface waters via storm drains. These direct discharges would normally require an exception to the prohibitions against discharge into shallow or non-tidal waters.

To address this issue, the Water Board adopted Resolution No. 88-160 (see Chapter 5 Plans and Policies). The Resolution urges dischargers of groundwater extracted from cleanup projects to recycle (reclaim) their effluent. When recycling is not technically and/or economically feasible, discharges must be piped to a publicly-owned treament works (POTW). Furthermore, as required in State Water Board Resolution 89-21 (see Chapter 5 Plans and Policies), the Water Board recognizes the resource value of the extracted and treated groundwater and urges its utilization for the highest beneficial use for which applicable water quality standards can be achieved.

The Water Board will consider granting an exception to the discharge prohibitions only if (a) it has been demonstrated that neither recycling nor discharge to a POTW is technically or economically feasible, and (b) beneficial uses of the receiving water are not adversely affected. Such an exception is based on the Water Board's recognition that discharges allowed under the exception are an integral part of a program to cleanup polluted groundwater and thereby produce an environmental benefit.

Dischargers shall demonstrate that their groundwater extraction and treatment systems and associated operation, maintenance, and monitoring plans constitute acceptable programs for minimizing the discharge of toxic substances and for complying with effluent limitations deemed necessary for protection of the beneficial uses of receiving waters.

Applications for National Pollutant Discharge Elimination System (NPDES) permits to discharge treated groundwater directly to surface waters will be evaluated on a case-by-case basis. In some cases, the applicant may qualify for the requirements of a general NPDES permit for discharge of treated groundwater. The Water Board has adopted general NPDES permits for the following two types of groundwater cleanup projects:

(a) Groundwater polluted by fuel leaks and other related wastes at service stations and similar sites (NPDES General Waste Discharge Requirements for Discharge or Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Fuel Leaks and Other Related Wastes at Service Stations and Similar Sites, NPDES No. CAG912002); and

(b) Groundwater polluted by VOCs (NPDES General Waste Discharge Requirements for Discharge and Reuse of Extracted and Treated Groundwater Resulting from the Cleanup of Groundwater Polluted by Volatile Organic Compounds, NPDES No. CAG912003).

These general permits are intended to streamline a common regulatory process and are not available for groundwater discharges with constituents other than fuels and VOCs. The Water Board may renew, revise, or rescind the permits if deemed appropriate. The general permits specify effulent limitations for discharges to surface water bodies, establish self-monitoring requirements, and identify trigger levels for non-routine constituents that are used to determine if additional effluent sampling and treatability studies are needed. Updates to these two general permits are considered every five years.

4.11 MUNICIPAL FACILITIES (POTWs)

Table 4-9 is a list of municipal wastewater treatment facilities (excluding wet weather facilities) within the Region that discharge directly into surface waters. Figure 4-1 shows where these facilities are located in the region. Under normal operational conditions, these POTWs provide a minimum of secondary treatment. In addition, with more than thirty percent of the total flow receives advanced treatment.

Brief discussions of the issues specific to the City and County of San Francisco, South Bay dischargers, the Fairfield-Suisun Sewer District, the Livermore-Amador Valley, and the East Bay Municipal Utilities District are presented below.

4.11.1 CITY AND COUNTY OF SAN FRANCISCO

The City and County of San Francisco collects the wastewater in a combined sewer system. That is, the domestic sewage, industrial wastewater, and stormwater runoff are all collected in the same pipes (combined sewer). Such system is subject to overloading during severe storms. Most other communities in California have a separated sewer system: one set of pipes for domestic sewage and industrial wastes and another set for stormwater.

San Francisco is near completion of the primary components of its wastewater facilities master plan. This construction program began in 1974 with the publication of the Master Plan Environmental Impact Statement and Report. The integrated wastewater control system established by the master plan has been designed to provide control and treatment for both dry weather sewage and wet weather storm flows. All dry weather flows currently receive secondary level treatment. At program completion in 1996, all wet weather flows including stormwater runoff will be captured and will receive a specified level of treatment depending on the size of the storm. Pollutant removal from stormwater will be approximately 60 percent system-wide (measured as reduction in total suspended solids).

San Francisco is one of the first municipalities in the nation to complete a comprehensive control program for a combined sewer system. The expenditures for completing the wastewater master plan is about $1.45 billion.

The Southeast Water Pollution Control Plant is a major component of San Francisco's wastewater treatment system. The plant provides secondary level treatment for all dry weather domestic and industrial wastewater from the Bayside drainage area in San Francisco (approximately 75 percent of the total citywide flow). The Oceanside plant provides similar treatment on the Westside. The storage/transports around the periphery of the city store combined sewage for treatment after the storms subside. Additionally, northeast zone storm flows receive treatment at the Northpoint wet weather treatment plant.

4.11.2 SOUTH BAY MUNICIPAL DISCHARGERS (SAN JOSE/SANTA CLARA, PALO ALTO, AND SUNNYVALE)

The South Bay municipal dischargers consist of three sewage treatment facilities: the San Jose/Santa Clara Water Pollution Control Plant (WPCP), the Palo Alto Regional Water Quality Control Plant, and the Sunnyvale WPCP. These three plants serve all of the urban communities of Santa Clara County located in the Region. The South Bay municipal dischargers, as shown in Figure 4-1, presently discharge effluent receiving tertiary treatment (secondary plus nitrification, filtration, and disinfection) to shallow sloughs contiguous with the Bay, south of the Dumbarton Bridge.

The existing discharge locations for the Lower South SF Bay municipal wastewater dischargers are contrary to Basin Plan policy concerning discharge prohibitions (listed in Table 4-1). Exceptions to the first three of these prohibitions are discussed in Section 4.2 Discharge Prohibitions Applicable Throughout the Region.

State Water Board Order WQ 90-5 (1990) found that a net environmental benefit exception to these prohibitions could not be made for the three South Bay municipal discharges. However, the Order found that a finding of equivalent protection can be made if water quality based concentration limits for metals and revised mass loading limits for metals are placed in the dischargers' NPDES permits, if Sunnyvale and San Jose/Santa Clara continue avian botulism control programs, and if San Jose/Santa Clara implements mitigation for loss and degradation of endangered species habitat. Order WQ 90-5 also included provisions that would prevent increases in flows that would adversely impact endangered species habitats. In subsequent NPDES permit reissuances and Water Board resolutions from 1993 through 2003, the South Bay municipal dischargers met the three conditions required to support a finding of equivalent protection. The three conditions for granting the discharge prohibition must be confirmed at each NPDES permit reissuance.

4.11.3 FAIRFIELD-SUISUN SEWER DISTRICT (FSSD)

The FSSD's tertiary wastewater treatment plant has a dry weather treatment capacity of 17.5 million gallons per day (mgd), a wet weather capacity of 40 mgd, and 45 million gallons of off-line storage capacity. The District is currently treating 13 mgd (1993 dry weather data) from a service population of about 111,000. In order to comply with the Water Board's prohibition against dry weather discharges to the Suisun Marsh, FSSD operates a reclamation project in cooperation with the Solano Irrigation District. However, due to various contractual, legal and economic constraints, only about 40 percent of the treatment plant's annual effluent flow is reclaimed for agricultural irrigation. The remainder is discharged to Boynton Slough in Suisun Marsh.

The Water Board required FSSD to conduct an investigation to evaluate the discharge's impact on water quality conditions and beneficial uses of the receiving waters. This investigation was completed in 1987 and found that the discharge has some measurable local effects on water quality in Boynton Slough, but that beneficial uses are not impaired by the discharge. The study concluded that, overall and on a year-round basis, the discharge affords a net environmental benefit to Boynton Slough and the Suisun Marsh.

Given the findings of this study, the plant's high degree of operational redundancy and emergency storage capacity, and continued efforts by FSSD to maximize the use of reclaimed water, the Water Board has granted FSSD an exception to the Basin Plan prohibition. The Water Board allows, through the NPDES permit issued to FSSD, that portion of FSSD's tertiary effluent which cannot be reclaimed to be discharged to Boynton Slough on a year-round basis.

4.11.4 LIVERMORE-AMADOR VALLEY

The primary Water Board concern in the Livermore-Amador Valley (Valley) is the increase in salt loading that has occurred in the Valley's main groundwater basin. It is projected that with natural saline sources and and historical basin management practices, and with minimal water recycling, there will be a net salt loading increase from an average of 4,000 tons per year to 6,000 tons per year, resulting in a 10 milligram per liter (mg/L) per year increase in total dissolved solids (TDS) in groundwater. As a result, it has become increasingly important to develop and implement an integrated water/wastewater resource operational plan to protect the water quality and beneficial uses of the groundwater basin.

To achieve this goal, the Water Board supports local water management efforts to concurrently improve the salt balance in the main basin, to increase the local water supply, and to reduce the need for wastewater export through recycled water irrigation and groundwater recharge and other basin management practices.

4.11.4.1 SALT MANAGEMENT IN THE LIVERMORE-AMADOR VALLEY

The Livermore-Amador Valley groundwater basin is located in the middle of the Livermore-Amador Valley in eastern Alameda County and is primarily a closed groundwater basin within the Alameda Creek Watershed with multiple groundwater sub-basins of variable water quality. The Main Basin (that portion underlying the Cities of Livermore and Pleasanton) has the highest water quality, supplies most of the municipal wells in the area, and is used to store and distribute high quality imported water.

Alameda Creek and its tributaries recharge the Valley's groundwater basin and serve as channels to convey water released from the South Bay Aqueduct (SBA) to the main basin and the Niles Cone groundwater basin for artificial recharge. During dry weather, creek flow consists primarily of SBA release water.

The Alameda County Flood Control and Water Conservation District, locally known as the Zone 7 Water Agency (Zone 7), is the potable water wholesaler for most of the Valley and operates facilities to import and treat surface water from the State Water Project, groundwater wells, and distribution pipelines. Zone 7 serves as the overall water quality management planning agency

for the Livermore-Amador watershed and is responsible for managing the Valley's surface water and groundwater resources for the Valley's drinking water supply.

Dublin-San Ramon Services District (DSRSD) distributes potable water and treats wastewater in the western portion of the Valley, including parts of Contra Costa County. The City of Livermore distributes potable water to about one-fourth of Livermore and treats wastewater from the city and the adjacent national laboratories, Lawrence Livermore and Sandia National Laboratories.

The City of Livermore and DSRSD are member agencies of the Livermore-Amador Valley Water Management Agency (LAVWMA). Since 1980, wastewater has been exported from the Valley via LAVWMA-operated facilities that connect to the East Bay Dischargers Authority's (EBDA) interceptor in San Leandro. These waters are ultimately discharged through the EBDA outfall into south San Francisco Bay west of the Oakland Airport.

The current surface water quality objectives for the Alameda Creek Watershed above Niles (Table 3-7) were adopted in 1975. They were based on historic SBA water quality primarily to prevent degradation by wastewater discharges of imported SBA water being conveyed and used for groundwater recharge during dry weather periods. Wastewater discharges were terminated in 1980.

4.11.4.2 WATER RECYCLING AND VALLEY WATER - WASTEWATER MANAGEMENT

The water and wastewater agencies of the Valley have studied water recycling as an alternative to import of new water supplies and export of wastewater since the early 1970 (see Section 4.16 Water Recycling).

Zone 7, DSRSD and the City of Livermore's interests in water recycling have increased over the years due to droughts, continuing scarcity of new water supplies, institutional barriers to increasing wastewater export capacity from the Valley, and increasing public acceptance of water recycling throughout California. Technological advances and reduced costs of demineralization also now make groundwater recharge with demineralized recycled water a technically viable tool to help manage salt concentrations in the Valley.

Valley-wide water recycling is consistent with the Water Board's policy on recycled water, which states in part that disposal of wastewater to inland, estuarine, or coastal waters is not considered a permanent wastewater disposal solution where the potential exists for conservation and water recycling (see Section 4.16 Water Recycling). As directed by California Water Code (Water Code) Sections 13511 and 13512, the Water Board strongly supports the use of recycled water to supplement existing surface water and groundwater supplies and will work with agencies to facilitate development of water recycling facilities.

The Valley water and wastewater agencies jointly sponsored the "Livermore-Amador Valley Water Recycling Study" (May 1992) that includes a comprehensive investigation of water recycling options. The study documented the Valley's hydrogeology. It also identified and analyzed potential projects throughout the Valley, including irrigation with non-demineralized effluent, groundwater recharge with demineralized effluent, and export of brine. The report

included a discussion of how water recycling could be implemented in conformance with Water Board requirements and Zone 7 policies and still manage salt loading on a Valley-wide scale.

The report also detailed a strategy for developing a water recycling program incrementally, beginning with small demonstration projects to gain experience and public acceptance and building up to large-scale projects that could contribute substantially to water supply and wastewater disposal needs in future years.

The 1992 study documented that between 19,000 and 38,000 acre-feet per year of recycled water could be beneficially reused within the Valley via irrigation and groundwater recharge. Well-established technologies and procedures exist for accomplishing such uses and could be in full compliance with Water Board requirements and the Department of Health Services's (DHS) Title 22 CCR requirements. The long-operating Orange County Water District Water Factory 21 project has served as a model for many recycled water groundwater recharge facilities.

4.11.4.3 VALLEY-WIDE SALT MANAGEMENT PLAN

As recommended in the 1992 study, the agencies jointly applied for a Master Water Reuse Permit (Master Permit) to cover proposed water recycling activities throughout the Valley. The Water Board issued the Master Permit in 1993 (Order No. 93-159). The permit specifies the various technical reports that were required to be submitted for review and approval by the Executive Officer before projects could commence operation. In this manner, the Master Permit fully addresses the regulatory requirements that projects must comply with, while facilitating the approval process.

The permit allows small-scale irrigation projects to be developed by the cooperating agencies. Before large-scale recycling projects could be approved, a long-range Valley-wide Salt Management Plan (SMP) was required to be developed and implemented. The Master Permit required further characterization of basin hydrogeology, refinement of salt balance calculations, selection of TDS policy targets and examination of alternative ways to offset natural and recycled sources of salt loadings. The SMP would need to address the water quality objectives for the Alameda Creek Watershed, which state that wastewater disposal/reuse projects be part of an "overall water-wastewater resource operational program developed by the agencies affected and approved by the Water Board."

Zone 7, in partnership with a technical advisory group composed of local water retailers and a Zone 7 citizens committee, prepared the SMP as required by the Master Permit. The development of the SMP occurred through a lengthy public process (1994 to 1999) and resulted in Water Board approval in 2004. Over the years, the scope of the SMP broadened beyond that outlined in the Master Permit to one more resembling a comprehensive watershed and water resources management plan.

The purpose of the SMP is to identify and document the long-term strategy for managing salt and mineral water quality in the Valley's groundwater basin. The primary strategy is to increase conjunctive use combined with groundwater demineralization in the western portion of the service area to fully offset current and future sources of salt loading to the Valley's Main Basin. This strategy was designed to also maintain and improve delivered water quality and to facilitate

increased use of recycled water using Zone 7 facilities to offset the associated increase in salt loading. Other strategies were identified and may be implemented through Zone 7's monthly Water Operations Plans using an adaptive management process.

4.11.4.4 GENERAL WATER REUSE PERMIT

The City of Livermore and DSRSD were approved for the General Water Reuse Requirements for Municipal Wastewater and Water Agencies, (General Water Reuse Permit, see Section 4.16 Water Recycling), to administer their current and future recycled water projects involving landscape and/or agricultural irrigation recycling water projects. The General Water Reuse Permit, which delegates the administration of domestic wastewater reuse to water recycling agencies and water agencies, replaces the Master Permit for surface irrigation projects. The General Water Reuse Permit issued to the City of Livermore and DSRSD incorporates the requirements of the approved SMP. The Master Permit will remain on record, and, if needed, will be revised to address any future groundwater recharge projects that may be planned by the two agencies.

Groundwater recharge or conveyance via ephemeral streams is an essential component of the proposed Valley-wide, year-round water recycling and groundwater quality management program. However, projects subject to NPDES requirements are not authorized under the Master Permit. The Master Permit identifies the technical reports necessary to support a future NPDES permit application. The Water Board will consider issuing a separate NPDES permit to the permittees following receipt of a complete NPDES application.

4.11.4.5 WATER BOARD SUPPORT FOR WATER QUALITY MANAGEMENT STRATEGIES PROTECTING THE LIVERMORE-AMADOR VALLEY GROUNDWATER BASINS

The Water Board supports the concept that water recycling is an essential component for planning the Valley's future water supply. Water recycling is particularly important in areas like this, that are dependent on imported water.

As demonstrated by its 2004 approval, the Water Board supports the Salt Management Plan developed by the cooperating agencies in the Valley to facilitate increased use of recycled water to offset salt loading.

The Water Board supports the export of concentrate from the demineralization of groundwater via the LAVWMA and EBDA pipelines when implemented as part of the Salt Management Plan and is protective of beneficial uses of the San Francisco Bay.

The Water Board supports the concept of transport and groundwater recharge through the Valley's ephemeral streams. Recharge of the groundwater basin may be accomplished with imported water, as is done now, or combined with high-quality recycled water under a future groundwater-recharge NPDES permit or WDRs. The year-round, dependable recycled water resource may also be appropriate for streamflow augmentation to enhance beneficial uses of the Valley's ephemeral streams.

4.11.5 EAST BAY MUNICIPAL UTILITY DISTRICT (EBMUD) AND LOCAL AGENCIES

The sewer systems of the seven local agencies in the East Bay communities (Alameda, Albany, Berkeley, Emeryville, Oakland, Piedmont, and Stege Sanitary District) have had a serious problem with infiltration/inflow (I/I) during the wet weather season. During major storms, the community's sewers receive up to 20 times more flow than in dry weather. As a result, the communities' sewers overflowed to streets, local watercourses, and the Bay, creating a risk to public health and impairing water. The seven local agencies discharging sanitary sewage deliver sewage to EBMUD's facilities, and thus, EBMUD's interceptors and treatment facilities also subject to overflows during storm events.

The Water Board approved a regional approach -- a combination of community collection system improvements and EBMUD capacity improvements - for correcting wet weather overflows. Following the Basin Plan, EBMUD and the agencies established the following priorities to correct this problem:

- Substantially reduce or eliminate community sewer overflows with high public health risks;
- Substantially reduce or eliminate other community sewer overflows; and
- Eliminate or mitigate interceptor overflows.

In 1985, the East Bay communities completed a multi-year infiltration/inflow (I/I) study, which proposed a $300 million (1985 dollars) comprehensive sewer rehabilitation and relief line program known as the East Bay Infiltration/Inflow Correction Program (ICP), it required 20 years to implement. In a 1986 enforcement order, the Water Board accepted the proposed approach and directed the ICP Program to focus on high public health problems.

In 1986, all agencies submitted Compliance Plans in response to the cease-and-desist orders issued by the Water Board. These plans set forth the design and implementation requirements of each agency's I/I Correction Program.

EBMUD's and the collection system agencies' programs are designed to handle wastewater and I/I flows for up to a 5-year wet weather event. For rainfall events that have a return frequency greater than 5 years, overflows from the sanitary collection and treatment systems may occur. This approach is consistent with the Basin Plan wet weather overflow requirements (Maintenance Level C) adopted for the I/I Correction and the Wet Weather Facilities Program.

The communities have made good progress implementing their ICP eliminating about 60 percent of the high public public health risk overflows. They have also gained a better understanding of how to implement their ICP. This experience has revealed that some of the original planning assumptions underestimated sewer rehabilitation and replacement costs. As a result, the communities revised their programs and the Cities of Alameda, Albany, Berkeley, Oakland, and Piedmont requested extensions to their compliance schedules by 5 to 10 years. In 1993, the Water Board amended its enforcement order giving extensions to some communities' compliance schedules. The amended enforcement order also contains revised compliance reporting requirements.

As part of the regional approach, EBMUD's contribution is a $145 million (1985 dollars) Wet Weather Program, designed to increase treatment capacity to match the communities' flows. The Wet Weather Program includes an expansion of the main wastewater treatment plant, new storage basins, four new remote wet weather treatment plants, new and ungraded pumping stations, and 7.5 miles of new interceptors. This program will increase EBMUD's peak transport and treatment capacity, without which community sewers would continue to overflow. It will also provide treatment for wet weather discharges and meet or exceed Basin Plan requirements.

As of 1995, EBMUD has completed the expansion of the main wastewater treatment plant, all interceptor improvements, construction of the main plant storage basin, and construction of the two principal wet weather treatment facilities (Oakport and Point Isabel). The work remaining includes two pump station improvements, a storage basin, and two wet weather treatment plants. The Wet Weather Program is scheduled for completion in 1998.

4.12 INDUSTRIAL FACILITIES

This section discusses industrial waste discharges to surface waters under the NPDES program. Other industrial waste disposal practices are discussed in a later section entitled "Hazardous and Nonhazardous Waste Disposal" under Groundwater Protection and Management.

The Water Board has permitted over 320 industrial discharges in the region. They can be separated into two general types: process-related wastewaters and groundwater from cleanup activities. There are about 50 discharges of process wastewater; of these, 15 are classified as major discharges and the rest are mostly small discharges of non-contact cooling water and/or runoff. About 270 of the 320 discharges consist solely of treated groundwater from remediation activities at solvent and/or fuel contamination sites. These are minor in flow relative to the major discharges, and are discussed in more detail in an earlier section entitled "Discharge of Treated Groundwater." Additionally, there are over 1,500 industrial facilities discharging only stormwater runoff. The regulation of these discharges is discussed in a later section entitled: "Urban Runoff Management."

The 15 major discharges are the most significant individual sources of pollutant loadings from industrial discharges. They are identified and described in Table 4-11, and their locations are shown in Figure 4-2. These industries have all installed treatment facilities that can be considered to provide "best available treatment economically achievable" (BAT), and are in compliance with available BAT standards promulgated by the U.S. EPA for each industrial classification.

The Water Board's goal for regulation of industrial discharges is to continue to move beyond treatment technology-based standards to water quality-based standards. With this shift, the industries are challenged to improve existing or develop new treatment and control technologies to achieve higher levels of protection of receiving waters' beneficial uses.

The effect of the Water Board's regulation has been to drastically reduce the pollutant loadings from industrial sources. But with the focus shifting to water quality-based standards, concerns still do exist in certain areas. For example, a major concern is discharge of selenium from oil refineries. Water quality data from the Regional Monitoring Program and other studies will be necessary to identify areas of most concern and help target future pollutant reduction efforts.

4.13 PRETREATMENT AND POLLUTION PREVENTION

The Waste Discharge Permitting Program described in Section 4.12 Industrial Facilities focuses on limiting pollutant discharge to the Bay from industrial and municipal treatment systems. In most situations, however, the overall effectiveness of treatment depends on the type and amount of pollutants that enter these POTWs or industrial treatment system. Some pollutants may cause upset to or interference with the operation of the treatment plant, sludge contamination, or harm to treatment plant workers and the public if discharged into sewer systems. In general, it is often more economical to reduce overall pollutant loading into treatment systems than to install complex and expensive technology at the plant. Both pretreatment and pollution prevention programs are key components of pollutant source control.

The goal of the pretreatment program is to protect treatment plants, worker health and safety, and the environment from the impact of discharges of certain toxic wastes (e.g., explosive and corrosive materials) into collection systems.

The pollution prevention program expands beyond the pretreatment program to include industrial, commercial, and residential sources. The goals of pollution prevention are to:

1. Reduce or eliminate the discharge of all pollutants that have been found to impact or threaten beneficial uses;

2. Focus on pollutant source reduction "upstream" of treatment plants, with an emphasis on material recycling, efficient use of chemicals, waste reduction, material and/or product substitution, and process modification; and

3. Support reduction of pollutant discharges into collection systems through water conservation, recycling, and reuse.

The combined efforts of the pretreatment and pollution prevention programs have influenced thousands of facilities in the Region to significantly reduce the amount of pollutants discharged to the Bay. Between 1986 and 1999, the loading of heavy metals discharged from 27 POTWs with pretreatment programs, were reduced by 59 percent, even though the total volume discharged from these 27 POTWs increased slightly over this period.

4.13.1 CALIFORNIA'S PRETREATMENT PROGRAM

Each POTW regulates the types of waste discharged into collection systems leading to its treatment plant. The U.S. EPA, for certain types of waste and industrial categories, sets general standards for discharge to POTWs. Each POTW receiving a large amount of industrial waste and/or with a design flow greater than 5 million gallons per day (MGD) is required to develop and implement a pretreatment program, including enforce its own local discharge limits. The goal is to both protect treatment plants and ensure that the POTW is in compliance with its own discharge permit.

The Water Board oversees the implementation of the California pretreatment program under the California Water Code and federal Clean Water Act, although U.S. EPA retains its oversight role

and is still actively involved in inspections and enforcement activities. POTW pretreatment programs must include components as specified in federal regulations and program descriptions incorporated into the NPDES permit for each POTW.

Specific monitoring and reporting requirements for the 27 POTWs in the Region with approved pretreatment programs are contained in the NPDES Permits for the POTWs. Major budgeted program tasks for the Water Board's oversight activities include pretreatment compliance inspections and audits; annual and semiannual report reviews; program modifications, particularly local limits revisions; and enforcement activities.

4.13.2 POLLUTION PREVENTION

The Water Board supports reducing toxic discharges through pollution prevention and expansion of the pretreatment program. This general approach to minimizing waste discharge is a necessary element in the implementation of the State Water Board's Mass Emission Strategy and will become increasingly important as alternative uses of wastewater are developed.

The Water Board's pollution prevention program is a two-tiered program that consists of a general and a targeted program. The first tier is a general program, requiring dischargers to focus on long-term pollution prevention and overall reduction of toxics entering collection systems. The general program is structured to allow dischargers to develop and direct pollution prevention efforts in its own service area. It also allows dischargers to reduce toxic pollutant loading to their plants and remain in compliance with their discharge permit.

The second tier is a targeted program aimed to ameliorate existing water quality problems. The goal of targeted programs is to reduce the total amount of a specific pollutant (or pollutants) discharged to specific water bodies. Targeted programs are required when numeric or narrative water quality objectives are exceeded and beneficial uses are impaired or threatened.

Both the general and targeted pollution prevention programs will take multimedia concerns into account by coordinating with other relevant regulatory programs related to air and land disposal (e.g., sludge or biosolids).

All POTWs with an approved pretreatment program and all major industrial dischargers are required to develop and implement a general pollution prevention program within their jurisdiction. Dischargers are required to develop and implement a targeted program under the circumstances described in Section 4.13.2.4 Targeted Pollution Prevention for POTWs.

Presently, dischargers with required pollution prevention programs submit mid-year progress reports and/or a comprehensive annual report, which discusses progress and accomplishments along with program changes, and future program goals, developments and effectiveness measures. With forthcoming data needs for watershed permits, reporting formats will be standardized to improve comparability between programs.

4.13.2.1 GENERAL POLLUTION PREVENTION PRIORITIES

The following are the Water Board's priorities for the pollution prevention program in the coming years:

Encourage continued region-wide leadership across all pollution prevention programs through cross-program and cross media coordination, watershed based problem solving, and adaptability to new concerns through collaboration and partnerships.
Develop strategies to measure effectiveness of pollution prevention efforts over the long and short term.
Recognize and promote excellence through pollution prevention awards to programs that demonstrate resourcefulness, effectiveness, innovation, wide outreach (business, residential, and educational), and that take action to promote region-wide solutions.

4.13.2.2 POLLUTION PREVENTION PROGRAM HISTORY

In 1988, the Water Board began requiring "source control" programs from the three South Bay POTWs. In 1992, the Water Board required the remaining POTWs with pretreatment programs to develop and implement Waste Minimization Programs. Specifically, this included targeted programs for POTWs to reduce pollutants that exceeded water quality criteria, general programs for the remaining POTWs, and waste minimization audits for select industrial facilities discharging directly to surface waters. In 1993, the "Waste Minimization Program" was changed to "Pollution Prevention Program."

The Water Board formed the Bay Area Pollution Prevention Group (BAPPG) in 1990 and continues to support its significant successes in reducing pollution through product and chemical bans, targeted initiatives to reduce heavy metals, and regional technology transfer, outreach, and resource sharing.

In 2000, the state legislature enacted Water Code Section 13263.3 on pollution prevention programs. Also in 2000, the Policy for Implementation of Toxic Standards from Inland Surface Waters, Enclosed Bays and Estuaries of California (State Implementation Plan, or SIP) became effective, which addresses pollutant minimization programs.

In 2003, the Water Board adopted Resolution No. R2-2003-0096 promoting collaboration between the Bay Area Clean Water Agencies (BACWA) and the Water Board. It established 11 guiding principles for developing tools and guidance for POTW pollution prevention programs to balance program flexibility and program effectiveness. The products developed from this effort include a guidance document for pollution prevention program managers seeking to improve outreach and effectiveness of their programs, "Pollution Prevention Guidance and Tools for POTWs" (April 2005).

4.13.2.3 GENERAL POLLUTION PREVENTION PROGRAMS FOR POTWs

The general program is designed to allow individual POTWs to develop and direct long-term pollution prevention efforts according to local needs and is more flexible than targeted programs. General programs should contain the following elements:

Pretreatment program review and enhancement should include a general review of opportunities for incorporating waste reduction goals into inspections, enforcement, and permitting (such as increased inspection, improved process flow measurements, etc.) In addition, previously unregulated types of industrial and commercial facilities that discharge pollutants of concern to the POTW should be identified. Each general program should include provisions for two additional categories of discharge that are not covered under the federal regulations (such as waste oil disposal, household products, car and truck washing operations, medical and dental facilities, etc.).

Prioritize the need for and conduct audits of industrial users. The criteria for prioritization should include discharge of pollutants of concern, volume of flow, industrial user compliance, and opportunities for waste reduction.

Periodic analysis of the waste discharge to determine which pollutants are currently problems and/or which pollutants may pose problems in the future.

Identify sources of all pollutants of concern.

Identify and implement tasks to reduce the sources of pollutants of concern.

Design and conduct public education programs aimed at changing public behavior through educating the public about a pollutant, its sources, its impact to beneficial uses, how it is released into the environment, and where appropriate, options for safer product use, substitution, and product disposal (e.g., household hazardous waste management). Such efforts include advertising outreach and household hazardous waste programs. Current regional successes include product bans and advertising campaigns in English, Spanish, and Chinese. Successful outreach results in changing behaviors that lead to changes in purchasing behavior, or the way a toxic product is used, recycled, or disposed.

Coordination with other programs involving recycling, reuse, and source reduction of toxic chemicals. This includes programs involving other media, such as air, hazardous waste, and land disposal. This might include developing programs for joint inspections and sharing in enforcement activities.

An effectiveness monitoring program specifically designed to measure the success or effectiveness of specific pollution prevention activities, as well as overall successes achieved in reducing toxic loads to the receiving watershed where possible, as well as to air, or land via sludge disposal. Such evaluations of program effectiveness are conducted on a regular basis.

4.13.2.4 TARGETED POLLUTION PREVENTION PROGRAMS FOR POTWs

The purpose of targeted pollution prevention programs is to reduce the total amount of specific toxic pollutants being discharged to POTWs. Targeted programs are more intensive versions of the general programs and are focused only on one or a select number of pollutants.

Specifically, targeted programs are required for POTWs when any of the following conditions exist:

a. When numeric or narrative water quality objectives are exceeded and beneficial uses are impaired or threatened;
b. Are required as part of a TMDL or site specific objective (SSO) implementation plan;
c. Are required under the SIP when there are effluent limit compliance problems; or
d. As authorized under the Water Code Section 13263.3.

The Water Board may, at its discretion, require dischargers to implement pollution prevention plans consistent with Water Code Section 13263.3 and the SIP.

In those areas of a watershed or the Estuary identified as exceding water quality objectives or having impaired beneficial uses, dischargers that are significant contributors to the water quality problem will be identified and will be required to participate in a targeted waste minimization (pollution prevention) program. In addition to general program elements, a targeted pollution prevention program involves quantifying the sources to the POTW of the targeted pollutants in question. It may also be necessary to conduct further monitoring of the targeted pollutants in the receiving water, sediment, and biota by identified dischargers to POTW systems and/or POTWs at and near their discharge locations in order to more precisely determine associated effects.

A targeted program must also initiate reductions in pollutant loading through a control strategy designed to achieve the goal of maintaining concentrations of reportable priority pollutants in the effluent at or below the effluent limit, focusing on the most effective and economic control measures first. These reductions may be achievable through focused public outreach, implementation of Best Management Practices (BMPs), technical information transfer regarding effective management techniques, or installation of appropriate technologies.

The targeted program shall include all elements of the general program, expanding where appropriate to maximize the reduction of the targeted pollutants.

Targeted programs may also require other options such as performance-based effluent concentration limits and mass limitations for the pollutants of concern, in order to attain water quality objectives in the receiving water body.

4.13.2.5 DIRECT INDUSTRIAL DISCHARGER POLLUTION PREVENTION PROGRAM

Industrial entities discharging directly to receiving waters instead of public sewer systems are also subject to similar pollution prevention requirements. Overall source reduction and recycling of hazardous wastes, including audits, planning, and reporting to the Department of Toxic Substance Control (DTSC) is required under the Hazardous Waste Source Reduction and Management Review Act of 1989 (Title 23, CCR, Ch 31). Rather than require separate pollution prevention programs, major dischargers were asked to submit copies of the required pollution prevention reports (those sections specifically addressing liquid waste and reduction of pollutants discharged to water) to the Water Board. These dischargers submitted initial plans for pollution prevention, including detailed descriptions of tasks and schedules, in 1992.

In the event that existing pollution prevention reports do not adequately address reduction of toxic pollutants in effluent, the Water Board will require additional information.

In cases where water quality problems exist or where beneficial uses are impaired or threatened by direct industrial dischargers, focused pollution prevention programs similar to POTW targeted programs will also be required. In cases where Water Board staff determines that independent audits, as opposed to audits conducted by the involved companies, the issue will be brought before the Water Board. The effort should result in the reduction or elimination of specific pollutants of concern.

4.14 URBAN RUNOFF MANAGEMENT

During periods of rain, water flushes sediment and pollutants from urbanized parts of the Estuary (Figure 4-3) into storm drain systems. These drains discharge directly to surface waters within the region, except in San Francisco where stormwater is mixed with sewage and directed to the treatment plant.

Urban runoff contributes significant quantities of total suspended solids, heavy metals, petroleum hydrocarbons, and other pollutants to the waters of the region. The impacts of pollutants in urban runoff on aquatic systems are many and varied. For example, small soil particles washed into streams can smother spawning grounds and marsh habitat. Lead and petroleum hydrocarbons washed off from roadways and parking lots may cause toxic responses in aquatic life and exemplify another kind of threat. The US EPA found levels of cadmium, copper, lead, and zinc in urban runoff exceeded freshwater acute aquatic life criteria in 9 to 50 percent of samples taken across the country. The chronic criteria for these metals, beryllium, cyanide, mercury, and silver were exceeded in at least 10 percent of the samples. In the San Francisco Bay Region, the Association of Bay Area Governments (ABAG) has found consistently high levels of hydrocarbons in urban runoff.

The Water Board's urban runoff management program focuses on reducing pollutant transport through stormwater drain systems into surface waters. In general, measures that will effectively limit storm drain pollutant discharge will also limit direct runoff of pollutants into creeks, streams, and lakes.

The program is structured around the municipalities and local agencies responsible for maintaining storm drain systems, and three classes of activities that are responsible for significant amounts of pollutant influx to those public storm drain systems: highways under the jurisdiction of the California Department of Transportation (Caltrans), industrial activities, and construction on areas larger than 5 acres.

Within each of these program areas, the Water Board's urban runoff management approach emphasizes general, long-term planning to avoid any increases in pollutant loading, and more structured, intensive approaches when existing water quality problems require immediate action.

A large part of the Water Board's work in managing urban runoff involves supporting local planning and investigation. The program includes:

- Organizing local ad hoc task forces within each hydrologic sub-region (see maps in Chapter 2) to facilitate investigations and design of appropriate control strategies. These task forces include representatives from local government, point source dischargers, local industries, the Water Board, and U.S. EPA.
- Developing cooperative investigation and control strategies utilizing the expertise and resources of point source dischargers in each of the receiving water segments.
- Supporting research by the San Francisco Estuary Institute, ABAG, U.S. EPA, and others entities to better define the impacts of urban runoff discharges.

- Participating on the State Water Board Stormwater Quality Task Force and the development and implementation of a statewide urban stormwater best management practices manual.
- Working with other agencies such as the Bay Area Air Quality Management District and the Metropolitan Transportation Commission to ensure that transportation related strategies and plans will reduce the impact on receiving waters from transportation system runoff discharges.

4.14.1 MANAGEMENT OF POLLUTANT DISCHARGE FROM STORM DRAINS

The Water Board's strategy for managing pollutants and sediment in urban runoff entering and being discharged public storm drain systems is two-tiered. All cities and counties are encouraged to develop and implement voluntary programs aimed at pollution prevention throughout the region (Baseline Control Program). Selected cites and counties, by virtue of the amount of pollutants being discharged from their storm drain system, impact of those discharges on receiving waters, or population, are required to develop pollution prevention programs and take steps to reduce runoff into drain systems (Comprehensive Control Program).

The first major step in addressing pollutant loading to public storm drains was to compile basic information on existing systems. A Board survey of local agencies owning or responsible for storm drain systems and flood control agencies had limited and often dated information on the storm drain systems that they own or manage. In addition, flow and water quality data for storm drain system discharge were virtually nonexistent. The survey also found that current management of storm drain systems is primarily focused on flood control, with storm drainage inlets, lines, and catch basins scheduled for cleaning annually or on an as-needed basis for flood prevention purposes.

4.14.1.1 BASELINE CONTROL PROGRAM

All local agencies, including special districts, in the cities and counties in the region (see Table 4-11) that own or have maintenance responsibility for storm drain systems should develop and implement a baseline control program.

The goal of the baseline control programs is to prevent any increase in pollutants entering these systems. To a large extent, this goal can be achieved by including consideration of pollutant runoff into storm drain systems in the course of local planning efforts and encouraging "good practice" techniques.

Components of baseline control programs should include: review and update of operation and maintenance programs for storm drain systems; development and adoption of ordinances or other planning procedures (such as CEQA review) to avoid and control pollutant and sediment loading to runoff as part of the normal design and construction of new and significant redevelopment (both during construction and after construction is completed); and education measures to inform the public, commercial entities, and industries on the proper use and disposal of materials and waste and correct practices of urban runoff control. Baseline control programs should also include surveillance, monitoring, and enforcement activities to ensure and document implementation.

Similarly, flood control agencies should consider the impact of their projects on receiving waters. Flood management projects, facilities, or operations should be designed, operated, and maintained to reduce the amount of pollutants in stormwater discharges as well as achieving flood control objectives.

The Water Board will support and encourage the development and implementation of baseline control programs in cooperation with cities and counties. Board staff may provide technical guidance and support, facilitate ad-hoc working groups including people with expertise and experience in POTW pollution prevention programs and local hazardous waste management, and participate in development of model ordinances.

The programs should be coordinated with POTW and industrial pollution prevention programs and local hazardous materials management programs.

In addition, the Water Board will focus its surveillance, monitoring, and enforcement activities on and review Environmental Impact Reports on new development and significant redevelopment and focus its surveillance, monitoring, and enforcement activities to support implementation of effective baseline control programs. The effectiveness of a municipality's baseline control program will also be considered when issuing NPDES permits for construction activities pursuant to the Water Board's Construction Activity Control Program.

The Water Board requires the local agencies, special districts, and municipalities listed in Table 4-11 to submit annual reports (pursuant to Section 13225(c) of the California Water Code) describing their baseline control programs. These reports are due on September 1 of each year and should describe:

- Operation and maintenance activities associated with the storm drain system;
- Master planning procedures and documentation of activities associated with control;
- A list of all new development and significant redevelopment projects with documentation that urban runoff control measures have been required and are being implemented;
- Documentation of educational measures;
- Documentation of surveillance, monitoring, and enforcement activities; and
- A qualitative evaluation of program effectiveness, including, but not limited to, program accomplishments, funds expended, staff hours utilized, an overall evaluation, and plans for the upcoming year.

To the extent that voluntary implementation of baseline control programs is not realized, the Water Board will act, where necessary, to require individual local agencies to investigate specific runoff discharges, quantify pollutant loads, and identify and implement control strategies for pollutant runoff into storm drains. Where necessary, require individual local agencies to file a Report of Waste Discharge or NPDES permit application for the implementation of baseline control programs.

Cities and counties should review and revise their planning procedures and develop or revise comprehensive master plans to assure that increases in pollutant loading associated with newly developed and significantly redeveloped areas are, to the maximum extent practicable, limited.

Areas that are in the process of development, or redevelopment offer the greatest potential for utilizing the full range of structural and non-structural control measures to limit increases in pollutant loads. Comprehensive planning must be used to incorporate these measures in the process of developing. Cities and counties should fully utilize their authority under CEQA to assure implementation of control measures at all proposed development and significant redevelopment projects.

4.14.1.2 COMPREHENSIVE CONTROL PROGRAM

The goal of the Water Board's comprehensive control program is to remediate existing water quality problems and prevent new problems associated with urban runoff. To achieve this, the program focuses on reducing current levels of pollutant loading to storm drains to the maximum extent practicable. The Water Board's comprehensive program is designed to be consistent with federal regulations (40 CFR 122-124) and is implemented by issuing NPDES permits to owners and operators of large storm drain systems and systems discharging significant amounts of pollutants. The conditions of each NPDES stormwater permit require that entities responsible for the systems develop and implement comprehensive control programs.

The regulations authorize the issuance of system-wide or jurisdiction-wide permits and they effectively prohibit non-stormwater discharges to storm drains. They also require listed municipalities to implement control measures to reduce pollutants in urban stormwater runoff discharges to the maximum extent practicable. The Water Board will, where necessary, require stormwater discharge permits for discharges not cited in the regulations which are a significant contributor of pollutants to waters of the region.

The comprehensive urban runoff control program includes all elements of the baseline control program designed to prevent increases in pollutant loading. To reduce current pollutant loading to the maximum extent practicable, the program also includes:

- Characterization of urban runoff discharges to the extent necessary to support program development;
- Elimination of illicit connections and illegal dumping into storm drains;
- Development and implementation of measures to reduce pollutant runoff associated with the application of pesticides, herbicides, and fertilizer;
- Development and implementation of measures to operate and maintain public highways in a manner that reduces pollutants in runoff; and
- Effective pollution reduction measures may include educational activities such as painting signs on storm drain inlets and regulation of activities such as application of pesticides in public right-of-ways.

Each NPDES stormwater permit issued by the Water Board will require an annual report evaluating the effectiveness of its comprehensive urban runoff control program. At a minimum, quantitative monitoring, a detailed accounting of program accomplishments (including funds expended and staff hours utilized), an overall evaluation of the program, and plans and schedules for the upcoming year shall be used to assess effectiveness.

The Water Board's urban runoff control program is still relatively new. Table 4-11 lists the entities in each area that have implemented comprehensive control programs. In addition, there is a need to develop and implement similar programs in the urban and rapidly developing areas of Solano County and the cities of San Rafael, Novato, Petaluma, Napa, and Benicia, and the Ports of Oakland, Richmond, and San Francisco. Urban runoff discharges from these areas are considered significant sources of pollutants to waters of the region and may be causing or threatening to cause violation of water quality objectives. The Water Board intends to consider similar action for these at a later time. The City and County of San Francisco is not permitted under the storm water program because it has a combined (sanitary and storm) sewer system operating in accordance with existing NPDES permits.

The Water Board will conduct surveillance activities and provide overall direction to verify and oversee implementation of urban runoff control programs. Technical guidance for prevention activities, the identification, assignment, and implementation of control measures, and monitoring will be developed.

4.14.2 HIGHWAY RUNOFF CONTROL PROGRAM

An essential component of reducing pollutant loading to storm drain systems involves managing runoff from public roads. While many roads fall under the jurisdiction of entities responsible for storm drain systems, public highways are controlled by the California Department of Transportation (Caltrans). In order to ensure that all public highways are maintained to reduce pollutant runoff, the Water Board issued a stormwater NPDES permit to Caltrans in August, 1994. The permit requires implementation of a highway Stormwater Management Plan which addresses the design, construction, and maintenance of highway facilities relative to reducing pollutant runoff discharges to the maximum extent practicable.

The highway runoff management plan shall include litter control, management of pesticide/herbicide use, reducing direct discharges, reducing runoff velocity, grassed channels, curb elimination, catch basin maintenance, appropriate street cleaning, establishing and maintaining vegetation, infiltration practices, and detention/retention practices. In addition, the plan must include monitoring the effectiveness of control measures, runoff water quality, and pollutant loads. When possible, Caltrans is expected to coordinate with existing agencies and programs related to the reduction of pollutants in highway runoff.

4.14.3 INDUSTRIAL ACTIVITY CONTROL PROGRAM

Industrial stormwater sources are subject to best available technology (BAT) economically-based standards. Federal regulations require stormwater permits for any site where industrial activity takes place (or has in the past), and materials are exposed to stormwater. The definitions of industrial activities subject to these permits (provisions of Title 40 Code of Federal Regulation, Part 122.26, revised December 18, 1992) are incorporated by reference into this plan. This incorporation by reference is prospective including future changes as they take effect. The Water Board will require an NPDES permit for the discharge of stormwater from all industrial facilities where such activities occur. These permits apply to the discharge from any system used to collect and convey stormwater at industrial sites. These sites include, but are not limited to, industrial plant yards, access roads and rail lines, material and refuse handling areas, storage areas (including tank farms) and areas where significant amounts of materials remain from past

activity. Permits are issued both to privately and publicly (federal, state, and municipal) owned facilities.

The Water Board's permitting strategy for industrial facilities is based on a four-tier set of priorities for issuing permits. At a minimum, all permits will require compliance with all local agency requirements. General permits for industrial facilities will not be less stringent than individual permits.

4.14.3.1 TIER I: GENERAL PERMITTING

The majority of stormwater discharges associated with industrial activity in the region will be covered under a general permit issued by the State Water Board in November, 1991.

4.14.3.2 TIER II: SPECIFIC WATERSHED PERMITTING

In some watersheds, water quality has been impacted by stormwater discharges from facilities associated with industrial activity. Facilities within these watersheds will be targeted for individual stormwater permits or regulation under watershed-specific general permits. The Water Board issued a general permit for industrial activity in the portion of Santa Clara County that drains to South San Francisco Bay to support the county's comprehensive control program and will consider a similar general permit for Alameda County at a later time.

4.14.3.3 TIER III: INDUSTRY-SPECIFIC PERMITTING

Specific industrial categories will be targeted for individual or industry-specific general permits. For example, the Water Board issued a general permit for storm water discharges from boatyards in August 1992. The use of general permits is intended to alleviate the administrative burden of issuing storm water permit for individual industrial facilities. In some cases, such as large U.S. Department of Defense facilities, individual sites or classes of sites may be significant sources of pollutants, and individual permit(s) specific to these classes of sites are warranted.

The Water Board considers stormwater discharges from automotive operations, including gas stations, auto repair shops, auto body shops, dealerships, and mobile fleet-washing businesses to be significant sources of pollutants to waters in the region. Local agencies implementing comprehensive control programs are addressing these discharges through ordinances as part of their comprehensive control programs. The effectiveness of local measures will be assessed before the Water Board considers permitting these under a separate industrial permit.

4.14.3.4 TIER IV: FACILITY-SPECIFIC PERMITTING

A variety of factors will be used to target specific facilities for individual permits, such as amount and characteristics of runoff, size of facility, and contribution to existing water quality problems. Permitted individual facilities will be required to identify "hot areas" where runoff may contact pollutants; activities that may release pollutants to runoff; segregate stormwater discharges from the "hot areas;" and identify and implement control measures for "hot areas." In addition, permittees will be required to eliminate all non-stormwater discharges to storm drain systems unless authorized by an NPDES permit or determined not to be a source of pollutants requiring an NPDES permit.

4.14.4 CONSTRUCTION ACTIVITY CONTROL PROGRAM

The Water Board will require an NPDES permit for the discharge of stormwater from construction activities involving disturbance of five acres or greater total land area or are part of a larger common plan of development that disturbs greater than five acres of total land area. The majority of construction activity discharges in the region will be permitted under a general permit issued by the State Water Board in 1992. Permit conditions address pollutant and waste discharges occurring during construction activities and the discharge of pollutants in runoff after construction is completed. Permit conditions are consistent with the Water Board's erosion and sediment control policy (Resolution No. 80-5) and consistent with local agency ordinance and regulatory programs. The intent of the permit is not to supersede local programs, but rather to complement local requirements. This will require local agencies to effectively address construction activities through their early planning, CEQA processes, and implementation of development control measures as part of their baseline or comprehensive control programs.

4.15 AGRICULTURAL WASTEWATER MANAGEMENT

Agricultural wastewaters and the effect of agricultural operations must be considered in terms of land use practices and controls developed in the agricultural element of land use plans. The activities of primary importance to water quality in this basin are animal confinement and irrigation practices. Agricultural pesticide use and limits on fertilizer application are not specifically considered because of the limited applicability in this region.

4.15.1 ANIMAL CONFINEMENT OPERATIONS

Animal confinement operations such as kennels, horse stables, poultry ranches, and dairies, raise or shelter animals in high densities. Wastes from such facilities can contain significant amounts of pathogens, oxygen-depleting organic matter, nitrogen compounds, and other suspended and dissolved solids. In addition, erosion is also a common problem associated with these facilities. Runoff of storm or wash water can carry waste and sediment and degrade receiving surface waters. Groundwaters can also be degraded when water containing these wastes percolates into aquifers. The risk of water quality degradation increases during the rainy season when animal waste containment and treatment ponds are often overloaded.

Minimum design and management standards for the protection of water quality from confined animal operations are promulgated in Title 23, California Code of Regulations, Chapter 15, Article 6. These regulations prohibit the discharge of facility wash water, animal wastes, and stormwater runoff from animal confinement areas into waters of the state. They also specify minimum design and waste management standards including:

- Collection of all wastewaters;
- Retention of water within manured areas during a 25-year, 24 hour storm;
- Use of paving or impermeable soils in manure storage areas; and
- Application of manures and wastewaters on land at reasonable rates.

The Water Board has the authority to enforce these regulations through Waste Discharge Requirements.

Facilities such as the dairies located in Marin and Sonoma counties and horse boarding stables are typical of animal confinement operations within the region.

4.15.1.1 DAIRY WASTE MANAGEMENT

Much of the land within the Tomales Bay, Petaluma River, Napa, and Sonoma Valley watersheds is used for agricultural purposes. Within these watersheds, a significant number of livestock are housed and grazed.

Animal waste can cause water quality problems through runoff into surface and groundwaters of the state. Stockpiled manure, washwater, and stormwater runoff from corrals, pens, and other animal confinement areas are potential sources of water pollution due to their high bacteria levels (the coliform group used as indicators), ammonia, nitrate and suspended solids. Detergents, disinfectants, and other biocides commonly used may also contribute to the toxicity of animal wastes. These constituents can be extremely deleterious to fish and other forms of aquatic life. High bacterial levels have had an adverse impact on shellfish resources in the region (i.e., commercial shellfish harvesting in Tomales Bay).

Problems facing the dairy industry include manure containment during the rainy season, appropriate manure dispersal on pasture land, and implementation of range management practices aimed at water quality protection. The availability of ample farm and pastureland is therefore extremely important in managing animal waste.

Since the 1970s, the cooperative relationship between the Water Board and the dairy industry has been an important aspect of dairy waste control. That relationship has been instrumental in the construction of dairy waste handling, treatment, and disposal facilities in the late 1970s. However, proper waste control management is just as important as the physical facility. Management techniques include routing wash water and drainage to impervious holding and storage areas, constructing manure storage areas controlling both subsurface infiltration and runoff, stormwater overflow protection for retention basins, and applying manures and wastewater on land at reasonable rates for maximum plant uptake of nitrogen.

Poor practices that have led to water quality problems in the past include: inadequate maintenance and operation of facilities; overloading treatment and storage facilities; increase of herd size without commensurate additions to waste handling facilities; poor range management practices; and simple neglect of seasonal waste management responsibilities.

4.15.1.2 DAIRY WASTE REGULATION

Both the regulation and the support services for the dairy industry involve several federal, state, and local agencies. Each has its particular role and mission, but all share the goal of protecting the beneficial uses of state waters while assisting dairies in complying with regulations while conducting their day-to-day business. The following agencies play a direct role in dairy waste management and regulation:

REGULATORY

- California Regional Water Quality Control Board
- California Department of Fish and Game

SUPPORT SERVICES

- Agricultural Stabilization and Conservation Services
- U.S. Department of Agriculture — Soil Conservation Service
- University of California Cooperative Extension Farm Advisor
- County Farm Bureaus
- Resource Conservation Districts

To address dairy waste management concerns, dairy operators in Marin and Sonoma Counties have formed a Dairy Waste Committee. The Dairy Waste Committee supports dairy operators in their efforts to solve waste control problems and locate technical and financial assistance. The Committee serves as a vehicle through which the Water Boards and California Department of Fish and Game can disseminate information on water quality regulations and requirements. This committee does and will continue to play an important role in any successful waste control program.

Additionally, the Southern Sonoma and Marin County Resource Conservation Districts (RCDs) have a cooperative, voluntary program in which a farmer agrees to use the land within its capabilities, develop a conservation plan, and apply conservation practices to meet objectives and technical standards of the RCDs. In turn, the RCD agrees to furnish the farmer with information and technical assistance in order to carry out the conservation plan.

WATER BOARD PROGRAM

PERMITTING/WAIVER OF PERMITS

Generally, discharges are subject to Waste Discharge Requirements (WDRs) issued by the Water Board. However, the Water Board may waive WDRs where such a waiver is not against the public interest and still assures the protection of beneficial uses of state waters. For the present, the Water Board has been waiving WDRs for dairies where proper waste control facilities are in place and management practices are in conformance with the California Code of Regulations - Title 23, Article 3, Chapter 15 (Discharge of Waste to Land).

CONTINUING WASTE CONTROL PLANNING

In 1990, the State Water Board established a Dairy Waste Task Force to look at the dairy industry statewide and develop standards for dairy regulation. The main emphasis has been on developing better communication and guidance materials for the industry; developing a dairy survey form to help the Water Boards determine if a dairy qualifies for a waiver from WDRs; determining the number and location of dairies; develop more uniform WDRs; and preparing an outreach program aimed at the dairy industry, local government, and the public.

The Water Board directs the Executive Officer to continue the following staff activities:

- Work with the dairy industry through the local dairy waste committees, County Farm Bureaus, RCDs, and other local/state agencies in obtaining cooperative correction of dairy waste problems.
- Recommend adoption of WDRs in those cases where water quality objectives for waters within an agricultural watershed are consistently exceeded, or where corrective action is unsuccessful in eliminating either the short- or long-term water quality problems or threats. The Water Board may choose to take enforcement action through the issuance of a Clean-up and Abatement Order or assess monetary penalties in those cases where dairy practices have resulted in or threaten to cause a condition of pollution or nuisance in surface waters through the issuance of Administrative Civil Liability or referral to the California Attorney General's Office.
- Monitor the compliance of dairy waste management programs with regional goals and implement the recommendations of the State Dairy Waste Task Force.

4.15.2 IRRIGATION OPERATIONS

An increase in the concentration of soluble salts contained in percolating irrigation water is an unavoidable result of consumptive use of water. Salt management within soils and groundwater is considered separate from water management, but is closely related to drainage control and wastewater operations. For irrigated agriculture to continue in the future, acceptable levels of salts in soils and groundwaters must be controlled.

Maintenance of a favorable salt balance, that being a reasonable balance between the import and export of salts from individual basins, must be considered to control increases in mineral content. This is especially applicable for the Livermore and Santa Clara Valley groundwater basins.

The ultimate consequences of regulatory action for irrigation operations must be carefully assessed. The "no-degradation" concept in connection with salt levels is not appropriate in all circumstances.

A concept of minimal degradation might be considered in some areas. It would need to be coupled with management of the surface and underground water supplies in order to assure acceptable degradation effects. If minimal degradation is considered, it can be offset by either recharge and replenishment of groundwater basins with higher quality water that will furnish dilution to the added salts, or by drainage of degraded waters at a sufficient rate to maintain low salts and salts leaving the basin. To aid recharge and dilution operations, additional winter runoff can be stored in surface reservoirs for subsequent use with either surface stream or groundwater basin quantity/quality management.

4.16 WATER RECYCLING

Per Water Code Section 13050, recycled water means water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefore considered a valuable resource. To date in this Region, disposal of most municipal and industrial wastewater has primarily involved discharges into the Region's watersheds and the Estuary. With growing awareness of the impacts of toxic discharges, drought, future urbanization, and growth on the local aquatic habitat, there is an increasing need to look

for other sources of water. Increasingly, conservation and water recycling (formerly referred to as reclamation) will be needed to deal with these long-term water issues. The Water Board recognizes that people of the Region are interested in developing the capacity to conserve and recycle water to supplement existing water supplies, meet future water requirements, and restore the Region's watersheds and Estuary. Disposal of wastewater to inland, estuarine or coastal waters is not considered a permanent solution where the potential exists for conservation, water recycling, and reuse.

The Constitution of California, Article X, declares that, "...because of the conditions prevailing in the state, the general welfare requires that the water resources of the state be put to beneficial use to the fullest extent to which they are capable, and that the waste or unreasonable use or unreasonable method of use of water be prevented, and that the conservation of such waters is to be exercised with a view to the reasonable and beneficial use thereof in the interest of the people and for the public welfare." In other words, when suitable recycled water is available, it should be used to supplement existing water supplies used for agricultural, industrial, municipal, and environmental purposes.

The Water Board also recognizes and supports the concept that water reuse is an essential component for planning future water supply, especially in areas dependent on imported water. This includes projects that use recycled water to increase the local water supply, to improve the salt balance in the groundwater basin, or to reduce the need for wastewater export through recycled water irrigation and groundwater recharge with imported water or with high-quality recycled water. The year-round, dependable recycled water resource may also be appropriate for stream flow augmentation to enhance beneficial uses of streams.

State Water Board Resolution 77-1, adopted in 1977, requires the State and Regional Water Boards to encourage water recycling projects for beneficial use using wastewaters that would otherwise be discharged to marine or brackish receiving waters or evaporation ponds. The resolution also specifies using recycled water to replace or supplement the use of fresh water or better quality water, and to preserve, restore, or enhance in-stream beneficial uses, including fish, wildlife, recreation and aesthetics associated with any surface water or wetlands.

4.16.1 WATER RECYCLING AND REUSE PROGRAM

Before a wastewater producer can obtain an increase in connections and discharge flows under the Water Board's NPDES program, it must demonstrate that a maximum effort has been made to develop and implement a credible and effective water recycling program. This program must be integrated with a source control program (Pretreatment and Pollution Prevention Program (Section 4.13 Pretreatment and Pollution Prevention)) and a water conservation program.

All water recycling projects involve three components: 1) treatment of wastewater to produce water of quality suitable for the intended reuse; 2) distribution, which may also include storage, to convey the treated water to the place(s) of use; and 3) the end use, reuse. The most common types of reuse involve discharges to land for irrigation of landscape plants or crops, but reuse may also include non-discharge uses such as for cooling water or toilet flushing. Each of these components is subject to various design and operational requirements specified in the Water

Recycling Criteria (WRC) codified at Title 22, CCR, Division 4, Chapter 3, which were extensively revised and updated by Department of Health Services (DHS) from 1993 to 2001.

The Water Board in conjunction with DHS implements the WRC. DHS and the State Water Board have entered into a Memorandum of Agreement (MOA) on Use of Reclaimed Water. The intent of the MOA is to insure that there is coordination among DHS, the State Water Board and the Regional Water Boards to implement the recycled water program.

The Water Board is the permitting agency for water recycling projects through issuance of water recycling requirements, also called Water Reuse Requirements (WRRs). The WRRs require a discharger proposing a new water-recycling project to prepare an engineering report describing the project, for review and approval by DHS. The Water Board may then prescribe WRRs for the project based on recommendations from DHS. WRRs include relevant specifications from the WRC and other applicable requirements based on Water Board plans and policies, such as effluent limits and operation, and monitoring and reporting requirements. WRRs may be issued for discrete single-facility reuse projects or for large-scale projects such as municipality-based reuse programs involving multiple types and places of reuse.

In 1996, in order to facilitate water recycling and reuse in the Region, the Water Board adopted the General Water Reuse Requirements for Municipal Wastewater and Water Agencies, Water Board Order No. 96-011 (General Water Reuse Permit). This permit is applicable to producers, distributors, and users of non-potable recycled municipal wastewater throughout the Region. The intent of the General Water Reuse Permit is to streamline the permitting process and delegate, to the fullest extent possible, the responsibility of administrating water reuse programs to local agencies. Regulation under the General Water Reuse Permit requires submittal of a Notice of Intent (NOI) to the Water Board and written authorization from the Water Board's Executive Officer.

Under the General Water Reuse Permit, water recycling and reuse have expanded rapidly throughout the Region. It is estimated that twenty wastewater or water distribution agencies in the Region will be operating under the General Water Reuse Permit by 2007.

In 2001, the State Legislature established the California Recycled Water Task Force (Task Force). The mission of the Task Force was to evaluate the current framework of state and local rules, regulations, ordinances, and permits to identify opportunities for and obstacles to the safe use of recycled water in California. The Task Force consisted of representatives from federal, state, and local agencies, private entities, environmental organizations, universities, and public-interest groups. The Task Force identified and adopted recommendations to address obstacles, impediments, and opportunities for California to increase its recycled water usage as described in the report "Water Recycling 2030, Recommendations of California's Recycled Water Task Force."

4.16.2 INTERAGENCY WATER RECYCLING PROGRAM AND COORDINATION

Implementation of water recycling projects requires the involvement, approval, and support of a number of agencies, including state and local health departments, the Water Board, local POTWs and water districts, and land use planning agencies. Interagency coordination must be a priority of all parties involved in water recycling. Failure to coordinate activities can result in the inability

to carry out water recycling projects in a timely, consistent, and cost-effective manner. The Water Board seeks cooperation and participation of professionals from the water recycling industry and the water, health, and regulatory agencies to assure the development of criteria that are both attainable and appropriate. To facilitate inter-/intra-regional recycling projects, interagency coordination is necessary when the wastewater agency produces recycled water outside of an interested water purveyor's service area. Effective communication and cooperation between agencies regarding distribution and service is vital and should begin early in the planning process. This will assure the water purveyor that there will be no duplication of service, enable interagency agreement on project development and implementation, and help avoid any unnecessary delays that could jeopardize a project.

Several regional water-recycling programs have been initiated in the Region to facilitate water reuse in contiguous areas. This has heralded a new way to implement water-recycling projects by focusing agencies toward regional collaboration, irrespective of jurisdictional boundaries. This has the effect of integrating water and wastewater planning to concurrently solve water supply and wastewater discharge problems, and will lead to more efficient water recycling projects by taking advantage of economics of scale. One such program is the South Bay Recycling Program in Santa Clara County. In addition, the North Bay Watershed Association was created, “to help regulated local and regional public agencies work cooperatively on water resource issues that impact areas beyond traditional boundaries in order to promote stewardship of the North Bay Watershed (Marin, Sonoma and Napa Counties).” The coordination and integration of water reuse activities in the North Bay is an important component of the Association’s functions.

4.17 MUNICIPAL WASTEWATER SLUDGE MANAGEMENT

One particular type of solid waste is wastewater sludge, a by-product of wastewater treatment. Raw sludge usually contains 93 to 99.5 percent water, with the balance being solids that were present in the wastewater and that were added to or cultured by wastewater treatment processes. Most POTWs treat the sludge prior to ultimate use or disposal. Normally this treatment consists of dewatering and/or digestion. In some cases, such as at the Palo Alto treatment plant, the sludge is incinerated.

Treated and untreated sludges often contain high concentrations of toxic metals and often contain significant amounts of toxic organic pollutants and pathogens. The storage and disposal of municipal sludges on land can result in degradation of ground and surface water if not properly performed. Therefore, sludge handling and disposal must be regulated.

On February 19, 1993, the U.S. EPA promulgated national standards regulating the use or disposal of non-hazardous sewage sludge (40 CFR Part 503, et.seq.). Part 503 regulations primarily affect sewage sludge (also known as "biosolids") use and disposal by incineration, surface disposal, and land application (including distribution and marketing). Part 503 regulations also establish pollutant limits, operational and maintenance practices, monitoring frequency, recordkeeping, and reporting requirements. The federal definition of sewage sludge includes domestic septage (from septic tanks, cesspool, portable toilet, etc.). Disposal in a municipal solid waste landfill (MSWLF) is not considered surface disposal. Thus, the MSWLF is not regulated by the national sewage sludge program.

The State of California has neither requested nor been granted the delegation of the federal sewage sludge management program at this time. Therefore, U.S. EPA will be responsible for implementation and enforcement of the national rule. Under the rule, facilities that must apply for a permit include the generators, treaters and disposers of sewage sludge. Nevertheless, 40 CFR Part 503 has, for the most part, been written to be self-implementing. This means that anyone who uses or disposes of sewage sludge regulated by 40 CFR Part 503 must comply with all the provisions of the rule, whether or not a permit has been issued.

State regulations of the handling and disposal of sludge are contained in Chapter 15 and DTSC standards for hazardous waste management. Prior to promulgation of the national rule, sewage sludge facilities were regulated by the Water Board through the issuance of site-specific waste discharge requirements. The Water Board may continue to regulate certain sewage sludge facilities when believed to be necessary for the protection of water quality.

4.18 ON-SITE WASTEWATER TREATMENT AND DISPERSAL SYSTEMS

As the population of the Region increases, demand for new development increases. In many cases, new development is within areas served by municipal sewer systems. However development is also occurring in outlying areas not served by existing sewerage agencies. In those instances, new discrete sewerage systems are being proposed. These are primarily onsite wastewater treatment and dispersal systems (onsite systems or septic systems) serving individual homes, but include community systems serving multiple residences. Today there are more than 110,000 onsite systems throughout the Region, and approximately 1,000 new systems are approved each year.

In response to these development pressures, the Water Board adopted a Policy on Discrete Sewerage Facilities in 1978. The policy set forth the actions the Water Board will take with respect to proposals for individual or community sewerage systems serving new development. An important provision of the policy required the development of guidelines for acceptable onsite system practices. The Water Board's policy and guidelines are presented below.

4.18.1 POLICY ON DISCRETE SEWERAGE FACILITIES

This policy enumerates the following principles, which apply to all wastewater discharges:

- The system must be designed and constructed so as to be capable of preventing pollution or contamination of the waters of the state or creating nuisance for the life of the development;
- The system must be operated, maintained, and monitored so as to continually prevent pollution or contamination of the waters of the state and the creation of a nuisance;
- The responsibility for both of the above must be clearly and legally assumed by a public entity with the financial and legal capability to assure that the system provides protection to the quality of the waters of the state for the life of the development.

The policy also makes the following requests of city and county governments:

- That the use of new discrete sewerage systems be prohibited where existing community sewerage systems are reasonably available;
- That the use of individual onsite systems for any subdivision of land be prohibited unless the governing body having jurisdiction determines that the use of the systems is in the best public interest and that the existing quality of the waters of the state is maintained consistent with the State Water Board's Resolution 68-16; and
- That the cumulative impacts of individual system discharges be considered as part of the approval process for development.

Finally, the policy also requires that a public entity assume legal authority and responsibility for new community wastewater treatment and dispersal systems. Community systems are defined as collection sewers plus treatment facilities serving multiple discharges under separate ownership. The policy requires local governments, during the development approval process, to consider either the formation of a new government entity or an existing public entity to assume this responsibility.

4.18.2 ONSITE SYSTEM GUIDELINES

Since the early 1960s, the Water Board, pursuant to Section 13296 of the Water Code, adopted waivers for reporting certain septic system discharges in all the Region's counties except San Francisco. In its policy, the Water Board required the development of individual system guidelines concentrating mainly on septic systems. These guidelines provided information on system design and construction, operation and maintenance, and the conduct of cumulative impact studies.

In 1979, the Water Board adopted Resolution No. 79-5: Minimum Guidelines for the Control of Individual Wastewater Treatment and Disposal Systems (Minimum Guidelines). These guidelines include recommended practices for onsite system design, construction, operation and maintenance, and cumulative impact assessments, along with supporting rationale. The guidelines focus on the most common and conventional type of onsite systems, a septic tank followed by gravity-flow discharges into a subsurface soil absorption system, but underlying principles remain applicable to all types of onsite systems.

4.18.3 ALTERNATIVE ON-SITE SYSTEMS

The conventional onsite system, when properly constructed and operated, has long been a reliable and acceptable method of providing onsite sewage management. However, there are widespread conditions throughout the Region that preclude the use of conventional systems, including high groundwater, shallow or poor quality soil, or steep slopes. In recent years, there has been active interest and research in the development of alternative methods of onsite wastewater management to accommodate these limiting conditions. Alternative methods currently in use include additional treatment prior to soil discharge such as by a sand filter, or improved methods of dispersal into native soil such as by pressurized distribution throughout the soil absorption system, or via an engineered above-grade mound unit.

While alternative methods can afford improved practices, the use of alternative systems is not without limitations. The site and soil conditions that preclude conventional practices remain and must be appropriately addressed, since all onsite systems ultimately rely on soil absorption of all

or most of the wastewater generated. Most alternative systems require a high degree of design expertise, which increases the danger of faulty design or installation and complicates the review of various proposals. Furthermore, given that alternative systems are primarily used in areas of existing site or soil limitations, in the event of failure, options for replacement will be few, and corrections difficult to achieve. Finally, most alternative systems require a far more intensive and sophisticated level of management than conventional systems, including inspection, monitoring and maintenance by qualified service providers, and increased regulatory oversight, as well as careful use and operation by the homeowner.

Recognizing the need for a position on alternative systems, the Water Board adopted the following statement in the 1979 Minimum Guidelines:

"The Water Board Executive Officer may authorize the Health Officer to approve alternative systems when all of the following conditions are met:

a. Where the Health Officer has approved the system pursuant to criteria approved by the Water Board Executive Officer;
b. Where the Health Officer has informed the Water Board Executive Officer of the proposal to use the alternative system and the finding made in (a) above; and
c. Where a public entity assumes responsibility of the inspection, monitoring and enforcing the maintenance of the system through:

(i) Provision of the commitment and the necessary legal powers to inspect, monitor, and when necessary to abate/repair the system; and

(ii) Provision of a program for funding to accomplish (i) above."

The fundamental point is that the Water Board will allow the use of alternative systems only if adequate design review, system management, and means for failure correction are assured, and a county or some other public agency assumes ultimate responsibility for these actions.

The Water Board may authorize local agencies to approve and permit alternative on-site systems, provided the local regulatory program is found to be acceptable and in accordance with the Water Board's position on alternative systems discussed above. An acceptable program should include a) siting and design criteria for the types of alternative systems being approved, b) procedures for on-going inspection, monitoring, and evaluation of these systems, and c) appropriate local regulations for implementation and enforcement of the program. Authorization may be granted through a conditional waiver adopted by the Water Board and will typically include a Memorandum of Understanding (MOU) between the Water Board and the local agency. Typically, that agency will be the county environmental health department. The MOU provides a means for identifying the responsibilities of both the Water Board and the local agency, applicable criteria for siting, design, construction, operation, maintenance and monitoring, and procedures for implementing the program.

Alternative onsite system designs proposed for approval in a local agency program should be substantiated by suitable reference materials demonstrating successful performance under site and soil conditions similar to the local conditions, including previous field or research facility

testing and documentation of applicable design, installation and use criteria. System designs that have not been fully proven under proposed conditions will be considered experimental and treated with caution. In general, experimental systems will require more careful siting and design review and, if approved, intensive monitoring and inspection to ensure adequate system operation and performance. Experimental systems are generally approved only for limited use, until successful performance has been demonstrated and documented, and acceptable design, installation and use criteria determined.

4.18.4 GRAYWATER SYSTEMS

Graywater systems are a special group of onsite systems that are used to manage only isolated domestic wastewaters that have not come in contact with toilet wastes. In 1997, the California Building Standards Commission approved revised California Graywater Standards. These standards were developed by the California Department of Water Resources (DWR), are codified at Title 24, CCR, Part 5, Appendix G, and apply to all graywater systems statewide.

The standards specify the means by which certain non-toilet wastewaters may be collected, filtered, and discharged into onsite subsurface irrigation systems. Allowable sources of graywater include showers, tubs, bathroom sinks and laundry water. Discharged graywater may only be used for subsurface landscape irrigation. The standards apply to both residential and commercial buildings.

Cities and counties have authority to develop policies and procedures for the implementation of graywater programs. In developing these, consultation with the Water Board and local water districts can ensure that potential impacts on local water quality are taken into consideration.

4.19 EROSION AND SEDIMENT CONTROL

Current estimates of annual sediment inflow to San Francisco Bay are 5.9 million cubic yards with 3.9 million cubic yards contributed through the Delta and 2.0 million cubic yards from Bay Area tributary streams. By the year 2000, ABAG has estimated that approximately 322,500 acres of land area will be converted to urban use. This is a 73 percent increase above the 1975 urbanized land area. This increase in urbanized land use can be expected to be the future source of much of the sediment that will reach the rivers, streams and channels and ultimately the Bay system each year.

Soil erosion and related water quality impacts may result from a wide variety of causes including construction, hillside cultivation, non-maintained roads, timber harvesting, improper hiking/ biking trail use, and off-road vehicles.

Natural erosion processes are accelerated when existing protective cover is removed before, during, and following construction and agricultural activities. Studies relate that erosion on land where construction activities are taking place is about 10 times greater than on land in cultivated row crops, 200 times greater than on pasture land, and 2,000 time greater than on timber land that has not been logged.

The exposure of the soil mantle to falling rain, overland and channelized flow, and the impact of equipment moving over the site results in the increased movement and loss of soil.

Damage from erosion and sedimentation can be categorized in the following ways:

- Damage to construction sites;
- Damage to stream channels;
- Damage to water quality/beneficial uses;
- Damage to public and private property; and
- Damage to agricultural lands.

In most cases, the adverse results of human activities can be reduced and in some instances eliminated through the use of both structural and non-structural measures of various types that are properly employed at the appropriate time. The high cost of lost resources, resource replenishment and after-the-fact repair and maintenance make both pre-project erosion control planning and preventive maintenance necessary. The goals of and the program for erosion and sediment control are summarized below.

GOAL

The goal of the Water Board's Erosion and Sediment Control Program is to reduce and prevent accelerated (human-caused) erosion to the level necessary to restore and protect beneficial uses of receiving waters now significantly impaired, or threatened with impairment, by sediment.

This goal is to be attained through implementation of proper soil management practices. Voluntary implementation is encouraged, but enforcement authority will be exercised where beneficial uses of water are clearly threatened by poor soil management practices.

PROGRAM

In May of 1980, the Water Board adopted two separate items to alert local governments to the Water Board's concern on erosion control problems related to construction activities. The first item was a statement of intent (Resolution No. 80-5) regarding erosion control which stated that the Water Board:

- Recognizes that water quality problems are associated with construction related activities;
- Recognizes ABAG's progress in developing erosion and sediment control regulatory programs and assistance to local governments to implement these programs;
- Recognizes local governments power to adopt and implement these programs;
- Intends to strengthen its position with regard to regulation of sediment and erosion control problems especially with regard to construction activities; and
- Intends to take appropriate enforcement action pursuant to the California Water Code in cases where land development or other construction activity causes or threatens to cause adverse water quality impacts associated with erosion problems and intends to consider, during enforcement actions, whether local government negligently contributed to the problem due to failure to adopt and/or effectively enforce erosion control programs.

The second item was a memorandum of understanding negotiated with the Council of Bay Area Resource Conservation Districts that is intended to provide the following:

- Assessment, control and monitoring of potential and existing soil erosion related water quality problems;
- Improvement of coordination between the Resource Conservation Districts and the Water Board; and
- Monitoring of local government progress on the adoption and implementation of erosion and sediment control ordinances.

The Water Board has recognized and encouraged the efforts that ABAG has made since mid-1980 in working with local Bay Area governments to improve their ordinance and regulatory programs on erosion and sediment control. ABAG's 1995 Manual of Standards for Erosion and Sediment Control Measures, which provides specific guidance to local governments, is an important tool for improving erosion and sediment control.

The Water Board intends to follow the guidelines listed below in regulating erosion and sedimentation for the protection of beneficial uses of water.

1. Local units of government with land use planning authority should have the lead role in controlling land use activities that cause erosion and may, as necessary, impose further conditions, restrictions, or limitations on waste disposal or other activities that might degrade the quality of waters of the state.

2. Best Management Practices (BMPs) should be implemented to reduce erosion and sedimentation and minimize adverse effects on water quality. A BMP is a practice or combination of practices determined to be the most effective and practicable means to prevent or reduce erosion and sediment related water quality degradation. Examples of control measures are contained in the Manual of Standards for Erosion and Sediment Control Measures. Further technical guidance can be obtained from the Resource Conservation Districts.

3. Local governments should develop an effective erosion and sediment control ordinance and regulatory program. An effective ordinance and regulatory program must:

- Be at least comparable to the model ordinances in ABAG's Manual of Standards for Erosion and Sediment Control Measures;
- State that water quality protection is an explicit goal of the ordinance;
- Require preparation of erosion and sediment control plans consistent with the Manual of Standards with specific attention to both off-site and on-site impacts;
- Provide for installation of approved control measures no later than October 15 of each year; and
- Have provisions for site inspections with follow up at appropriate times, posting of financial assurances for implementation of control measures, and an enforcement program to assure compliance with the ordinance.

4. All persons proposing alterations to land (over five acres) are required to file a Report of Waste Discharge and/or and Erosion Control Plan with the Water Board. A statewide general NPDES permit aimed at minimizing erosion from the proposed activities has been issued.

In addition, the Water Board may find that any water quality problems caused by erosion and sedimentation for such a project were due to the negligent lack of an adequate erosion control ordinance and enforcement program by the local permitting agency. Such a finding of negligence could subject a permitting agency to liability for indemnification to a developer if civil monetary remedies are recovered by the state.

5. The Water Board may take enforcement action pursuant to the California Water Code to require the responsible persons (including local permitting agencies) to clean up and abate water quality problems caused by erosion and sedimentation in the event that the local permitting agency fails to take the necessary corrective action.

4.20 DREDGING AND DISPOSAL OF DREDGED SEDIMENT

Dredging and dredged sediment disposal in the San Francisco Bay Area is an ongoing activity because of continual shoaling which impedes navigation and other water dependent activities. Large volumes of sediment are transported in the waters of the Sacramento and San Joaquin Rivers which drain the Central Valley. The average annual sediment load to the San Francisco Bay system from these two rivers is estimated to be eight million cubic yards. Of this amount, some four million cubic yards is transported out of the Bay through the Golden Gate. The remaining four million cubic yards is circulated and/or deposited in the Bay. In addition, some two and one-half million cubic yards are deposited into the Bay from local watersheds.

Annual maintenance dredging of shipping channels, harbors and marinas in the San Francisco Bay results in disposal of between two and eight million cubic yards of dredged material at in-bay disposal sites. There are currently three designated disposal sites for use by the Corps, the Navy and other dredgers. Additionally, the Corps disposes of material from several projects at designated sites in Suisun Bay and on the San Francisco Bar (west of the Golden Gate). All aquatic dredged material disposal sites are operated as "dispersive" sites, that is material disposed at the sites is intended to disperse and be carried by currents out to sea.

4.20.1 REGULATORY FRAMEWORK

The Corps of Engineers issues federal permits for dredging projects pursuant to Section 404 of the Clean Water Act. As a part of this permitting process, the dredging permit applicant must seek water quality certification from the State of California, in accordance with Section 401 of the Clean Water Act. Currently the applicant must contact the Water Board for 401 certification. The Water Board may waive certification, or it may recommend to the Executive Director of the State Water Resources Control Board that Certification be granted or denied. Water quality certifications often contain conditions that the permittee must meet during the term of the permit. For example, Certifications often contain conditions requiring periodic testing of the dredged material, or avoidance of sensitive ecological areas and spawning grounds. The San Francisco Bay Conservation and Development Commission (BCDC) also regulates dredging and disposal under the provisions of the McAteer-Petris Act.

4.20.2 ENVIRONMENTAL IMPACTS OF DREDGING AND DISPOSAL IN THE AQUATIC ENVIRONMENT

During the late 1980s and continuing to the present, concern over the potential impacts of dredged sediment disposal in San Francisco Bay has increased substantially, forcing regulatory agencies to reexamine their dredging policies. The Water Board, during their triennial review of the Basin Plan in 1986, stated their intention to update and revise the Water Board's dredged sediment disposal policy for San Francisco Bay. During the triennial review, the Water Board recognized that periodic dredging is necessary to maintain the beneficial use presented by navigation and other water dependent activities. The Water Board also stated their intention to institute a more rigorous testing program to determine the suitability of dredged sediment for unconfined aquatic disposal in San Francisco Bay.

Most dredging and dredge material disposal operations cause localized and ephemeral impacts with related biological consequences (Table 4-12). In August, 1980, the Water Board adopted a general policy for the regulation of dredge sediment disposal. Many concerns have been raised about the adequacy of the Corps' regional procedures to identify potential pollution conditions. One area of concern is implicit in the guidelines and protocol, for testing of sediment for ocean disposal. The current ocean disposal criteria (pursuant to the Marine, Protection, Research and Sanctuaries Act) are more stringent than the inland criteria (governed under the Clean Water Act). In the 1980s it was determined that the Alcatraz disposal site was accumulating significant amounts of material, with the depth of the site going from the original 110 feet to 30 feet. The mounding at the disposal site ultimately became a threat to navigation. The Corps eventually dredged the Alcatraz site to increase the depth, redistributing the material within the disposal area several times between 1984 and 1986.

In September of 1988, Water Board staff circulated and presented an issue paper entitled "A Review of Issues and Policies Related to Dredge Spoil Disposal in San Francisco Bay." The issue paper discussed the major environmental concerns posed by dredged sediment disposal in San Francisco Bay, namely: (1) mounding at the Alcatraz disposal site which posed a navigational hazard and has the potential to alter circulation patterns in the Bay; (2) the disposal of increasingly large amounts of material has the potential to alter benthic and shoreline habitats and to increase water column turbidity; and (3) the resuspension of dredged sediments may increase contaminant bioavailability. The issue paper presented a range of alternative strategies for the Water Board to consider. Public and agency testimony was received by the Water Board during hearings on September 15, 1988 and October 19, 1988. Agencies testifying included the Corps, U.S. Environmental Protection Agency (USEPA), and California Department of Fish and Game (CDFG). In the issue paper, Water Board staff recommended that the Water Board consider adopting quantity and quality limits for the disposal of dredged sediment at unconfined aquatic disposal sites within San Francisco Bay.

Additionally, the Water Board and the Corps took steps to prevent further "mounding" at the region's single largest disposal site, the Alcatraz site. In 1989, the Water Board adopted volume targets which served to prevent over-filling of the region's three aquatic disposal sites. BCDC also revised its policies to restrict in-bay disposal. Land disposal avoids many of the potential adverse impacts in aquatic systems. A different set of potential environmental impacts is associated with land disposal but also the opportunity for creating environmental benefits.

4.20.3 DREDGING STUDY PROGRAMS

4.20.3.1 DREDGE MANAGEMENT PROGRAM

In the late 1980s, the Corps of Engineers undertook a series of local dredging studies as a part of the Dredged Management Program (DMP). Additionally, the Corps nationally undertook a Demonstration Program, to examine the environmental impacts from various dredged material disposal practices. The goal of these programs was to examine: 1) factors associated with aquatic disposal practices, 2) the characteristics of dredged material, 3) alternative methods of disposal and 4) dredging technology. However, because the DMP was conducted internally; was not consensus-based; and did not fully involve other state and federal agencies, environmental groups and the dredging community; concern and conflict continued to surround dredging in San Francisco Bay. One particularly notable instance of continued conflict was a 1989 protest and blockade of the aquatic disposal sites by environmental and fishing interests. In the fall of 1989 and early 1990, the Corps undertook a new approach to studying environmental issues surrounding dredging and disposal site management.

4.20.3.2 LONG-TERM MANAGEMENT STRATEGY (LTMS)

The new approach, called the Long Term Management Strategy (LTMS) for dredged material, was designed as a cooperative process based on active participation by state and federal permitting agencies. The lead LTMS agencies share four basic goals related to the fact that dredging is important both economically and environmentally (Table 4-13). The LTMS structure is a pyramid form with technical committees at the base, and appointed state and federal agency administrators at the top (Table 4-14). Three staff-level committees, or "workgroups" were charged with addressing technical issues and managing environmental studies. The Corps of Engineers, San Francisco District, was charged with general coordination, contracting and administrative functions. Later in the process, a fourth committee was formed to carry out various LTMS implementation tasks. The implementation committee has been primarily concerned with permit coordination and streamlining, but has also attempted to address inequities in upland disposal site financing, upland/non-tidal site acquisition and changes to Federal dredging policy. Above the technical and implementation committees is the Management Committee, represented by management executives from five key LTMS agencies. The Management Committee, in turn, takes direction from the Executive Committee. The Executive Committee consists of the chairpersons of the Water Board and BCDC, the USEPA Regional Administrator, the State Dredging Coordinator (Governor Appointed), and the commander of the South Pacific Division, Corps of Engineers. Broad public input is gained via the Policy Review Committee, which meets quarterly to review the work and progress of LTMS.

4.20.3.3 THE LTMS PROCESS

The LTMS process allows participation by resource agencies, environmental groups and the maritime industry. In 1990, the LTMS Study Plan was approved by the participating agencies. The Study Plan outlined in general, the LTMS process and which scientific fields were pertinent and in which areas there existed "gaps" in knowledge. Technical work groups were established order to take responsibility for examining issues in the arenas of: 1) deep ocean disposal, 2) in-bay aquatic disposal, and 3) upland/non-aquatic disposal and re-use. Staff at the Water Board, BCDC and USEPA were appointed to chair the three work groups (Table 4-14). Each committee

was budgeted funds by the Corps in order to carry out approved studies. Throughout the LTMS process, the Corps has retained responsibility for contract management, budgets, and other administrative duties. For the first several years of the program, the In-bay studies work-group also served as a part of the San Francisco Estuary Project, as it was also designated as the subcommittee on "Dredging and Waterway Modification."

The LTMS process has resulted in new findings regarding sediment toxicity testing and transport; the development of new testing procedures; and new approaches to disposal of dredged material. Additionally, the LTMS participants continue to work toward better disposal site management, and, perhaps more importantly, an increased level of coordination and cooperation between those involved with dredging. Participating federal and state permitting and resources agencies receive technical and policy input from dredging, environmental and fishing communities through the LTMS structure.

4.20.3.4 OCEAN STUDIES

The Ocean Studies Work Group, funded through LTMS, provided input on U.S. EPA' s study and designation of a deep ocean disposal site for dredged material. The group oversaw studies in the areas of sediment transport modeling, benthic ecology and environmental risk. The results of various technical studies were compiled in an Environmental Impact Statement (EIS) in which five disposal sites were considered.

U.S. EPA completed an EIS on ocean disposal in August of 1993. Concurrent and following work on the EIS, U.S. EPA, with input from LTMS, moved closer to disposal site use by completing a Site Management and Monitoring Plan. The designated deep ocean disposal site is located about 58 miles offshore, beyond the boundaries of the California National Marine Sanctuaries, in waters which are 6,000 to 9,000 feet deep. The site was formally designated by U.S. EPA on August 11, 1994 (59 Federal Register Section 41243 et seq.) It is expected that the ocean site will be used for disposal of dredged material from large new work and maintenance dredging projects.

4.20.3.5 IN-BAY STUDIES

In-bay disposal studies were undertaken to address several key areas of concern. Following the general terms of the LTMS Study Plan, the In-bay work group examined key environmental concerns in the following areas:

- Physical effects of disposal, including turbidity;
- Physical processes including fate and transport of material from the disposal sites using numerical modeling;
- Toxicological issues, including release of contaminants during disposal, and ecological fate of contaminants;
- Non-treatment effects in sediment toxicity tests;
- Bioaccumulation;
- Methods to reduce the need for dredging; and
- Sampling and analysis methods for sediment testing.

Most of the LTMS in-bay studies were completed by the end of 1994; however, several documents remain in draft form.

4.20.3.6 UPLAND AND NON-TIDAL/REUSE STUDIES

The Upland Studies Program focused on the evaluation of the potential for upland disposal and the use of dredged material as a resource. The group conducted planning-level feasibility studies of potential sites in the San Francisco Bay and Delta. Studies examined the engineering, biological and hydrological aspects of wetland restoration using dredged material; as well as, various regulatory and planning issues surrounding upland reuse. Other issues studied by the group included: remedial technologies for treating contaminated sediments, an analysis of seasonal and tidal wetlands in the North Bay and a feasibility study of potential sediment rehandling sites.

The LTMS technical studies have added to our information base and have filled some of the "data gaps" that were originally identified in the LTMS Study Plan. In many cases, LTMS studies have confirmed our conceptual views and hypotheses about how the Estuary and the ecosystem functions.

4.20.4 WETLAND RESTORATION USING DREDGED MATERIAL

While the Water Board remains concerned about the impacts of both polluted and clean sediments on the San Francisco Estuary, much of the sediment disposed of in the Region is not polluted and could be used in beneficial ways (termed "reuse"). One of these uses involves the restoration of tidal marshes in areas which were once part of the Bay. These areas, known as diked historic baylands, were once open to the tides and were thriving salt marsh and mudflat ecosystems (further discussion under "Wetlands Protection and Management" section). Decades of land "reclamation," first initiated in the 1800s resulted in diked agricultural lands, the land surface of which have subsided for a variety of reasons.

In order to foster growth of marsh vegetation, and proper slough channel formation, the new marsh must be built near mean high tide. In many cases it will be beneficial to place a layer of sediment across the site so as to raise the elevation of the land surface to a point near the mean tide line. LTMS studies have examined the environmental, engineering and economic considerations that are involved in restoring certain sites. The studies commissioned by LTMS have shown that, given current laws and policies, placement of dredged sediment at wetland restoration projects may cost more than traditional in-Bay disposal, but less than ocean disposal.

4.20.4.1 SONOMA BAYLANDS

One such example of this concept is the Sonoma Baylands Wetlands Demonstration Project. The Sonoma Baylands property, which was formerly used for hay production, was acquired by the Sonoma Land Trust for preservation as undeveloped open space. The Sonoma Baylands project was managed by the State Coastal Conservancy which facilitated a partnership between the Corps and the Port of Oakland. Federal legislation was necessary to allow the Corps to direct the construction of the project. The Corps began filling the site with dredged sediment in the fall, 1995, with completion expected in late 1996. The 322-acre Sonoma Baylands site will require some two and a half million cubic yards of sediment prior to contact with tidal waters. The Water Board has issued a permit for the construction of Sonoma Baylands, regulating the placement of dredged sediment and run-off water from the site. Tidal marsh vegetation is expected to be established within five years of construction.

4.20.4.2 MONTEZUMA WETLANDS RESTORATION PROJECT

The Montezuma Wetlands Restoration Project is planned on an even larger scale. The Montezuma project site is located on northern boundary of Suisun Bay at Collinsville. The site, which is adjacent to the Suisun Marsh reserve, is currently used for sheep ranching and commercial pheasant hunting. The Montezuma project involves the restoration of approximately 1,800 acres of diked historic baylands to tidal action. Like, the Sonoma Baylands site, dredged sediment would be placed at Montezuma in order to account for the heavily subsidence that has occurred at the site. In some areas, up to a seven-foot thick layer of sediment would be necessary to bring the site to a proper elevation for wetland creation. Because the Montezuma site has subsided so much, the quantity of material that potentially will be placed there is in the range of 20 million cubic yards. Montezuma project is currently undergoing CEQA review.

4.20.5 WATER BOARD POLICIES ON DREDGING AND DREDGED SEDIMENT DISPOSAL

4.20.5.1 NEED FOR REGIONAL AND LOCAL MONITORING

The Water Board recognizes that the continued disposal of maintenance work will require a demonstration that there are no significant or irreversible impacts occurring from the disposal of maintenance dredged material in San Francisco Bay. The Corps' and other major dredgers' active participation in environmental studies, as well as testing and monitoring programs is absolutely necessary in order to find solutions to the dredging problems in the region.

4.20.5.2 MATERIAL DISPOSAL RESTRICTION

Materials disposed of at approved aquatic dredged material disposal sites shall be restricted to dredged sediment. Disposal of rock, timber, general refuse and other materials shall be prohibited.

4.20.5.3 VOLUME TARGETS

Volume targets for each disposal site were developed based on understandings of sediment dynamics and historical information regarding disposal volumes (Table 4-16). An examination of disposal patterns at all aquatic disposal sites in San Francisco Bay revealed that the Carquinez Straits area may be influenced by wet weather events. The volume targets for the Carquinez Straits disposal site are 3.0 million cubic yards for wet and above normal years and 2.0 million cubic yards for all other year classification.

In addition, the Water Board establishes a volume target of 0.2 million cubic yards per year for the Suisun Bay Channel disposal site and restricts its use to Corps maintenance dredging. The San Francisco Bar site is used for disposal of material from the bar channel. The use of the San Francisco Bar disposal site is regulated under the Marine Research, Sanctuaries and Protection Act.

4.20.5.4 VOLUME TARGET IMPLEMENTATION

The Water Board will consider denial of water quality certification for any project proposing to place material at a disposal site for which the annual or monthly volume target has been

exceeded. Small project proponents may apply for an exemption to monthly or annual volume targets and new work disposal in San Francisco Bay. A small project is defined as a facility or project whose design depth does not exceed 12 feet Mean Lower Low Water (MLLW). The project proponent must demonstrate:

a. That the additional burden placed upon the applicant would be inordinate relative to the beneficial uses protected; and
b. That the proposed discharge is less than 20,000 cubic yards in one year and not to exceed 50,000 cubic yards over five years.

4.20.5.5 USE OF TESTING GUIDELINES

The Water Board's Executive Officer will continue to require technical data according to Public Notice 93-2, "Testing Guidelines for Dredged Material Disposal at San Francisco Bay Sites," or subsequent guidelines. In June of 1994, the Corps of Engineers and USEPA published the draft Evaluation of Dredged Material Proposed for Discharge in Waters of the U.S. (Draft), Inland Testing Manual (ITM). The ITM is intended to provide comprehensive guidance to dredging applicants on sampling and testing of sediment. The ITM outlines a tiered approach to sediment testing, similar to the existing Ocean Disposal Testing Manual, or "Green Book", which was written by the federal government for ocean disposal (pursuant to MPRSA).

The Water Board is working in cooperation with other LTMS agencies to develop a regional implementation manual which will detail how the ITM will be implemented in the San Francisco Bay Area. The ITM was intended to only address testing of material for aquatic disposal and does not provide protocol for upland disposal. Disposal of dredged material in other environments for beneficial re-use, e.g. wetland restoration, landfill daily cover, and levee bolstering will be subject to guidance provided by the Water Board.

The Executive Officer, following consultation with other agencies, will periodically review and update all testing procedures. The Executive Officer may require additional data collection beyond the tiered-testing procedures on a case-by-case basis.

4.20.5.6 APPLICABILITY OF WASTE DISCHARGE REQUIREMENTS

The Water Board will consider issuing waste discharge requirements for individual dredging projects unless the Executive Officer has waived such requirements in accordance with Resolution No. 83-3, which is incorporated by reference into this plan (see Chapter 5).

4.20.5.7 DREDGING WINDOWS

The Water Board will restrict dredging or dredge disposal activities during certain periods ("windows") in order to protect the beneficial uses of San Francisco Bay. These beneficial uses include water contact recreation, ocean commercial and sport fishing, marine habitat, fish migration, fish spawning, shellfish harvesting, and estuarine habitat. These restrictions may include but are not limited to:

a. Dredging activities from December through February in selected sites along the waterfront where Pacific Herring are known to spawn; and

b. Disposal activities at the Carquinez Straits site during spring and fall in order to protect Striped Bass and Salmon migrations.

4.20.5.8 IMPACTS AT DREDGE SITE

The Water Board may require additional documentation and inspections during dredging activities in order to ensure that dredgers minimize impacts at the dredging location. Water Quality Certifications or waste discharge requirements may contain additional conditions to address barge overflow and other impacts at the dredging site. Permit conditions may include:

- Special reporting procedures for the hydraulic pumping of dredged material into transport scows prior to disposal (marina slip applications);
- Time limit on the overflow from hopper-type hydraulic dredges in order to obtain an economical load; or
- Precautions to minimize overflow and spillage from the dredging vessel when in-route to the authorized disposal site. (Appreciable loss during transit shall be considered unauthorized disposal, or "short dumping" and such occurrences are subject to enforcement by the Water Board or other applicable state or federal agencies.)

4.20.5.9 POLICY ON LAND AND OCEAN DISPOSAL

The Water Board shall continue to encourage land and ocean disposal alternatives whenever practical. Water Board staff have determined that there should be a high priority placed on disposing of dredged sandy material upland. At a minimum, incentives should be developed to limit disposal of any such material with a market value to upland uses. Staff may condition Certifications so as to encourage upland re-use of high-value sediments.

4.20.5.10 POLICY ON DREDGED MATERIAL DISPOSAL PERMIT COORDINATION

The Water Board will implement these measures through its issuance of Waste Discharge Requirements, Water Quality Certification under Section 401 of the Clean Water Act or other orders. In addition, the Water Board will may require pre- and post-dredge surveys to determine disposal volumes and compliance with permit conditions. In order to better manage data and reduce paper files, Water Board staff will be requesting that applicants submit testing and other project data in a specific electronic format. The Water Board has been an active participant in efforts to improve the overall dredging permit process and the procedures. The goal of this effort is to provide the public with uniform testing and disposal guidelines, joint permit actions, a streamlined permit application process and more uniform permit enforcement. Staff are working with other state and federal agencies to implement a combined state-federal dredging permit process. The process is generally based on the Washington State "Dredged Material Management Office," a part of the Puget Sound Dredged Disposal Analysis program (PSDDA) which regulates dredging and disposal in the Seattle and Tacoma regions.

4.20.5.11 CURRENT CORPS OF ENGINEER'S POLICY ON VOLUME OF MATERIAL DISPOSED OF AT THE ALCATRAZ DISPOSAL SITE

On February, 1, 1993, the Corps of Engineers released a proposed policy, as Public Notice 93-3, which further limited allowable monthly disposal volumes at the Alcatraz disposal site (SF-11).

The Corps stated that the "existing maximum volume targets have been determined to be inadequate to maintain the site for continued dredged material disposal." The Corps' change in policy in the Public Notice reduces monthly volume limits for the Alcatraz site below what has been adopted by the Board (table). However, the Corps' policy does not address annual limits, it reserves exclusive use of the site for Corps-maintained projects if deemed necessary, and it allows other dredgers to dispose of material at the San Pablo Bay site (SF-10), when and if the Alcatraz site has reached capacity. Of course, the Corps may change their policy independently of the Water Board and other agencies.

4.21 MINES AND MINERAL PRODUCERS

The Water Board oversees water quality problems associated with over 150 inactive and active mining and mineral producers in the Region, as described below.

4.21.1 INACTIVE SITES

Over 50 abandoned or inactive mines have been identified within the Region (Table 4-16 and Figure 4-5). The mineral resources extracted include mercury, magnesite, megnesium salts, manganese, pyrite, coal, copper, silver, and gold. A large percentage of the mining activities took place from 1890-1930, although some areas were mined as recently as 1971. The size of these mines varies from relatively small surface mines of less than half an acre to the world's second largest mercury mine, the New Almaden District, located in Santa Clara County.

Water quality problems associated with mining activities can be divided into three categories:

- Erosion and sediment discharges from surface mines and ore tailings piles;
- Acid or otherwise toxic aqueous discharge from underground mines, ore tailings, slag, or other mining processes; and
- Atmospheric deposition, such as releases from stacks carried downwind from mine sites.

Problems of erosion and sediment discharged from mined areas may be intensified due to the fact that sediment from ore-rich areas typically contain high concentrations of metals. Biological processes which take place in lake and stream bottom sediments may allow for these pollutants to be released in a form that more readily bioaccumulates in the food chain.

Water quality and aquatic toxicity monitoring data suggests that the beneficial uses of a number of water supply reservoirs, creeks, and streams in the Region have been impacted as a result of past mining activities. Threatened beneficial uses of lakes, streams, bays and marshes due to mining activities so far identified in the Region include: fish migration, fish spawning, shellfish harvesting, wildlife habitat, preservation of rare and endangered species, cold and warm freshwater habitat, and water contact recreation. In response to these findings, the Water Board conducted surveys to locate abandoned and operating mines in the Region. The results of the surveys are compiled in the 1998 report titled, "San Francisco Bay Regional Water Quality Control Board Mines Report."

In many cases, the adverse results of previous surface mining activities can be reduced, and in some cases eliminated, through appropriate erosion and sediment control practices. The U.S.

Natural Resource Conservation Service (NRCS, formerly Soil Conservation Service) has developed a Resource Management System for Surface Mined Areas. This management system references practices and treatment alternatives needed to address the following:

- Erosion control practices that route surface water run-off at non-erosive velocities and reduce soil movement by wind or water to within acceptable limits;
- Maintenance of adequate water quality and quantity for planned uses and to meet federal, state, and local requirements;
- Pollution control to meet federal, state, and local regulations; and
- A system of planned access and/or conveyance that is within local regulations and meets the needs for the intended use.

In 1980, a memorandum of understanding (MOU) was negotiated with the Council of Bay Area Resource Conservation Districts in order to provide for assessment and monitoring of potential and existing soil erosion-related water quality problems, and identification of control measures. It was agreed that local units of government should have the lead role in controlling land use activities that cause erosion. Controls measures include the implementation of BMPs. The Resource Management System for Surface Mined Areas developed by NRCS specifically references BMPs determined to be the most effective and practicable means of preventing or reducing erosion and sediment-related water quality degradation resulting from surface mining activities.

4.21.2 ACTIVE SITES

There are approximately 100 active quarries and mineral producers within the Region. The primary commodities produced include clay, salt, sand and gravel, shale, and crushed stone. Water quality problems associated with active mineral production generally consist of erosion and sediment discharge into nearby surface water bodies and wildlife habitat destruction.

Mining activities are in part regulated under the Surface Mining and Reclamation Act of 1975. This Act requires all mine operators to submit a reclamation plan to the California Geological Survey (formerly California Department of Conservation, Division of Mines and Geology) and the recognized lead local agency for the area in which the mining is taking place. Recognized lead local agencies for the Region include county planning and public works departments. Additionally, some local planning departments regulate mining activities through the issuance of conditional land use permits. The goal of each reclamation plan is to assure that mined lands are reclaimed to a usable condition that is readily adaptable for alternate land uses and creates no danger to public health and safety. The current permitting process places very little emphasis on the need to protect beneficial uses of surface and groundwater.

Under Title 23, CCR, Chapter 15, Article 7, the Water Board has the authority to regulate mining activities that result in a waste discharge to land through the use of WDRs. Additionally, the federal NPDES stormwater regulations (40 CFR Parts 122, 123, and 124) require active and inactive mining operations to obtain NPDES permit coverage for the discharge of stormwater polluted by contact with any overburden, raw material, intermediate products, finished products, byproducts, or waste products.

4.21.3 MINING PROGRAM GOAL

The Water Board's goal for its mining program is to restore and protect beneficial uses of receiving waters now impaired, or threatened with impairment, resulting from past or present mining activities. This goal will be attained by the coordinated effort of the Water Board, NRCS, the Council of Bay Area Resource Conservation Districts, the California Geological Survey, and lead local government agencies through the implementation of a mineral production and mining management program.

4.21.4 MINING PROGRAM DESCRIPTION

1. The Water Board intends to continue to work closely with Resource Conservation Districts and NRCS to identify all existing and abandoned mines and mineral production sites in the Region. Responsible parties will be identified. If needed, potential funding alternatives for cleanup activities will also be identified. Sites will be prioritized based on existing and potential impacts to water quality and size.

2. The Water Board will require an NPDES permit for the discharge of polluted stormwater from active and inactive mining operations, as defined in NPDES stormwater regulations. The Water Board will consider issuing individual permits or a general permit for such discharges, or will otherwise allow coverage under the State Water Board general permit for stormwater discharges associated with industrial activity as described in Section 4.14 Urban Runoff Management, Industrial Activity Control Program. Requirements of the notice of intent to be covered under the general permit(s) and the schedule for submittal will be established in the permit(s).

3. The responsible party or operator of each site discharging, or potentially discharging waste to land shall be required to submit a Report of Waste Discharge to the Water Board. Submittal of a Report of Discharge will be requested by the Water Board pursuant to the Water Code Section 13267. Requests will be made on a site-by-site basis and based on priority. A Report of Waste Discharge shall consist of a "Site Closure Plan" and an "Operation and Management Plan" for active sites, as described below:

- Each plan shall be designed to ensure short- and long-term protection of beneficial uses of receiving waters.
- The "Closure Plan" shall address site restoration and long-term maintenance and monitoring, which may include a financial guarantee to ensure that adequate funds are available for proper site closure.
- The "Operation and Management Plan" shall address stormwater runoff and erosion control measures and practices.
- Each plan will be evaluated in regard to potential impacts to beneficial uses of receiving waters. WDRs will be issued or conditionally waived at the discretion of the Water Board based on the threat to water quality and the effectiveness of identified and implemented control measures and the effectiveness of local agency oversight.

4.22 VESSEL WASTES

The discharge of wastes from pleasure, commercial, and military vessels has been a water quality concern of the Water Board since 1968 when Resolution No. 665 was adopted, which suggested

that the federal government regulate waste discharges from vessels. In 1970 the Water Board adopted Resolutions 70-1 and 70-65 on vessel wastes. The first urged BCDC to condition marina permits for new or expanded marinas to include pumpout facilities, dockside sewers, and restroom facilities. Resolution 70-65 recommended that vessel wastes be controlled in such a manner through legislative action.

In 1982, the Water Board conducted a study that found high levels of coliform in the vicinity of several marinas in Marin County's Richardson Bay. Subsequently, the Water Board adopted a prohibition against discharge of any kind into Richardson Bay. A regional agency was formed to implement and enforce this prohibition.

There is an ongoing effort to construct, renovate, and improve pumpout facilities at marinas and ports around the region. The goal of these efforts is to increase the accessibility of these facilities to boaters and reduce pollution from vessel wastes.

4.23 WETLAND PROTECTION AND MANAGEMENT

Wetlands and related habitats comprise some of the Region's most valuable natural resources. Wetlands provide critical habitats for hundreds of species of fish, birds, and other wildlife; offer open space; and provide many recreational opportunities. Wetlands also serve to enhance water quality, through such natural functions as flood control and erosion control, stream bank stabilization, and filtration and purification of surface water.

The Water Board will refer to the following for guidance when permitting or otherwise acting on wetland issues:

- Governor's Executive Order W-59-93 (signed August 23, 1993; also known as the California Wetlands Conservation Policy, or the "No Net Loss" policy);
- Senate Concurrent Resolution No. 28; and
- Water Code Section 13142.5 (applies to coastal marine wetlands).

The goals of the California Wetlands Conservation Policy include ensuring "no overall net loss," achieve a "long-term net gain in the quantity, quality, and permanence of wetlands acreage and values ...", and reducing "procedural complexity in the administration of state and federal wetlands conservation programs."

Senate Concurrent Resolution No. 28 states, "It is the intent of the legislature to preserve, protect, restore, and enhance California's wetlands and the multiple resources which depend on them for the benefit of the people of the state."

Water Code Section 13142.5 states, "Highest priority shall be given to improving or eliminating discharges that adversely affect ... wetlands, estuaries, and other biologically sensitive sites."

The Water Board may also refer to the Estuary Project's Comprehensive Conservation and Management Plan (June, 1994) for recommendations on how to effectively participate in a Region-wide, multiple-agency wetlands management program.

4.23.1 BAYLANDS ECOSYSTEM HABITAT GOALS

Consistent with the California Wetlands Conservation Policy, the Water Board participated in the preparation of two planning documents for wetland restoration around the Estuary: Baylands Ecosystem Habitat Goals (1999) and Baylands Ecosystem Species and Community Profiles (2000), together known as the Habitat Goals reports. The Habitat Goals reports provide a starting point for coordinating and integrating wetland planning and regulatory activities around the Estuary. The Habitat Goals reports identify and specify the beneficial uses and/or functions of existing wetlands and suggest wetland habitat goals for the baylands,defined in the Habitat Goals reports as shallow water habitats around the San Francisco Bay between maximum and minimum elevations of the tides. The baylands ecosystem includes the baylands, adjacent habitats, and their associated plants and animals. The boundaries of the ecosystem vary with the bayward and landward movements of fish and wildlife that depend upon the baylands for survival. The Habitat Goals reports were the non-regulatory component of a conceptual regional wetlands management plan from the mid-1990's.

4.23.2 DETERMINATION OF APPLICABLE BENEFICIAL USES FOR WETLANDS

Beneficial uses of water are defined in Chapter 2 Beneficial Uses and are applicable throughout the Region. Chapter 2 also identifies and specifies the beneficial uses of 34 significant marshes within the Region (Table 2-3). Chapter 2 indicates that the listing is not comprehensive and that beneficial uses may be determined site-specifically. In making those site-specific determinations, the Water Board will consider the Habitat Goals reports, which provide a technical assessment of wetlands in the Region and their existing and potential beneficial uses. In addition to the wetland areas identified in Chapter 2, the Habitat Goals reports identified additional wetlands in the Region as having important habitat functions. Because of the large number of small and non-contiguous wetlands within the Region, it is not practical to specify beneficial uses for every wetland area. Therefore, beneficial uses will frequently be specified as needed for a particular site. This section provides guidance on how beneficial uses will be determined for wetlands within the Region.

Information contained in the Habitat Goals reports, the National Wetlands Inventory (NWI) prepared by the U.S. Fish and Wildlife Service (USFWS), and in the scientific literature regarding the location and areal extent of different wetland types will be used as initial references for any necessary beneficial use designation. The NWI is the updated version of the USFWS's Classification of Wetlands and Deepwater Habitats of the United States (Cowardin, et al. 1979), which is incorporated by reference into this plan, and was previously used by the Water Board to identify specific wetland systems and their locations. The updated NWI or other appropriate methods will continue to be used to locate and identify wetlands in the Region. A matrix of the potential beneficial uses that may be supported by each USFWS wetland system type is presented in Table 2-4.

It should be noted that, while the Habitat Goals reports and USFWS's NWI wetlands classification system are useful tools for helping to establish beneficial uses for a wetland site, it is not suggested that these tools be used to formally delineate wetlands.

4.23.3 HYDROLOGY

Hydrology is a major factor affecting the beneficial uses of wetlands. To protect the beneficial uses and water quality of wetlands from impacts due to hydrologic modifications, the Water Board will carefully review proposed water diversions and transfers (including groundwater pumping proposals) and require or recommend control measures and/or mitigation as necessary and applicable.

4.23.4 WETLAND FILL

The beneficial uses of wetlands are frequently affected by diking and filling. Pursuant to Section 404 of the Clean Water Act, discharge of fill material to waters of the United States must be performed in conformance with a permit obtained from the U.S. Army Corps of Engineers (Corps) prior to commencement of the fill activity. Under Section 401 of the Clean Water Act, the state must certify that any permit issued by the Corps pursuant to Section 404 will comply with water quality standards established by the state (e.g., Basin Plans or statewide plans), or can deny such certification, with or without prejudice. In California, the State and Regional Water Boards are charged with implementing Section 401. California's Section 401 regulations are at Title 23, CCR, Division 3, Chap 28, Sections 3830-3869. Pursuant to these regulations, the Water Board and/or the Water Board's Executive Officer have the authority to issue or deny Section 401 water quality certification. The certification may be issued with or without conditions to protect water quality.

The Water Board has independent authority under the Water Code to regulate discharges of waste to wetlands (waters of the state) that would adversely affect the beneficial uses of those wetlands through waste discharge requirements or other orders. The Water Board may choose to exercise its independent authority under the Water Code in situations where there is a conflict between the state and the Corps, such as over a jurisdictional determination or in instances where the Corps may not have jurisdiction. In situations where there is a conflict between the state and the Corps, such as over a jurisdictional determination or in instances where the Corps may not have jurisdiction, the Water Board may choose to exercise its independent authority under the Water Code.

The regulation of "isolated" waters determined not to be waters of the U.S. is one such instance where the Corps does not have jurisdiction. The U. S. Supreme Court, in its 2001 decision in Solid Waste Agency of Northern Cook County v. U. S. Army Corps of Engineers (the "SWANCC decision") determined that certain isolated, non-navigable waters are not waters of the U.S., but are the province of the states to regulate. The Water Code provides the State and Regional Water Boards clear authority to regulate such isolated, non-navigable waters of the state, including wetlands. To address the impacts of the SWANCC decision on the waters of the state, the State Water Board issued Order No. 2004-0004-DWQ in 2004, General WDRs for dredged or fill discharges to waters deemed by the Corps to be outside of federal jurisdiction. It is the intent of these General WDRs to regulate a subset of the discharges that have been determined not to fall within federal jurisdiction, particularly those projects involving impacts to small acreage or linear feet and those involving a small volume of dredged material.

Order No. 2004-004-DWQ does not address all instances where the Water Board may need to exercise its independent authority under the Water Code. In such instances, dischargers and/or

affected parties will be notified with 60 days of the Water Board's determination and be required to file a report of waste discharge.

For proposed fill activities deemed to require mitigation, the Water Board will require the applicant to locate the mitigation project within the same section of the Region, wherever feasible. The Water Board will evaluate both the project and the proposed mitigation together to ensure that there will be no net loss of wetland acreage and no net loss of wetland functions. The Water Board may consider such sources as the Habitat Goals reports, the Estuary Project's Comprehensive Conservation and Management Plan, or other approved watershed management plans when determining appropriate "out-of-kind" mitigation.

The Water Board uses the U.S. EPA's Section 404(b)(1), "Guidelines for Specification of Disposal Sites for Dredge or Fill Material," dated December 24, 1980, which is incorporated by reference into this plan, in determining the circumstances under which wetlands filling may be permitted.

In general, it is preferable to avoid wetland disturbance. When this is not possible, disturbance should be minimized. Mitigation for lost wetland acreage and functions through restoration or creation should only be considered after disturbance has been minimized.

Complete mitigation projects should be assessed using established wetland compliance and ecological assessment methods, such as the Wetland Ecological Assessment (WEA) and the California Rapid Assessment Method (CRAM).

4.24 OIL SPILLS

Oil spills can cause severe and extensive damage to the environment. Fortunately, the petroleum industry has been improving its safety record in oil transfer operations - the step in petroleum handling where spills are most likely to occur. The volume of oil spilled during transfer operations has decreased since 1975.

This improvement is due to:

- U.S. Coast Guard regulations for oil transfer operations;
- State Lands Commission guidelines for petroleum facility operations manuals;
- High clean-up costs and public concern associated with oil spills; and
- Water Board, California Department of Fish and Game, and U.S. Coast Guard enforcement actions against parties responsible for spills.

The Water Board considered adopting a policy requiring specific improvements in oil transfer operations, but due to the industry's improved performance, the Water Board is holding the adoption of such a policy in abeyance while continuing to monitor the industry's performance. The Water Board recognizes that additional regulation is unnecessary if the petroleum industry maintains its improved record.

4.25 GROUNDWATER PROTECTION AND MANAGEMENT

Per State Water Board Resolution No. 88-63, almost all the Region's groundwater is considered to be an existing or a potential source of drinking water. With limited resources, the Water Board must concentrate its groundwater protection and management efforts on the most important groundwater basins. DWR has identified 28 individual groundwater basins and seven sub-basins in the Region that serve, or could serve, as sources of high quality drinking water.

Increased demands on these groundwater resources have become evident in the rapidly developing Region. Years of drought and decades of discoveries of groundwater pollution have resulted in impacts or impairment to portions of these basins. Some municipal, domestic, industrial, and agricultural supply wells have been taken out of service due to the presence of pollution. Some of the basins have also been affected by over-pumping, resulting in land subsidence and saltwater intrusion.

Such pressures on groundwater resources require that comprehensive environmental planning and management practices be developed and implemented for each individual basin by all concerned and affected parties. The Water Board will foster this concept with the following groundwater protection and management goals for the Region.

1) Identify and update beneficial uses and water quality objectives for each groundwater basin.

Water quality objectives must maintain the existing high quality of groundwater, protect its beneficial uses, and protect human health and the environment. The Water Board's program to identify and update objectives is described in Section 4.25.1 Application of Water Quality Objectives.

2) Regulate activities that impact or have the potential to impact the beneficial uses of groundwater of the Region.

Federal, state, and local groundwater protection and remediation programs that will result in the overall maintenance or improvement of groundwater quality must be implemented Region-wide in a consistent manner. When a potential threat or problem is discovered, containment and clean-up efforts must be undertaken as quickly as possible to limit groundwater pollution. Where activities that could affect the beneficial uses of groundwater are not regulated by other federal, state, or local programs, the Water Board will consider regulation depending upon the threat to beneficial uses and availability of Water Board resources. The overall requirements for site cleanup and closure, setting cleanup levels, and future groundwater management strategies are described in Section 4.25.2 Requirements for Site Investigation, Cleanup and Site Closure. The Water Board's programs for cleanup of polluted sites are described in Section 4.25.3 Regulation of Potential Pollution Sources.

3) Prevent future impacts to the groundwater resource through local and regional planning, management, education, and monitoring.

Groundwater is an integral component of a watershed's hydrologic system. A comprehensive watershed management approach is necessary to protect groundwater resources. The Water

Board's program for broadening its information base on groundwater resources and individual protection needs of basins is described in Section 4.25.4 Groundwater Protection Programs. Groundwater monitoring efforts by state and local agencies are described in Chapter 6 Surveillance and Monitoring.

Local water, fire, planning and health departments are actively involved with their own groundwater protection programs. These programs include: salt water intrusion and land subsidence control, wellhead protection, groundwater recharge area preservation, hazardous material storage and management ordinances, Local Oversight Programs and non-Local Oversight Programs for cleanup of leaking underground fuel tanks, potential conduit well destruction, and well permitting and inspection. For some agencies, maintaining funding for protection programs is an ongoing challenge. Through numerous regional projects, the Water Board is evaluating the groundwater protection needs in specific basins, and thus will provide additional support for local agency efforts.

4.25.1 APPLICATION OF WATER QUALITY OBJECTIVES

Water quality objectives apply to all groundwater, rather than at a wellhead or at a point of consumption. The maintenance of the existing high quality of groundwater (i.e., "background") is the primary objective, which defines the lowest concentration limit that the Water Board requires for groundwater protection. The Water Board also has narrative and numeric water quality objectives for bacteria, chemical constituents, radioactivity, and taste and odor (see Chapter 3). These objectives define the upper concentration limit that the Water Board considers protective of beneficial uses. The lower and upper concentration limits define the range that the Water Board considers for clean-up levels of polluted groundwater. Establishment of cleanup levels is discussed in Section 4.25.2 Requirements for Site Investigation, Cleanup and Site Closure.

Numerical limits that implement all applicable water quality objectives include Maximum Contaminant Levels (MCLs) and Secondary Maximum Contaminant Levels (SMCLs), and are only acceptable as the upper end of a concentration range to protect the beneficial uses of municipal and domestic drinking water sources.

Ideally, the Water Board would establish numerical groundwater objectives for all constituents. However, the Water Board is limited in its ability and resources to independently establish numerical objectives for groundwater. To evaluate compliance with water quality objectives, the Water Board will consider all relevant and scientifically valid evidence, including relevant and scientifically valid numerical criteria and guidelines developed and/or published by other agencies and organizations (e.g., State Water Board, U.S. EPA, DHS, Cal/EPA's Office of Environmental Health Hazard Assessment (OEHHA), Cal/EPA's Department of Toxic Substances Control (DTSC), etc.) to provide the numerical criteria for Water Board consideration as groundwater objectives.

The Central Valley Water Board summarized water quality standards and criteria from a variety of sources in “A Compilation of Water Quality Goals”. This report contains an extensive compendium of numerical water quality limits from the literature for over 800 chemical constituents and water quality parameters.

In practice, the Water Board uses water quality objectives for groundwater somewhat differently from those for surface water. For groundwater, the Water Board's emphasis is the regulation of sites where water quality objectives are not being met, clean-up is required and/or under way, and no further waste discharges will be allowed in the future. In contrast, surface water discharges regulated by the Water Board are usually for ongoing discharges regulated to meet water quality objectives in receiving waters.

In a typical situation, the Water Board must identify and establish site- and basin-specific groundwater beneficial uses and standards for the cleanup of groundwater polluted by numerous and extensive spills and leaks of toxic chemicals (e.g., organic solvents, fuels, metals, etc.).

Very few waste discharges to land are allowed by the Water Board and those that are permitted (e.g., landfills, industrial waste disposal, above-ground soil treatment, etc.) are closely regulated under the requirements of existing laws and regulations in order to maintain and protect groundwater quality objectives. An additional category of discharges to land is the numerous individual domestic waste disposal systems (e.g., onsite dispersal systems) that are permitted and regulated by the counties. The Water Board waives regulation based upon the fact that the counties' regulation of the systems complies with applicable Water Board requirements.

Groundwater objectives for individual basins may be developed in the future. As the Water Board completes projects that provide more detailed delineation of beneficial uses within basins, revised objectives may be developed for portions of groundwater basins that have unique protection needs. Examples of Water Board projects completed in the Region are described in "Section 4.25.5 Groundwater Protection Studies."

4.25.2 REQUIREMENTS FOR SITE INVESTIGATION, CLEANUP AND SITE CLOSURE

This section describes the regulatory requirements and their applications for investigation, cleanup, and closure at sites impacted by soil and groundwater pollution.

4.25.2.1 STATE WATER BOARD POLICIES FOR GROUNDWATER CLEANUP

ANTIDEGRADATION POLICY

The "Statement of Policy with Respect to Maintaining High Quality of Waters in California," known as the Antidegradation Policy (State Water Board Resolution No. 68-16), requires the continued maintenance of existing high quality waters. It provides conditions under which a change in water quality is allowable. A change must:

- Be consistent with maximum benefit to the people of the state;
- Not unreasonably affect present and anticipated beneficial uses of water; and
- Not result in water quality less than that prescribed in water quality control plans or policies.

However, in cases where unauthorized releases have polluted groundwater, restoring groundwater quality to background concentrations is often technically impractical. In those situations, groundwater should be restored to attain applicable beneficial uses.

SOURCES OF DRINKING WATER POLICY

This policy, adopted by the State Water Board in 1988 (Resolution No. 88-63), established state policy that all surface and ground water in the state are considered suitable, or potentially suitable, for municipal or domestic supply (MUN) and should be designated for this use, with certain exceptions. The exceptions for groundwater are:

- The groundwater's TDS exceeds 3,000 mg/L (5,000 microSiemens per centimeter (μS/cm), electrical conductivity), and it is not reasonably expected by the Water Boards to supply a public water system; or
- There is contamination, either by natural processes or by human activity (unrelated to the specific pollution incident), that cannot reasonably be treated for domestic use through implementation of BMPs or best economically achievable treatment practices; or
- The water source does not provide sufficient water to supply a single well capable of producing an average, sustained yield of 200 gallons per day; or
- The aquifer is regulated as a geothermal energy-producing source or has been exempted administratively pursuant to 40 Code of Federal Regulations (CFR), Section 146.4 for the purpose of underground injection of fluids associated with the production of hydrocarbon or geothermal energy, provided that these fluids do not constitute a hazardous waste under 40 CFR, Section 261.3.

POLICIES AND PROCEDURES FOR INVESTIGATION AND CLEANUP AND ABATEMENT OF DISCHARGES

State Water Board Resolution No. 92-49, "Policies and Procedures for Investigation, Cleanup and Abatement of Discharges Under Water Code Section 13304" contains the policies and procedures that all Water Boards shall follow to oversee and regulate investigations and cleanup and abatement activities resulting from all types of discharge or threat of discharge subject to Water Code Section 13304. Therefore, the five program areas described below follow the same policies and procedures outlined in Resolution No. 92-49 for determining:

- When an investigation is required;
- The scope of phased investigations necessary to define the nature and extent of contamination or pollution;
- Cost-effective procedures to detect, cleanup or abate contamination; and
- Reasonable schedules for investigation, cleanup, abatement, or any other remedial action at a site.

State Water Board Resolution No. 92-49 requires that the Water Board ensure that the discharger is aware of and considers minimum cleanup and abatement methods. The minimum methods that the discharger should be aware of and consider, to the extent that they may be applicable to the discharge or threat thereof, are:

- Source removal and/or isolation;
- In-place treatment of soil or water, including bioremediation, aeration, and fixation;
- Excavation or extraction of soil, water, or gas for on-site or off-site treatment techniques including bioremediation; thermal destruction; aeration; sorption; precipitation, flocculation and sedimentation; filtration; fixation; and evaporation; and,
- Excavation or extraction of soil, water, or gas for appropriate recycling, reuse, or disposal.

State Water Board Resolution No. 92-49 was amended in 1996 with Resolution No. 96-79, Containment Zone Policy. Per the revised resolution, it is not the intent of the State Water Board or the Regional Water Boards to allow dischargers, whose actions have caused, permitted, or threaten to cause or permit conditions of pollution, to avoid responsibilities for cleanup. However, in some cases, attainment of applicable water quality objectives for groundwater cannot reasonably be achieved. In these cases, the State Water Board determines that establishment of a containment zone is appropriate and consistent with the maximum benefit to the people of the state if applicable requirements contained in the policy are satisfied.

STATE WATER BOARD DECISIONS

In addition to State Water Board policies that specify requirements for investigation and cleanup of groundwater, State Water Board precedential orders on petitions provide guidance and direction to the nine Regional Water Boards with respect to cleanup orders. State Water Board decisions affecting site cleanup fall into three general categories: naming responsible parties, setting cleanup standards, and closing low-risk cases.

4.25.2.2 ELEMENTS OF GROUNDWATER CLEANUP AND SITE CLOSURE

State Water Board Resolution No. 92-49 outlines the five basic elements of a site investigation. Any or all elements of an investigation may proceed concurrently, rather than sequentially, in order to expedite cleanup and abatement of a discharge, provided that the overall cleanup goals and abatement are not compromised. State Water Board Resolution No. 92-49 investigation components are as follows:

Preliminary site assessment to confirm the discharge and the identity of the dischargers; to identify affected or threatened waters of the state and their beneficial uses; and to develop preliminary information on the nature and vertical and horizontal extent, of the discharge;
Soil and water investigation to determine the source, nature, and extent of the discharge with sufficient detail to provide the basis for decisions regarding subsequent clean-up and abatement actions, if any are determined by the Regional Water Board to be necessary;
Proposal and selection of clean-up action to evaluate feasible and effective cleanup and abatement actions and to develop preferred clean-up and abatement alternatives;
Implementation of clean-up and abatement action to implement the selected alternative and to monitor in order to verify progress; and
Monitoring to confirm short- and long-term effectiveness of cleanup and abatement.

The following additional requirements for site cleanup and closure may also apply, as described below.

"Cleanup Complete" Determinations – The Water Board provides no further action (NFA) confirmations and no-further-active-cleanup confirmations to responsible parties when no further active cleanup is needed. For petroleum-impacted sites, the Water Board provides a case closure letter as part of the case closure summary report.

Public Participation – The Water Board will provide opportunities for public participation in the oversight process so that the public is informed and has the opportunity to comment. The level of effort is tailored to site-specific conditions, depending on site complexity and public interest. The level of public participation effort at a particular site is based on the potential threat to human health, water quality, and the environment; the degree of public concern or interest in site cleanup; and any environmental justice factors associated with the site.

Electronic Data Reporting – The State Water Board maintains a web-based geographic information system (GIS) program that provides the public and regulators with online access to environmental data. The State Water Board adopted regulations that require electronic submittal of information for groundwater cleanup programs (Title 23, CCR, Division 3, Chapter 30). For several years, parties responsible for cleanup of leaking underground fuel tanks (LUFT) have been required to submit groundwater analytical data, the surveyed locations of monitoring wells, and certain other data to the State Water Board database over the Internet. As of 2005, all groundwater cleanup programs are required to submit these items as well as a portable data format (PDF) copy of reports.

Compliance Monitoring – Monitoring reports are required periodically that describe the status of the cleanup activities and monitoring results. The Water Board will conduct site inspections to ensure the responsible party is complying with Water Board enforcement directives.

Deed Restriction - A deed restriction (land use covenant) may be required to facilitate the remediation of past environmental contamination and to protect human health and the environment by reducing the risk of exposure to residual hazardous materials. Water Code Section 13307.1 requires that deed restrictions be mandated for sites that are not cleaned up to "unrestricted use", and that the restrictions be recorded and run with the land to prohibit sensitive uses such as homes, schools, or day care facilities. Underground storage tank (UST) sites are exempted from this requirement because of the sheer numbers and the small size of most of these sites. Site conditions are tracked in the statewide database developed by the State Water Board (Section 4.25.2.2 Electronic Data Reporting).

Liability Relief Tools – Several tools are available to municipalities, landowners, developers and responsible parties for seeking relief from contamination liability. The Polanco Act, California Land Environmental Restoration and Reuse Act, and California Land Reuse and Revitalization Act provide liability relief and help redevelopment agencies, cities and counties to guide and pursue redevelopment of Brownfield sites (Section 4.25.3.1 Brownfields).

4.25.2.3 SETTING CLEANUP LEVELS

The Water Board approves soil and groundwater clean-up levels for polluted sites. Per State Board Resolution No. 92-49, the basis for Water Board decisions regarding investigation, and cleanup and abatement includes: (1) site-specific characteristics; (2) applicable state and federal

statutes and regulations; (3) applicable water quality control plans adopted by the State and Regional Water Boards, including beneficial uses, water quality objectives, and implementation plans; (4) State and Regional Water Board policies, including State Water Board Resolutions No. 68-16 (Antidegradation Policy) and No. 88-63 (Sources of Drinking Water Policy); and (5) relevant standards, criteria, and advisories adopted by other state and federal agencies.

State Water Board Resolution No. 92-49 directs the Regional Water Boards to ensure that dischargers are required to cleanup and abate the effect of discharges. This cleanup and abatement shall be done in a manner that promotes attainment of either background water quality, or the best water quality that is reasonable if background levels of water quality cannot be restored, considering all demands being made and to be made on those waters and the total values involved: beneficial and detrimental, economic and social, tangible and intangible. Any alternative cleanup levels less stringent than background shall:

- Be consistent with maximum benefit to the people of the state;
- Not unreasonably affect present and anticipated beneficial uses of such water; and
- Not result in water quality less than that prescribed in the Water Quality Control Plans and Policies adopted by the State and Regional Water Boards.

GROUNDWATER CLEAN-UP LEVELS

The overall clean-up level established for a waterbody is based upon the most sensitive beneficial use identified. In all cases, the Water Board first considers high quality or naturally occurring "background" concentration objectives as the clean-up levels for polluted groundwater and the factors listed above under "Setting Cleanup Levels." For groundwaters with a beneficial use of municipal and domestic supply, cleanup levels are set no higher than:

- MCLs or adopted SMCLs, whichever is more restrictive, or
- A more stringent level (i.e., below MCLs) based upon a site-specific risk assessment. Clean-up levels must be set to maintain the excess upperbound lifetime cancer risk to an individual of less than 1 in 10,000 (10^{-4}) or a cumulative toxicological effect as measured by the Hazard Index of less than one. For all sites performing risk assessments, an alternative with an excess cancer risk of 1 in 1,000,000 (10^{-6}) or less must also be considered.

The Water Board determines excess cancer risks and the Hazard Index following the procedures described in the U.S. EPA's Risk Assessment Guidance for Superfund, Volume I, Parts A dated August 1989, B dated December 1991, and C dated December 1991, which are incorporated by reference into this plan. The Water Board may modify the U.S. EPA's approach based on OEHHA's guidelines or more current site- or pollutant-specific information.

Groundwater clean-up levels are approved on a case-by-case basis by the Water Board. The Executive Officer or a local agency may approve clean-up levels as appropriately established by the Water Board. Proposed final clean-up levels are based on a discharger-developed feasibility study of clean-up alternatives that compares effectiveness, cost, time to achieve clean-up standards, and a risk assessment to determine impacts on beneficial uses, human health, and the environment. Clean-up levels must also take into account the mobility, toxicity, and volume of

pollutants. Feasibility studies of cleanup alternatives may include the guidance provided by Subpart E of the National Oil and Hazardous Substances Pollution Contingency Plan (40 CFR 300); Section 25356.1(c) of the California Health and Safety Code; CERCLA; the State Water Board's Resolutions Nos. 68-16 and 92-49; and the Water Board Resolution No. 88-160.

SOIL CLEANUP LEVELS

Soil pollution can present a health risk and a threat to water quality. The Water Board sets soil clean-up levels for the unsaturated zone based on these threats. Guidance from the U.S. EPA, DTSC, and OEHHA are considered when determining cleanup levels. Cleanup levels must be protective of human health for existing and likely future land use based on properly adopted land use designations in general plans, zoning, and other mechanisms. In addition, if it is unreasonable to cleanup soils to background concentration levels, the Water Board may:

- Allow residual pollutants to remain in soil at concentrations such that:

Any residual mobile constituents generated would not cause groundwater to exceed applicable groundwater quality objectives, and
Health risks from surface or subsurface exposure are within acceptable guidelines.

- Require follow-up groundwater monitoring to verify that groundwater is not polluted by chemicals remaining in the soil. Follow-up groundwater monitoring may not be required where residual soil pollutants are not expected to impact groundwater.
- Require measures to ensure that soils with residual pollutants are covered and managed to minimize pollution of surface waters and/or exposure to the public.
- Implement applicable provisions of CCR Title 27 where significant amounts of wastes remain on-site. This may include, but is not limited to, subsurface barriers, pollutant immobilization, toxicity reduction, and financial assurances.

In order for a discharger to make site-specific recommendations for soil clean-up levels above background, the fate and transport of leachate can be modeled by the discharger using site-specific factors and appropriate models. Assumptions for minimal leachate dilution, as proposed by the discharger, may be considered by the Water Board if deemed reasonable.

4.25.3 PROGRAM AREAS

Sites with identified pollution problems are managed through five program areas: (1) Spills, Leaks, Investigations, and Cleanups (SLIC) Program; (2) UST Program; (3) Landfill Program, (4) Department of Defense/Department of Energy (DoD/DoE) Program and (5) Above-ground Petroleum Storage Tank Program. Requirements for site investigation and remediation of groundwater under these programs are described in Section 4.25.2 Requirements for Site Investigation, Cleanup, and Site Closure.

4.25.3.1 SPILLS, LEAKS, INVESTIGATION, AND CLEANUP PROGRAM (SLIC)

The SLIC program focuses on unauthorized releases of pollutants to soil, surface water, and groundwater. Sites that are managed within the SLIC program include sites with pollution from recent or historical surface spills, subsurface releases (e.g., pipelines, sumps, etc.), and all other unauthorized discharges that pollute or threaten to pollute surface or groundwater. The SLIC program also includes groundwater cleanup at Brownfields, refineries, and other large industrial

facilities. There is some overlap with the UST program as many SLIC cases also have leaking underground tanks.

The Water Board identified many historical releases in the 1980s. New releases are identified through discharger reports, complaints to the Water Board, the Water Board's own surveillance, "due diligence" reports for proposed property transfer or redevelopment, and local agency reports.

There are variety of different pollutants at SLIC sites, including chlorinated solvents, fuels and non-chlorinated solvents, SVOCs, inorganic constituents and metals, polychlorinated biphenols (PCBs), and pesticides. Persistent and mobile constituents, such as chlorinated solvents, tend to cause more serious pollution problems, while immobile constituents, such as metals, and biodegradable constituents, such as fuels, tend to be less serious. Two other factors can increase case complexity: multiple dischargers on a site (such as a current owner, past owner, and past operator) and commingled groundwater plumes, where contaminants from two or more source sites have merged. In both cases, dischargers may argue against being named in cleanup orders or may demand that other parties be named as well.

The Water Code provides authority for the Water Board to require investigation and cleanup of sites with unauthorized pollutant releases. Water Code Section 13267 allows the Water Board to require technical reports from suspected dischargers. Water Code Section 13304 authorizes the Water Board to issue "cleanup and abatement" orders requiring a discharger to cleanup and abate waste, "where the discharger has caused or permitted waste to be discharged or deposited where it is or probably will be discharged into waters of the State and creates or threatens to create a condition of pollution or nuisance." The Water Board coined the term "site cleanup requirements" (SCRs) to describe Water Code Section 13304 orders where soil or groundwater cleanup would take many years to complete and the dischargers are cooperating.

The Water Board also complies with any requirements in the state Health and Safety Code and the federal Superfund law for authority at federal Superfund sites where the Water Board is the lead agency.

SLIC COST RECOVERY PROGRAM

Water Code Section 13304 authorizes the Regional Water Boards to recover costs for oversight of site cleanup at sites where a discharge of waste has occurred and that discharge creates, or threatens to create, a condition of pollution or nuisance. The Water Board was instrumental in establishing the State Water Board's SLIC cost recovery program. Cost recovery was initially established in the early 1990s with the agreement of Bay Area petroleum refineries to reimburse the state for oversight of groundwater and soil remediation. Shortly thereafter the State Water Board organized a pilot program to expand the cost recovery program to other SLIC sites. During this period the legislature amended this section of the Water Code to strengthen the ability of the Regional Water Boards to recover staff oversight costs.

In 1993, the State Water Board established a unified SLIC cost recovery program. Program funding came initially from the General Fund but later switched to the State Water Board's Cleanup and Abatement Account (revolving fund mechanism). The net cost of this program to

the state is a small fraction of this amount because dischargers repay almost all of the staff oversight costs.

In general, SLIC sites should be enrolled in the SLIC cost recovery program because there is very limited program funding for oversight of non-cost recovery sites. Exceptions include de minimus sites (e.g., sites where oversight can be completed with minimal staff effort), and under special circumstances (e.g., sites with significant potential threat to human health or water quality where there are limited funds available for remedial action).

FEDERAL SITES

Superfund Sites – The federal Superfund program was created in 1980 when Congress enacted CERCLA, known as Superfund. CERCLA was amended in 1986 with the Superfund Amendments and Reauthorization Act (SARA). The Water Board is the lead regulatory oversight agency for 16 federal Superfund sites in the South Bay. The Superfund program was designed to address the most seriously contaminated hazardous waste sites in the country. The Water Board previously had a U.S. EPA grant to oversee the 16 federal Superfund sites. Currently the sites are all enrolled in the Water Board's cost recovery program and are managed similar to SLIC cases while still ensuring that U.S. EPA's requirements, as defined in the National Contingency Plan, are met. The Water Board has adopted final SCRs for all 16 sites, and all 16 sites have implemented long-term remediation projects.

RCRA Sites – Six sites originally proposed as federal Superfund sites were subsequently dropped because cleanup could be required under Resource Conservation and Recovery Act (RCRA). As with the Superfund sites, the Water Board has adopted final SCRs for all sites in compliance with RCRA requirements, and all six sites have implemented long-term remediation projects. There are also about 20 RCRA "analogous" sites. These are sites where Water Board oversight has included extra steps to assure that oversight is analogous to the state and federal RCRA requirements. The Water Board has adopted SCRs for all "analogous" sites, and most have implemented long-term remediation.

BROWNFIELDS

The Water Board is one of several agencies with a role in the Brownfield cleanup and redevelopment process. Brownfields are properties that are contaminated, or thought to be contaminated, and are underutilized due to perceived remediation costs and liability concerns. The Water Board directly oversees investigation and cleanup at Brownfield sites. Other stakeholders in the process include: local redevelopment agencies (who designate redevelopment areas and often acquire and assist in redevelop of Brownfield sites), local governments (who must approve redevelopment proposals), developers and non-profits (who make redevelopment proposals), lenders, and community members.

BROWNFIELD REGULATIONS

There are several key federal and state environmental laws that have fostered Brownfield development, as described below.

Federal Legislation

The Small Business Liability Relief and Brownfields Revitalization Act (Brownfield Law) signed into law in 2002 contains three subtitles dealing with funding and liability for assessing and cleaning up contaminated properties. Subtitle A codified and expanded U.S. EPA's current Brownfield program by authorizing funding for assessment and cleanup of Brownfield sites. Subtitle B exempted contiguous property owners and prospective purchasers from Superfund liability, and clarified the extent of appropriate environmental inquiry for innocent landowners. "Innocent landowners" are those who hold property with contamination on it, but did not contribute to the pollution. Subtitle C authorized funding for State response programs and limited U.S. EPA's Superfund enforcement authority at sites cleaned up under a State response program.

This law is important because it provides liability relief for innocent landowners and purchasers as long as they meet certain requirements. Many redevelopment deals have stalled previously because there was no clear-cut mechanism for providing liability relief to innocent purchasers who were willing to perform the cleanup, but unwilling to take on the long-term liability associated with the site.

State Legislation

The Polanco Redevelopment Act of 1990 (Polanco) outlines the processes for redevelopment agencies to follow when cleaning up a hazardous substance release in a redevelopment project area. It also provides immunity from liability for redevelopment agencies and subsequent property purchasers for sites cleaned up under a plan approved by the Water Board (or DTSC). The Polanco process has become a widely used tool by redevelopment agencies to guide and pursue redevelopment of Brownfields. Redevelopment agencies requesting approval of their cleanup plans under the provisions of Polanco are required to reimburse oversight costs to the agencies.

The California Land Environmental Restoration and Reuse Act of 2001 was enacted to enable cities and counties to direct or conduct investigation and remediation at Brownfield sites that are outside of redevelopment areas to help return Brownfields to productive uses. It requires Cal/EPA to provide a variety of data related to Brownfield cleanups, and to develop a set of screening values for hazardous substances commonly found at Brownfield sites. A centerpiece of the legislation was its requirement that Cal/EPA develop statewide screening levels, based on environmental screening levels developed at this Water Board (Section 4.25.2.3 Setting Cleanup Levels).

The California Land Reuse and Revitalization Act of 2004 (CLRRA) is intended to bring California into conformity with the federal statutes concerning liability relief for innocent landowners, perspective (bona fide) purchasers, and contiguous property owners in urban areas. It allows for risk-based cleanups at Brownfield sites. Participants who seek immunity must enter into an agreement with the agency that includes the preparation and implementation of a site assessment plan, and if necessary, a response plan. A certificate of completion is issued upon determining that all response actions have been completed in accordance with the agency approval process.

BROWNFIELD GRANTS AND LIABILITY RELIEF TOOLS

Brownfield Grants

The U.S. EPA provides two types of Brownfield grants to states for the purpose of promoting Brownfield redevelopment, and to local agencies and non-profits to jump-start specific Brownfield redevelopment projects. The Water Board has worked closely with several cities in the Region to encourage Brownfield site cleanup and redevelopment, including writing letters of support for project-specific U.S. EPA grants. Between 1996 and 2005, U.S. EPA has awarded Brownfield grants totaling $9 million within the Region. The City of Oakland alone has received over $2 million in grants. Other recipient jurisdictions include: Emeryville, East Palo Alto, Richmond, San Francisco, Livermore, Alameda County, Contra Costa County, San Pablo, Petaluma, San Jose, and Union City.

Cal/EPA's Brownfield Initiative

In 2004, Cal/EPA announced a Brownfield initiative aimed at improving the way Cal/EPA agencies coordinate their regulatory activities at Brownfield sites. The initiative includes an ambitious implementation plan to:

- Foster partnerships with Brownfield stakeholders;
- Develop an inventory of Brownfield sites in California;
- Provide liability relief to Brownfield owners and buyers; and
- Pursue necessary funding and resources for Brownfield cleanup.

The initiative also directed the State Water Board, Regional Water Boards, and DTSC to complete a MOA. The MOA was signed in 2005 and contains the following elements:

- Limit oversight to a single lead agency at any given site;
- Establish procedures for identifying the appropriate lead agency;
- Establish a uniform site assessment procedure to be used by both agencies;
- Require that cleanups address the issues and concerns of both agencies;
- Allow the lead agency to gain the advice and expertise of the other agency as appropriate;
- Ensure ample opportunities for public input and involvement;
- Establish target timeframes for completing investigation and cleanup; and
- Establish regular coordinating meetings.

California State Liability Relief Tools

Several tools are available to municipalities, landowners, developers and responsible parties for seeking relief from contamination liability. Polanco, the California Land Environmental Restoration and Reuse Act, and CLLRA provide liability relief and help redevelopment agencies, cities and counties to guide and pursue redevelopment of Brownfields. Prospective purchaser agreements (PPA) are agreements to protect purchasers from being named as a discharger for pre-existing pollution. The buyer must provide something in return, such as an agreement to provide reasonable access for site cleanup and monitoring.

The Water Board may issue “comfort letters” to buyers of polluted property or owners of off-site properties affected by migrating groundwater pollution to mollify buyers or lenders about the potential liability they face. Letters to offsite owners typically promise not to enforce against them as long as they provide reasonable access. Letters to onsite buyers typically promise not to enforce against them as long as they provide reasonable access and the current responsible parties continue to perform necessary cleanup work.

4.25.3.2 UNDERGROUND STORAGE TANK PROGRAM

A UST is defined by law as "any one or combination of tanks, including pipes connected thereto, that is used for the storage of hazardous substances and that is substantially or totally beneath the surface of the ground" (certain exceptions apply). The purpose of the UST Program is to protect public health and safety and the environment from releases of petroleum and other hazardous substances from tanks. State regulations regarding underground tank construction, monitoring, repair, closure, release reporting, and corrective action are contained within CCR Title 23, Chapter 16.

Implementation of the UST Program is unique, as the Health and Safety Code Division 20, Chapters 6.7 and 6.75, gives local agencies the authority to oversee investigation and cleanup of UST leak sites. The Corrective Action regulations (CCR, Title 23, Chapter 16, Article 11) use the term "regulatory agency" in recognition of the fact that local agencies have the option to oversee site investigation and cleanup, in addition to their statutory mandate to oversee leak reporting and tank closure.

Some local agencies also provide oversight for underground fuel storage tank cases under a Local Oversight Program (LOP) contract with the State Water Board. Most oversight charges are billed to responsible parties. Some LOPs, known as Local Implementing Agencies (LIAs), have independent authority under UST laws to require investigations and cleanup. The Water Board still retains its Water Code authority to approve case closure. However, the Water Board has authorized a few local agencies to close fuel leak cases where groundwater has not been polluted, and future groundwater impacts are not expected.

Additionally, a few other local agencies have funded their own (non-LOP) oversight programs and have developed guidance documents based upon State and Regional Water Board guidance. In many areas throughout the Region the local agency has opted not to assume the lead position for fuel leak cases. Consequently, the Water Board is the lead agency for fuel leak sites in those areas.

CASE DETERMINATION

Certified Unified Permitting Agencies (CUPAs) permit and regulate UST operations including leak prevention and inspections. When a release occurs, the Water Board is generally notified of the release via a copy of an Unauthorized Release Form (URF). This form is tailored so as its notification hierarchy complies with Proposition 65 notification requirements.

If the release is fuel based, and the CUPA happens to also be an LOP agency or an agency that has an agreement with the Water Board for fuel UST cleanup oversight, it will oversee cleanup

operations from that point. All of this Region's LOP agencies are part of a CUPA. The same holds true in the case of our LIA agencies, with the exception of the Alameda County Water District (ACWD).

If the release is solvent based, the Water Board will provide oversight for cleanup. Exceptions may be found for those situations for which DTSC is the lead agency because the tank is on a site that is under DTSC lead, such as the solvent UST being located within a RCRA site, or by mutual agency agreement.

WATER BOARD LEAD UST SITES

The Water Board oversees cases for all of Contra Costa County, Marin County, and various cases within the LOP and LIA jurisdictions.

The Water Board having the lead in UST cases is the result of one or more of the following: 1) solvents or solvents commingled with fuels are the pollutant of concern; 2) the petroleum discharge is from something other than a UST under the Local Oversight Program or not necessarily under UST regulation such as sumps, spills, or agricultural tanks; 3) complex technical or policy issues; 4) conflict of interest issues in which the local agency is the responsible party, there is inappropriate political pressure on the case, or for which the agency requests Water Board lead; 5) cases given to the Water Board as part of the Site Designation Process (AB 2061); 6) the local agency is unable, unwilling, and/or unavailable to provide proper oversight; 7) part of the site is within a larger facility currently under Water Board oversight; and 8) historical precedent.

Local Oversight Program (LOP) Agencies

Although the LOP agency contracts with the State Water Board, the Water Board provides technical guidance and enforcement support as needed. Upon determination by the LOP agency that a case is ready for closure, the LOP agency submits a closure package to Water Board for review. If the Water Board concurs or fails to act within 30 days, the closure is deemed approved and the LOP agency issues the closure letter.

The following agencies are LOPs in the Region, as of 2005:

- Alameda County Health Care Services, Department of Environmental Health
- Napa County Department of Environmental Management
- San Francisco Department of Public Health, Bureau of Environmental Health Management
- San Mateo County Department of Health Services, Office of Environmental Health
- Santa Clara County Department of Environmental Health
- Solano County Department of Environmental Management
- Sonoma County Department of Health Services, Environmental Health Division

Local Implementing Agencies (LIAs)

The Water Board provides technical and enforcement assistance to the LIAs, as necessary. However, these agencies essentially perform the same technical oversight duties (report requests, report review, etc.) that the Water Board would be expected to perform when overseeing case cleanups.

As part of this Region's case closure protocol with the LIA agencies, the Water Board reviews the LIA's case closure recommendation and case closure summary package (although in some cases the Water Board may prepare the summary package for the agency). If the Water Board concurs with the agency's recommendation, the Water Board issues the closure letter.

The following agencies are LIAs in the Region, as of 2005:

- Alameda County Water District
- City of Berkeley Toxics Management Program
- City of Hayward Fire Department
- City of San Leandro

UST PROGRAM BACKGROUND

In 1995, the State Water Board commissioned the Lawrence Livermore National Laboratory (LLNL) and the University of California to conduct a review of the regulatory framework and cleanup process applied to LUFTs. The study titled, "Recommendations to Improve the Cleanup Process for California's Leaking Underground Fuel Tanks (LUFTs)" concluded that fuel hydrocarbons have limited impact on human health, the environment, or California's groundwater resources, and recommended applying a modified ASTM risk-based corrective action (RBCA) process for closing leaking UST sites (ASTM E1739-95, 2002). A risk-based approach to leaking UST cleanups has been widely applied following this recommendation.

In the mid 1990's, methyl tert-butyl ether (MtBE) was recognized as a major threat to groundwater resources. MtBE had been added to gasoline sold in California since 1979 until January 1, 2004, first as an octane booster, and later as an oxygenate comprising up to 11 percent by volume. MtBE prioritization guidelines were developed based on a risk-based approach, and the expedited site assessment has been used to cleanup high threat MtBE sites (Expedited Site Assessment Tools for UST Sites (EPA 510-B-97-001, 1997)).

In 1998, the State Water Board commissioned LLNL to study the impacts of MtBE on groundwater in California. LLNL concluded that MtBE is a frequent and widespread contaminant in shallow groundwater throughout California and that MtBE plumes are more mobile than benzene, toluene, ethylbenzene, and xylenes (BTEX) plumes (An Evaluation of MTBE Impacts to California Groundwater Resources, 1998). Guidelines were developed by the State Water Board for investigation and cleanup of MtBE and other ether-based oxygenates (Guidelines for Investigation and Cleanup of MtBE and Other Ether-Based Oxygenates, 2001).

Since 1998 several studies have been conducted that evaluated the occurrence of MtBE releases at UST sites. These studies indicated that effectiveness of the existing UST leak detection systems has been limited, and that MtBE has impacted the majority of the UST sites (Report on MtBE Monitoring at Operating UST Facilities in Santa Clara County, 2004).

UST CLEANUP FUND

Federal and state laws require every owner and operator of a petroleum UST to maintain financial responsibility to pay for any damages arising from their tank operations. The Barry Keene Underground Storage Tank Cleanup Fund Act of 1989 (Cleanup Fund) was created by the California Legislature, and is administered by the State Water Board, to provide a means for petroleum UST owners and operators to meet the federal and state requirements. The Cleanup Fund also assists a large number of small businesses and individuals by providing reimbursement for unexpected and catastrophic expenses associated with the cleanup of leaking petroleum USTs.

If a leak occurs, responsible parties or their representative must notify the appropriate Water Board or county agency and submit an unauthorized release form (URF). The Cleanup Fund can only reimburse costs after the site investigation and cleanup of the tank release has been reported to the Water Board or county regulatory agency.

4.25.3.3 LANDFILL PROGRAM

Discharges of solid, semisolid, and liquid wastes to landfills, waste piles, surface impoundments, and land treatment facilities can create sources of pollution affecting the quality of waters of the state. Low-concentration liquid waste discharges can be assimilated by receiving waters, if the concentration of pollutants in the waste is regulated (i.e., treated wastewater from municipal or industrial facilities). Conversely, discharges of wastes to waste management units require long-term containment or active treatment in order to prevent waste or waste constituents from migrating to and impairing the beneficial uses of waters of the state. Pollutants from such discharges may continue to affect water quality long after the discharger has stopped discharging new wastes at a site, either because of undetermined releases from the site or because pollutants from the site have accumulated in underlying soils and are migrating to groundwater.

Landfills for disposal of municipal or industrial solid waste (solid waste disposal sites) are the major categories of waste management units located in the Region. The Water Board issues WDRs to ensure that these discharges are properly contained to protect the Region's water resources from degradation and to ensure that the dischargers undertake effective monitoring to verify continued compliance with requirements.

These discharges, and the waste management units at which the wastes are discharged, are subject to concurrent regulation by other state and local agencies responsible for land-use planning, solid waste management, and hazardous waste management. Local enforcement agencies (LEAs) implement the state's solid waste management laws and local ordinances governing the siting, design, and operation of solid waste disposal facilities (usually landfills) with the concurrence of the California Integrated Waste Management Board (CIWMB). The CIWMB also has direct responsibility for review and approval of plans for closure and post-closure maintenance of solid waste landfills. DTSC issues permits for all hazardous waste. The State Water Board, Regional Water Boards, the CIWMB, and DTSC have entered into a Memorandum of Understanding to coordinate their respective roles in the concurrent regulation of these discharges.

Oversight costs for sites in the landfill program at the Water Board and CIWMB are primarily funded through waste discharge permit fees and landfill waste tipping fees.

The Water Board regulates landfills receiving municipal solid wastes (MSW) and facilities receiving classified, nonhazardous, and industrial wastes of various types. Figure 4-6 shows the active and inactive municipal solid waste landfill sites within the Region as of 2005. The Water Board regulates these sites closely, but the required monitoring has revealed water quality problems at some sites that the respective owners or operators are addressing through appropriate remedial measures. As a result of federal laws in the area of hazardous waste regulation, more effort is being devoted to regulation of the onsite treatment, storage, and disposal of hazardous waste.

WASTE REGULATIONS

In 1997, the State revised and strengthened the laws and regulations governing the discharges of both hazardous and nonhazardous solid waste. The primary purpose of the regulations is to: 1) assure the protection of human health and the environment, 2) ensure waste is properly contained or cleaned-up as appropriate, and 3) protect surface water and groundwater from the discharge of waste to land. The primary regulation used by the Water Board in regulating nonhazardous waste treatment, storage, and disposal is the combined State Water Board and CIWMB regulations contained in CCR Title 27, Division 2 of the Solid Waste Regulations, formerly CCR Title 23, Division 3, Chapter 15. Title 27 includes very specific siting, construction, monitoring, and closure requirements for all existing and new nonhazardous waste treatment, storage, and disposal facilities. Title 27 also contains a provision requiring operators to provide assurances of financial responsibility for: landfill closure activities; post closure monitoring and maintenance; and corrective action for landfill releases. Title 27 establishes detailed technical criteria for establishing water quality protection standards, monitoring programs, and corrective action programs for releases from waste management units.

Title 27 defines three types of nonhazardous waste: 1) designated wastes; 2) nonhazardous solid waste; and 3) inert waste, as described below.

Unlike other waste classifications, designated waste is defined in Water Code Section 13173 (and in Title 27) as follows:

"Designated waste," means either of the following:

Hazardous waste that has been granted a variance from hazardous waste management requirements pursuant to Section 25143 of the Health and Safety Code.
Nonhazardous waste that consists of, or contains, pollutants that, under ambient environmental conditions at a waste management unit, could be released in concentrations exceeding applicable water quality objectives or that could reasonably be expected to affect beneficial uses of the waters of the state as contained in the appropriate state water quality control plan.

Title 27 Section 20220 defines nonhazardous solid waste as waste normally associated with domestic, agricultural, and commercial activities. In addition to the regulations under Title 27, landfills that receive nonhazardous solid waste are subject to the State Water Board's special

regulations for municipal solid waste landfills (State Water Board Resolution No. 93-62), which adapt federal municipal solid waste landfill standards to the state's landfill regulation scheme.

Title 27 Section 20230 defines inert waste as that subset of nonhazardous solid waste that does not contain hazardous waste or soluble pollutants at concentrations in excess of applicable water quality objectives, and does not contain significant quantities of decomposable waste. The Water Board regulates inert waste landfills outside of its Title 27 authority and only to the extent necessary to protect water quality from siltation and other indirect effects.

The Water Board regulates discharges of designated waste and nonhazardous solid waste pursuant to the regulations in Title 27; regulates discharges of municipal solid waste pursuant to both the Title 27 regulations and State Water Board Resolution No. 93-62; and regulates discharges of inert wastes only as necessary to protect water quality (e.g., to prevent sediment discharges to surface waters or to assure that such relatively unregulated units receive only inert waste).

Hazardous waste is defined by DTSC in CCR Title 22, Division 4.5, Chapter 11. Disposal of hazardous waste and hazardous waste sites located in the Region are regulated by DTSC.

The Water Board has been regulating nonhazardous solid waste facilities since the mid-1970's, and in some instances since to the early 1950's. Many of the small, older facilities have closed, and waste is now being disposed of at large regional nonhazardous solid waste facilities. The Water Board reviews and revises WDRs at active nonhazardous waste sites, and at closed sites, and assures consistency with the current regulations. These actions include defining the levels of designated wastes (see below), requiring the discharger to establish and operate groundwater monitoring systems capable of identifying whether water quality objectives are being violated, establishing corrective evaluation monitoring (investigation) and corrective action programs where standards are violated, and reviewing and overseeing the development and implementation of facility closure plans. Active landfills are also subject to construction and industrial stormwater NPDES permit requirements (Section 4.14 Urban Runoff Management).

To implement Title 27 at nonhazardous solid waste facilities, the Water Board must define designated wastes. Many wastes which are not hazardous still contain constituents of water quality concern that could become soluble in a nonhazardous solid waste facility and produce leachates and gases that could pose a threat to beneficial uses of state waters. Furthermore, a waste (e.g., salty solids) that might be a designated waste at a landfill that overlies potable water would not be a designated waste at one that overlies groundwater with non-potable water at comparable concentrations (i.e., salty solids are not a threat to salty groundwater).

The criteria for determining if a nonhazardous waste is a designated waste are based on water quality objectives in the vicinity of the site, the containment features of the solid waste facility, and the solubility/mobility of the waste constituents. Therefore, all owners and operators of active nonhazardous municipal solid waste facilities in the Region who wish to receive wastes other than municipal solid waste or inert wastes must propose waste constituent concentration criteria above which wastes will be considered designated waste and therefore, not suitable for disposal at their site. In determining whether a nonhazardous waste is designated waste, the Water Board will consider all relevant and scientifically valid evidence, including relevant and

scientifically valid numerical criteria and guidelines developed and/or published by other sources, such as the Central Valley Water Board's report, "Designated Level Methodology for Waste Classification and Cleanup Level Determination," or an equivalent methodology acceptable to the Executive Officer.

RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)

The state implements federally authorized regulations that are equivalent to those promulgated by the U.S. EPA under Subtitle C of RCRA -- Hazardous Waste Regulations for Treatment, Storage, and Disposal. In 1992, U.S. EPA formally delegated RCRA Subtitle C program implementation authority to DTSC. As described above, regulation of hazardous waste discharges is also included in CCR Title 23, Chapter 15. Chapter 15 monitoring requirements were amended in 1997 to be equivalent to RCRA requirements in regard to the discharge of hazardous waste to land.

The U.S. EPA promulgated federal regulations, as required by Subtitle D of the federal RCRA statute, applicable to municipal solid waste landfills (40 CFR 257 and 258). These regulations are self-implementing. The CIWMB and the State Water Board are jointly responsible for implementing the state program, which the U.S. EPA has approved as being equivalent. The Regional Water Boards implement the water quality aspects of the state program. The LEAs and the CIWMB implement the public health and safety aspects of the state program.

TOXIC PITS CLEANUP ACT

The Toxic Pits Cleanup Act of 1984 (TPCA) required that all impoundments containing liquid hazardous wastes or free liquids containing hazardous waste be retrofitted with a liner/leachate collection system or be dried out by July 1, 1988, and subsequently closed. In 1985, there were 26 sites in the Region with ponds subject to TPCA. As of 2005, one site is permitted to operate its ponds under TPCA's exemption requirement but is not accepting waste and is seeking closure. The remaining 25 sites have been closed.

BAYFRONT LANDFILL EXPANSIONS INTO WETLANDS

A significant issue that the Water Board has addressed is the expansion of existing Bayfront landfills into wetland areas. The Water Board, in a few cases, allowed modest expansions (and undesirable loss of wetlands) to allow local governments time to develop other disposal options. However, these expansions were only approved because there was a demonstrated immediate public need. One expansion permit was appealed to the State Water Board, which clearly indicated that the Water Board should disapprove future such expansions into wetlands, and that local governments must complete the necessary planning to avoid this problem. Given the State Water Board’s position and the wetland provisions contained elsewhere in this Basin Plan, the Water Board will not approve further expansions of Bayfront landfills into wetlands.

4.25.3.4 DEPARTMENT OF DEFENSE AND DEPARTMENT OF ENERGY PROGRAM

The goal of the DoD/DoE program is the investigation and cleanup of pollution at federal military sites. DoD sites include active and inactive military bases and formerly utilized defense

(FUDs) sites. DoE sites include active federal energy agency sites. DoD and DoE sites in the Region as of 2005 are shown on Figure 4-7. An adjunct to cleanup, particularly with respect to DoD sites, is the return of these sites to productive, civilian use.

Investigation and cleanup at these sites follows the CERCLA process. For DoD sites, the DoD has elected to follow the CERCLA process even if the sites are not listed as "Superfund" sites. This process follows a rigorous sequence of document preparation and agency approvals including completion of the formal Preliminary Assessment, Site Investigation, Remedial Investigation, and Feasibility Study, all leading to a Record of Decision (ROD) on an acceptable Remedial Action Plan (RAP).

Groundwater cleanup must also adhere to the requirements of the Basin Plan and existing state law (the Water Code), relevant regulations (e.g., Title 27; Title 23, Chapter 16, etc.), and policies set forth by State Water Board Resolution Nos. 68-16, 88-63, and 92-49.

Under the Base Realignment and Closure Act of 1990 (amended 2005), the DoD has been conducting environmental investigation and cleanup at each of these sites with oversight from the Water Board and other agencies. There is considerable state and federal interest in moving these latter types of DoD sites into economically productive uses, in part to offset the negative economic impact of base closures on the local community or to invigorate the often depressed economies of local communities located near these sites. Progress has been slow in many cases due to competition for limited DoD cleanup funds, the complexities of the sites themselves, and uncertainty about the planned reuse. Cities have recently been pursuing "early transfers" that allow them to receive the military property prior to completion of cleanup. Local governments have contracted with developers and environmental firms to perform an integrated cleanup and redevelopment.

Closed military bases that are transferred to a local entity before the cleanup is complete may be subject to a land use covenant (LUC) issued by the Water Board to ensure the site cleanup is completed. The Water Board may issue SCRs per Water Code Section 13304 to allow investigation and cleanup after the military property is transferred. For additional regulatory tools, see Section 4.25.2 Requirements for Site Investigation, Cleanup, and Site Closure.

For the DoE program, all of the sites currently within the Region are active and are not expected to fall within public hands for the foreseeable future. Cleanup is ongoing at these sites. Contamination generally consists of discharges of solvents, petroleum hydrocarbons, PCBs, and/or metals to both soil and groundwater. In some cases, radionuclides have also been released. DoE has regulatory authority over radionuclide discharges, although the Water Board provides input into the investigation and cleanup activities related to them.

Federal funding for both the DoD and DoE programs covers all costs associated with Water Board and State Water Board staff oversight. The state signed a Cooperative Agreement with the Department of Defense (Defense-State Memorandum of Agreement, DSMOA)). In the Cooperative Agreement, DTSC acts as the state's agent. Both the State Water Board and the Regional Water Boards coordinate with DTSC to allocate agency responsibility and funding and establish procedures under which site investigation and cleanup will proceed, decisions will be

made, and disputes will be resolved. For the DoE program, a grant has been established which describes and funds Water Board oversight at DoE sites.

4.25.3.5 ABOVEGROUND PETROLEUM STORAGE ACT

The state's Aboveground Petroleum Storage Act was enacted in 1989 and amended in 1991. The Act became effective on January 1, 1990.

The purpose of this Act is to protect the public and the environment from the serious threat of spillage of millions of gallons of petroleum-derived chemicals stored in thousands of aboveground storage tanks. The Act requires that the Water Board inspect aboveground petroleum storage tanks used for crude oil and its fractions for their compliance with the federally required Spill Prevention, Control, and Countermeasure Plan (SPCCP). In the event that a release occurs that threatens surface or groundwater, the Act allows the state to recover reasonable costs incurred in the oversight and regulation of the cleanup. The Water Board oversees sites where releases from aboveground storage tanks have impacted groundwater under the SLIC cost recovery program.

4.25.4 GROUNDWATER PROTECTION STUDIES

The intimate ties among the land, surface water, groundwater, the Estuary, and human activity must be acknowledged in order to promote wise, balanced, and sustainable use of water resources. In this regard, the Water Board will encourage planning and management by supplying tools and information that will provide an integrated environmental management approach to problem solving. It also must be recognized that groundwater quality and quantity are inextricably linked. Because an informed and involved citizenry is crucial to realizing groundwater protection, policies and plans should encourage and promote research, education, and public involvement as an integral part of any protection program.

4.25.4.1 GROUNDWATER PROTECTION AND BENEFICIAL USE STUDIES

Water Board staff, with contributions from local agencies, evaluated existing groundwater protection programs and beneficial uses of groundwater in the Napa River Watershed (1996), San Francisco and Northern San Mateo Counties (1996), East Bay Plain, Alameda and Contra Costa Counties (1999), and South San Francisco Bay Basin, Alameda, San Mateo, and Santa Clara Counties (2003). Extensive research was conducted and numerous references were compiled to prepare these groundwater studies. In general, each study included the following goals:

- Describe the hydrogeology and groundwater use for the groundwater basins;
- Identify major threats to groundwater and groundwater protection programs;
- Identify locations where groundwater is vulnerable to contamination;
- Identify locations where groundwater monitoring is needed;
- Use GIS to compile complex data sets to use as a decision-making tool for groundwater protection;
- Refine beneficial use designations for some groundwater basins;
- Identify inactive well locations;
- Describe groundwater extraction for municipal, agricultural, and industrial water supply;

- Summarize statewide initiatives for groundwater protection and data sharing; and
- Evaluate special problem areas that are typically not addressed by groundwater protection programs.

The results of these groundwater protection studies identified several key groundwater protection issues that are summarized in Section 4.26 Emerging Program Areas. The reports are available at the Water Board website.

4.25.4.2 STATE WATER BOARD GROUNDWATER PROTECTION PLANNING CONTRACT

At the Water Board's request, the State Water Board funded a contract with the University of California at Berkeley to develop a regional groundwater protection plan. The project focused on several significant groundwater basins: Santa Clara Valley, Niles Cone, Livermore Valley, San Mateo Plain, and Half Moon Bay Terrace (Table 2-2). The vulnerability to pollution of each of the basins was determined using the U.S. EPA's DRASTIC Index Method (U.S. EPA Project No. 600/2-87-035, April 1987) on a GIS. The project was completed in 1994 by the Center for Environmental Design Research, University of California at Berkeley.

4.25.4.3 INTEGRATED ENVIRONMENTAL MANAGEMENT PROJECT

In 1987, the U.S. EPA completed the Integrated Environmental Management Plan (IEMP). This innovative study conducted in Santa Clara County sought to improve public health and environmental protection by integrating approaches for hazardous material management for land, air, and water. The IEMP's Drinking Water Subcommittee developed recommendations to address the question “How clean is clean?” The committee wrote, ".... because contamination and clean-up impacts vary significantly in different sites and different hydrogeologic zones, the Water Board should continue to develop and standardize a process for clean-up decision making, rather than establish across-the-board clean-up levels." The recommendations from this study were applied to developing site-specific cleanup levels.

4.25.4.4 GROUNDWATER RESOURCE STUDY

A basin-wide approach for implementing and prioritizing groundwater cleanup was recommended in a series of reports titled "San Francisco Bay Region Groundwater Resource Study" (1987). The reports were a cooperative effort by the Water Board and the University of California at Berkeley, School of Public Health, and Department of Landscape Architecture. The ten volume series covered eight high priority groundwater basins: Niles Cone, Livermore and Sunol Valley, Ygnacio/Pittsburg/Clayton/San Ramon Basins, Suisun/Fairfield Basin, Napa Valley, Sonoma Valley, and San Mateo Basin. The Water Board used the results of this study to prioritize its workload in addressing polluted sites.

4.25.4.5 SHALLOW DRAINAGE WELLS

The California Water Code, Section 13710, defines the term "well" or "water well" to mean any artificial excavation constructed by any method for the purpose of extracting water from, or injecting water into, the underground. The definition does not include (a) oil, gas, and geothermal wells, or (b) construction dewatering wells and hillside stabilization dewatering wells. Therefore, all shallow drainage wells (also known as dry wells, infiltration basins, and

shallow injection wells) used for the purpose of disposing of stormwater or surface runoff are covered under this definition. The purpose of this Basin Plan section is to clarify the Water Board's position in regard to the construction, usage, and regulatory permitting aspects of shallow drainage wells.

In 1951, the Water Board adopted Resolution No. 81, "Statement of Policy on Sewer and Drainage Wells", which is incorporated by reference into this plan. This resolution states that the Water Board disapproves of the construction and use of wells for disposal of effluent from septic tanks and surface runoff from streets and highways except where such wells discharge into a formation that at no time will contain groundwater fit for domestic, agricultural, or industrial use. At the same time, the Water Board recognized that these wells already existed in the Region and that immediate abandonment may be impractical. Therefore no new installations were to be permitted, more satisfactory drainage methods were to be substituted for existing installations at the earliest practicable date, and the Water Board was to consider the matter of prescribing requirements for the discharge in granting any exceptions to the prohibition. After review of Water Board files, it does not appear as if any exceptions to the resolution were officially granted.

The Federal Underground Injection Control Program was established in 1984 with the adoption of the Safe Drinking Water Act. In California, the U. S. EPA is the lead agency in charge of administering the program. Under this program, wells used to dispose of surface water runoff are classified as Class V injection wells. The owner or operator of any existing Class V well is required to submit information on each well, including the nature and type of discharge and operating status. U.S. EPA is conducting a well inventory statewide to identify Class V wells.

There are a number of applicable state regulations pertaining to the construction and use of shallow drainage wells. AB2182 (Chapter 1131, Section 4458) of the California Health and Safety Code, passed in 1961, prohibits the use of drainage wells for the disposal of sewer water unless authorized by the Water Board. The Water Code (Chapter 10, Sections 13700 – 13806) defines the terms "well" and "water well" and states that any person who intends to dig, bore, or drill such a well must file a notice of intent with DWR or the designated local enforcement agency. A detailed report of completion must then be filed after construction. If the Water Board finds that standards of water well construction, maintenance, abandonment, and destruction are needed in any area to protect beneficial uses of groundwater, it shall determine the area to be involved and so report to each affected county and city in the area. Each such affected county shall, within 120 days of receipt of the report, adopt an ordinance establishing standards of water well construction, maintenance, abandonment, and destruction for the designated area. To date, standards and siting criteria for shallow drainage wells are non-existent in the Region and subsequently not included in the well-permitting process.

The Water Board issues NPDES permits for stormwater discharges to surface water for certain industrial and construction activities and to the larger municipalities in the Region (Section 4.14 Urban Runoff Management). The permits require the implementation of control measures to reduce pollutant loading, along with water quality monitoring to assure that the waters being discharged will not impact the beneficial uses of receiving waters. The discharge of industrial waste into the sanitary sewer system is now closely regulated under a pretreatment program. Likewise, the discharge of stormwater to the subsurface must also be regulated to assure the protection of groundwater supplies. Standards for shallow drainage well construction,

maintenance, abandonment, destruction and siting criteria are needed throughout the Region. Land-use decisions, such as stormwater structural controls and well construction permitting, are most often made by local government agencies, including water districts, planning, and building departments. Many of these agencies are not aware of the Water Board's Resolution No. 81, or the rationale behind it.

GOAL

The goal of the Shallow Drainage Program is to eliminate the unregulated construction and use of shallow drainage wells in areas where municipal, domestic, agricultural, and industrial groundwater supplies are threatened.

This goal is to be attained by a coordinated effort on the part of U.S. EPA, the Water Board, DWR, and local government agencies to implement a shallow drainage well control program.

PROGRAM

The Water Board prohibits the unauthorized construction and use of shallow drainage wells. The shallow drainage well control program shall consist of two main elements: 1) locating existing wells; and 2) regulating the construction and use of existing and new wells.

Locating existing wells
U.S. EPA, the Water Board, and local government agencies will need to work together to identify all existing shallow drainage wells.
Regulating existing wells and new wells
Continued use of existing wells or construction of new wells may be authorized by a local enforcing agency through its well-permitting process. The Water Board will work with DWR and each city, county, and local water supply and flood control agency on developing standards for adoption by ordinance for the construction, maintenance, abandonment, and destruction of shallow drainage wells. Additionally, it must be demonstrated that the use of the well will not result in a discharge that may pose a threat to municipal, domestic, agricultural, and industrial groundwater supplies. If this cannot be adequately demonstrated, the well must be permanently closed. Closure of each well must be done in compliance with U.S. EPA Class V injection well closure guidelines and applicable local agency guidelines or regulations.

4.26 EMERGING PROGRAM AREAS

There are several aspects of protecting beneficial uses associated with aquatic systems and groundwater protection that have emerged as critical issues in recent years. This section presents a prospective view of emerging program areas that have increasingly become the focus of Water Board activity. Each involves both an integration of approaches used in current Water Board programs as well as innovative solutions.

4.26.1 WETLAND RESTORATION

As documented in the Habitat Goals reports, a large percentage of historic tidal marsh and mudflats around the Estuary have been diked, drained, and/or filled to serve various human

purposes. Current planning efforts by multiple agencies recognize the importance of restoring wetland functions to the Estuary to protect and enhance beneficial uses. The Estuary Project's Comprehensive Conservation and Management Plan (June 1994) proposes several goals for wetland management in the Estuary, and recommends large-scale restoration of salt ponds and other former wetlands in order to support sustainable populations of fish and wildlife as well as other benefits associated with wetlands. The Habitat Goals reports provide guidance to the Water Board and indicates where wetland restoration potential exists around the Estuary.

The Water Board participates in a number of wetland restoration projects in the Region, both in a regulatory role regarding proposed wetland fill and/or discharges, and in the role of an interested party or stakeholder, recognizing the multiple benefits of wetland restoration for water quality and beneficial uses. Major restoration projects underway include former salt ponds adjacent to South San Francisco Bay and San Pablo Bay, former DoD sites such as Hamilton Field in Marin County, and the Bair Island Ecological Reserve in South San Francisco Bay. While these projects are expected to have a positive impact on water quality and beneficial uses, certain challenges must be addressed, such as minimizing uptake of mercury into the food web, meeting water quality objectives for salinity and dissolved oxygen in discharges from ponds (impounded bay waters), protecting existing tidal mudflats, and controlling harmful invasive species such as Spartina alterniflora cordgrass and its hybrids.

4.26.2 DESALINATION

San Francisco Bay has only recently been identified as a potential drinking water source, and this has become an emerging program area for the Water Board. Producing drinking water from saltwater results in a concentrated brine stream that must be managed to protect water quality. In the late 1990s, some water supply agencies in the Region began investigating the feasibility of producing drinking water from the Estuary using desalination technology. As of 2005, several sites are being screened for potential desalination facilities by various agencies, and in 2005 the Water Board issued an NPDES permit to one pilot plant for the Marin Municipal Water District in the City of San Rafael.

Desalination plants are in operation throughout the world, with facilities most common in the Middle East, the Caribbean and Florida. To date, only a limited number of desalination plants have been built along the California coast, primarily because the cost of desalination is generally higher than the costs of other water supply alternatives available in California (e.g., water transfers and groundwater pumping). However, as drought conditions occur and concern over water availability increases, desalination projects are being proposed at numerous locations in the state.

Desalination plants produce liquid wastes that may contain all or some of the following constituents: high salt concentrations, chemicals used to clean plant equipment and used during pretreatment, and toxic metals (which are most likely to be present if the discharge water was in contact with metallic materials used in construction of the plant facilities). Potential alternatives for disposal of liquid waste include discharge into waters of the state, combination with other discharges (e.g., power plant cooling water or sewage treatment plant effluent) before discharge, discharge into a sewer for treatment in a sewage treatment plant, or drying and disposal in a landfill. Desalination plants also produce a small amount of solid waste (e.g., spent pretreatment filters and solid particles that are filtered out in the pretreatment process).

If water supply agencies implement desalination to augment supplies along with waste management practices that protect beneficial uses, the Water Board will consider amending the Basin Plan to designate the municipal and domestic supply (MUN) beneficial use for applicable marine or estuarine areas of the Region.

4.26.3 EMERGING TOXIC POLLUTANTS OF CONCERN

As noted in Section 4.1.2.1 Numeric Water Quality Objectives, Wasteload Allocations, there are pollutants of local concern for which water quality objectives have not been developed and adopted. Both regulatory and research surveillance programs periodically detect pollutants that are persisting in the aquatic environment, which may or may not have published guidelines for protecting beneficial uses. Such pollutants may be inducing toxicity or exhibiting bioaccumulation in the food web. The Regional Monitoring Program for the San Francisco Bay, described in Section 6.1 Regional Monitoring Program, includes studies to anticipate potential water quality problems by identifying previously unmonitored and/or unknown pollutants. It is through such efforts that the potential pollutant problems of the future can be identified and addressed before they become environmentally and economically costly "legacy" pollutants, such as mercury, PCBs, and chlorinated pesticides such as dichloro-diphenyl-trichloroethane (DDT). Absent regulatory objectives or published guidelines, the Water Board will encourage source identification and control of pollutants found in the Region's waters that exhibit characteristics of concern, such as detectable and/or increasing levels in tissues of the Estuary's organisms, as in the case of polybrominated diphenyl ethers (PBDEs). The Water Board will establish water quality objectives for selected pollutants as the necessary technical information becomes available.

Groundwater quality has been impacted by several emerging contaminants and by previously known contaminants that have undergone increased regulatory concern. Emerging contaminants, including N-nitrosodimethylamine (NDMA), disinfection byproducts such as trihalomethanes, haloacetic acids, bromate, and chlorite, endocrine disruptors, and pharmaceutically active compounds, may be present in sanitary wastewater, recycled water, imported water, and any other water source that receives sanitary wastewater. Emerging contaminants may pose a threat to groundwater quality when such waters are used for artificial recharge or are otherwise intentionally infiltrated. Other contaminants of concern affecting groundwater quality that are of concern include nitrate, total dissolved solids, perchlorate, solvent stabilizers (such as 1,4-dioxane), arsenic, and hexavalent chromium.

4.26.4 GROUNDWATER PROTECTION ISSUES

Groundwater protection studies conducted by Water Board staff identified several key groundwater protection issues and are summarized below.

4.26.4.1 VERTICAL CONDUITS

Vertical conduits can provide pathways for the migration of surface pollution or shallow groundwater pollution into deeper water bearing zones. Pollutants that enter groundwater through vertical conduits circumvent the natural migration process, which protects groundwater by filtering and other natural attenuation processes. Numerous agricultural and domestic wells installed in the Region have been abandoned or covered by subsequent development.

Identification and proper destruction of these potential conduits is critical to include in any groundwater protection program.

4.26.4.2 HORIZONTAL CONDUITS/SANITARY SEWER LEAKS TO GROUNDWATER

Horizontal conduits also serve to spread contamination by providing preferential pathways for migration of contaminants and contaminated groundwater. Storm drain systems and their construction backfill can be significant pathways for migration of contaminated shallow groundwater to water bodies where the storm drains discharge. Similar protocols should be followed for investigating horizontal conduits as for vertical conduits. A horizontal conduit study should be conducted at all sites where releases of toxic or hazardous materials are documented and before development or new construction begins at sites where toxic or hazardous materials have been used or stored. This is particularly important at or near dry cleaners or other operations where chlorinated solvents have been used.

Sanitary sewer lines may also allow pollutants to migrate to groundwater. Exfiltration is leakage from sanitary sewer lines into the subsurface and, in most cases, into surrounding groundwater. This phenomenon usually occurs in areas where the water table is below the sewer line. Leaking sewer lines can introduce pathogens into surrounding groundwater. Of more significance are chemicals transported in sewer lines that are released and migrate to and affect both shallow and deeper aquifers. The most significant historical impacts of leaking sewer lines are often associated with dry cleaning operations and the use of chlorinated solvents in electronics industries, such as wafer fabricators, plating shops, and printed circuit board shops.

4.26.4.3 GROUNDWATER SURFACE WATER INTERACTIONS

Nearly all surface water features (streams, lakes, reservoirs, wetlands, and estuaries) interact with groundwater. Several issues have been identified that simultaneously affect the quality and quantity of surface water and groundwater due to the dynamic relationship between the two. The effects of these issues on water quality and quantity must be understood in order to develop effective water resource management strategies. These issues include the effect of surface water diversion and groundwater withdrawal on creek and riparian habitat, water quality, surface water infiltration to groundwater (e.g., recharge and stormwater infiltration), groundwater discharge to surface water (e.g., plume discharges), and changing land use (as it affects runoff and recharge).

4.26.4.4 SALTWATER INTRUSION

Saltwater from San Francisco Bay and adjacent salt ponds has intruded freshwater-bearing aquifers in the Niles Cone, Santa Clara Valley, and San Mateo Plain basins. In both the Niles Cone and Santa Clara Valley basins, local agencies have implemented measures to prevent saltwater intrusion. The threat of saltwater intrusion in the Niles Cone is primarily due to the basin's proximity to San Francisco Bay and the large system of salt ponds that operate along the Bay's margin. In Santa Clara County, land subsidence, resulting from historical pumping that lowered the water table, has caused the lower reaches of streams and rivers to be invaded by saline tidal waters, increasing salinity in shallow groundwater. Land subsidence is no long occurring in Santa Clara Valley.

4.26.4.5 TRACKING INSTITUTIONAL CONTROLS

Due to the difficulty of accomplishing rapid cleanup at most sites, it is usually necessary to manage site contamination to avoid or minimize exposure pending attainment of cleanup standards. Risk management measures include engineering controls (such as slurry walls or engineered caps) and institutional controls (such as notifications to site occupants or deed restrictions prohibiting sensitive land uses). Because risk management measures usually need to remain effective for many years, their effective implementation needs to be tracked and enforced. At issue is how best to do this. The solution will involve some combination of oversight by the Water Board or other cleanup oversight agency, the local permitting agency, and the discharger.

4.26.5 SEDIMENT

Sediments in the larger Estuary are both sources and sinks of pollutants. Under the Bay Protection and Toxic Cleanup Program in 1999, The Water Board completed a detailed assessment of (a) the levels of pollutants in sediment throughout the Bay, and (b) the risks and benefits of cleaning or otherwise managing existing hot spots.

Pollutant transport associated with sediments is also the subject of numerous studies, many of which are supported by the Water Board. The dynamics of sediment movement, uptake of pollutants through the benthic food web, measurement of pollutant levels on suspended material, and food web models associated with TMDL projects are examples of such studies.

Finally, the environmental effects associated with the disposal or reuse of Estuary sediments have been extensively investigated within the context of the Water Board's dredging management program. As part of this effort, the Water Board has supported detailed research on developing sediment toxicity tests and sediment quality objectives.

4.26.6 NATIONAL "PORTFIELDS" INITIATIVE

The U.S. EPA, National Oceanic and Atmospheric Administration (NOAA), and a number of other federal agencies announced the "Portfields" initiative in 2003. This effort is a renewed focus on revitalizing the nation's port communities to protect the coastal environment and restore or maintain economic vitality. Many waterfront areas have suffered as waterfront-manufacturing industries changed their interests or went abroad. Abandoned properties with perceived contamination can prevent redevelopment, and local communities lose jobs and other economic benefit. Businesses that are today seeking viable waterfront lands for manufacturing, shipping, and tourism can benefit from Portfields revitalization projects. There are significant waterfront industrial areas in the Region that have undergone redevelopment, such as the Port of Oakland and Mission Bay, and more are expected as federal agencies direct funding to Brownfield project proponents in port areas.

4.26.7 HYDROMODIFICATION

Hydromodification is a general term that encompasses effects of projects on the natural hydrologic, geochemical and physical functions of streams and wetlands that maintain or enhance water quality. Regional Water Boards use this term to describe an alteration away from a natural state of stream flows or the beds or banks of rivers, streams, or creeks, including

ephemeral streams, which results in hydrogeomorphic changes. Protecting beneficial uses within the Region consistent with the federal Clean Water Act and the Porter-Cologne Act requires careful consideration of projects that result in hydrogeomorphic changes and related adverse impacts to the water quality and beneficial uses of waters of the State.

An increasing number of Water Board regulatory actions pertain to the proposed hydromodification of stream and river systems in the Region. These actions include water quality certifications or waste discharge requirements for projects that apply for Clean Water Act Section 401 Certification, total maximum daily loads (TMDLs) for sediments and nutrients in some of the Region's streams, and requirements for municipal stormwater management programs to develop Hydromodification Management Plans. Additionally, many of the grants for clean water awarded under voter-approved bond measures and managed by Water Board staff involve restoration proposals on various components of stream systems. To ensure protection of streams through its regulatory and grant programs, and increase efficiency of the application process, Water Board staff developed a technical reference circular (Circular) in 2003, entitled, "A Primer on Stream and River Protection for the Regulator and Program Manager." The purpose of the Circular is to help various agency staff and permit applicants recognize the linkages between water quality and the good physical conditions of stream channels. The Water Board will consider amending the water quality standards and implementation program to clarify the dependence of water quality and beneficial uses on the functions and physical characteristics of water bodies.

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Table 4-19: Options for Future Management Strategies at Groundwater Cleanup Sites

Figure 4-1 Publicly Owned Treatment Works Outfalls

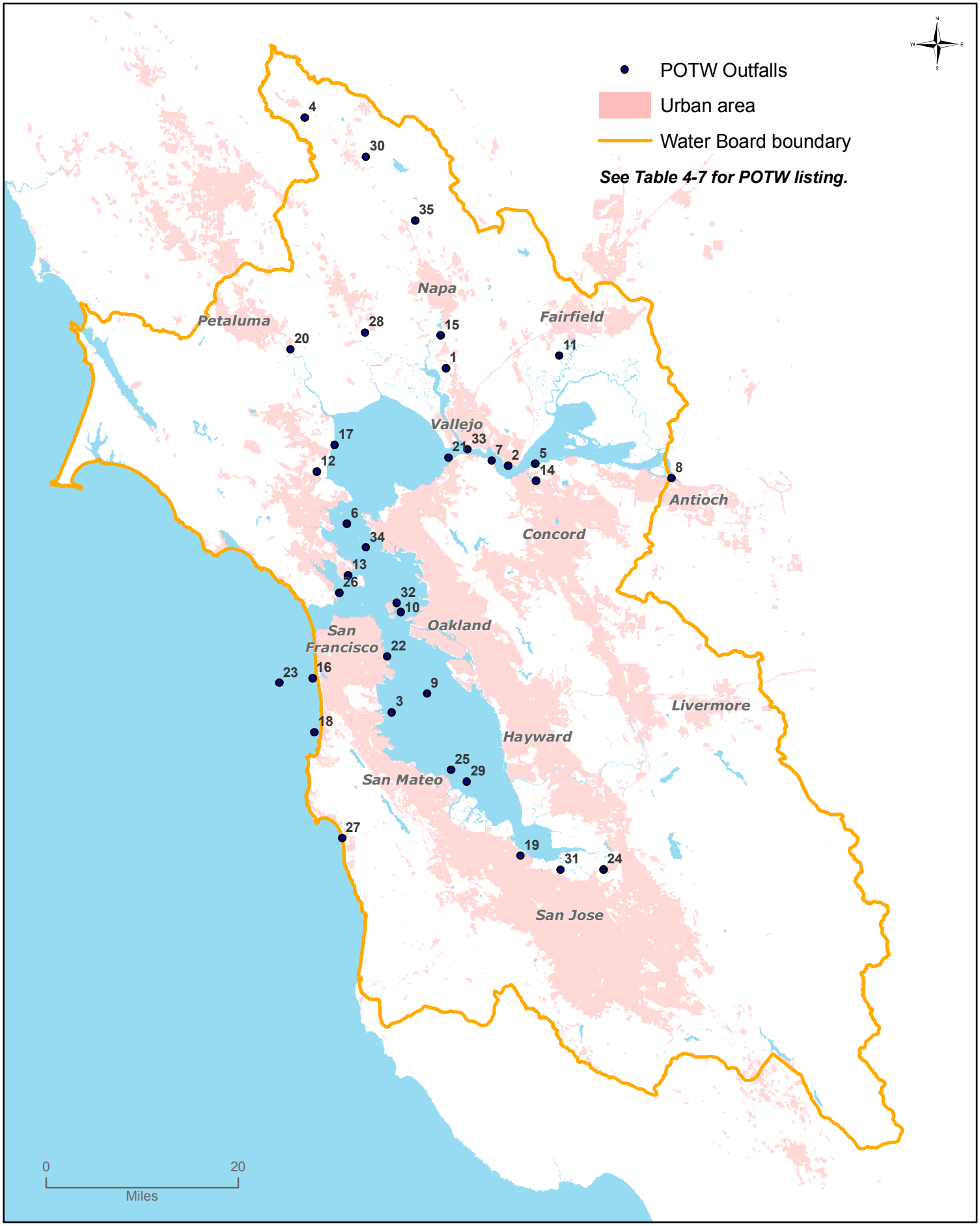


Figure 4-2 Major Industrial Discharge Outfalls

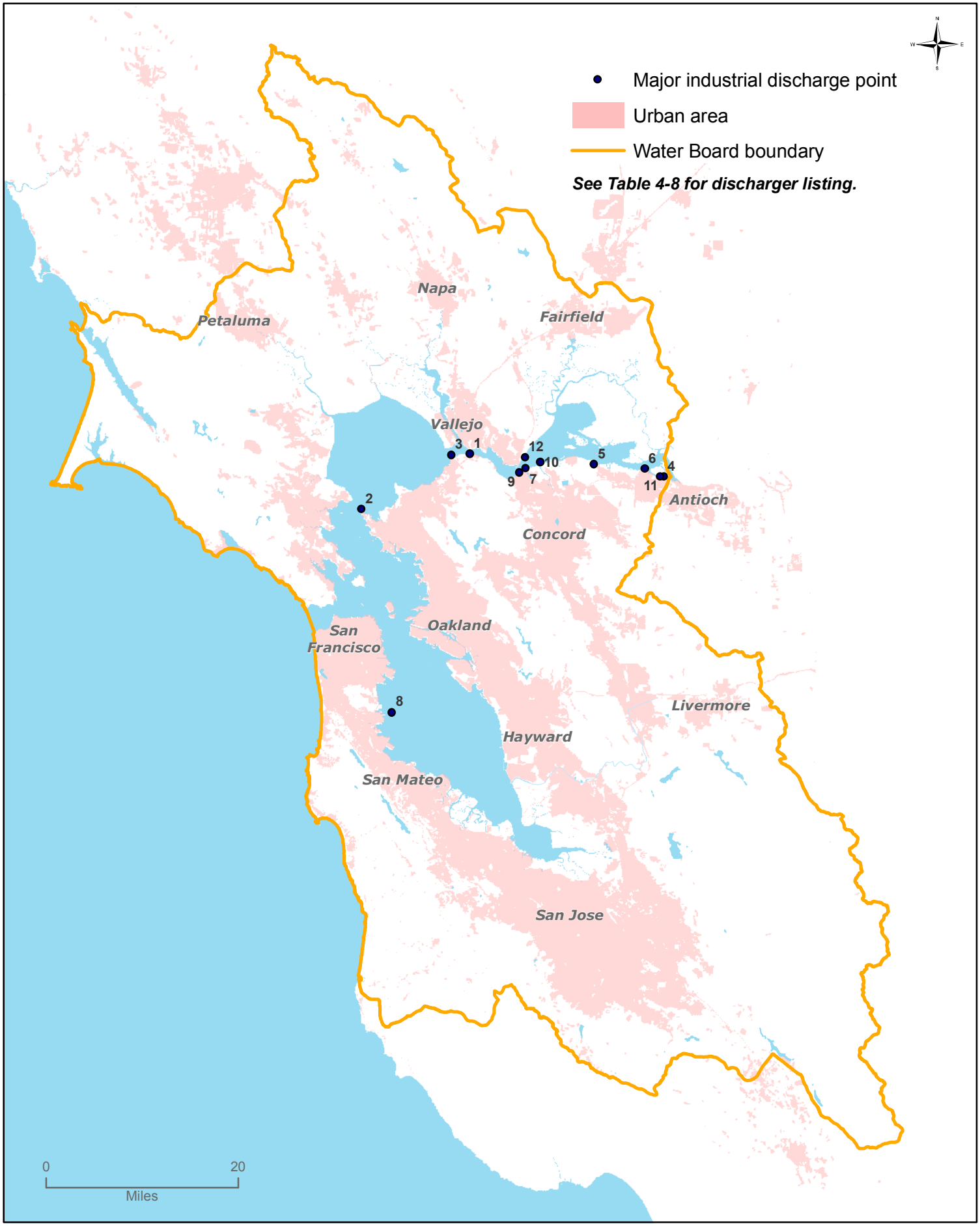


Figure 4-3 Urban Areas in the SF Bay Basin



Figure 4-4 Dredged Material Disposal and Beneficial Reuse Sites

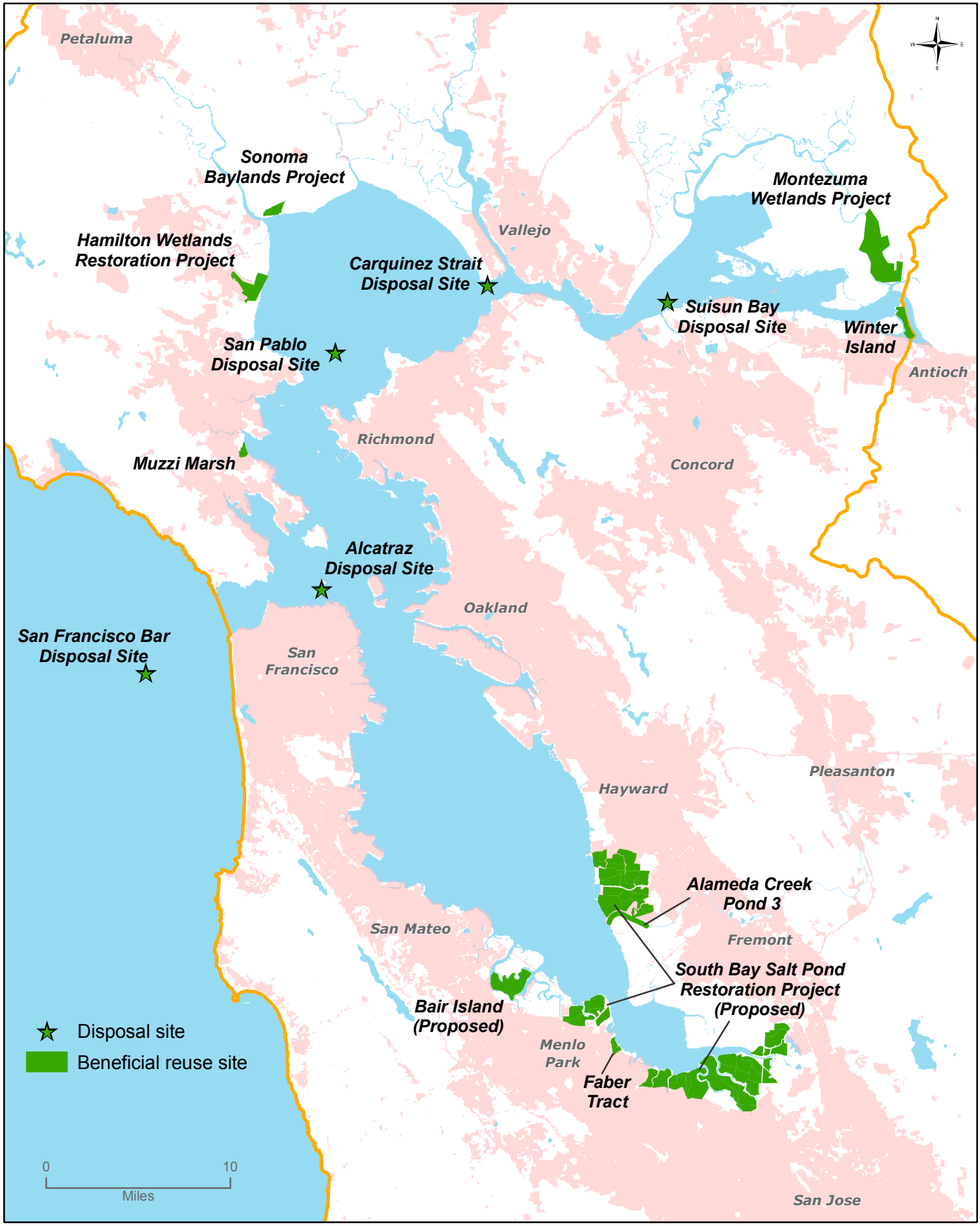


Figure 4-5 Inactive Mine Sites

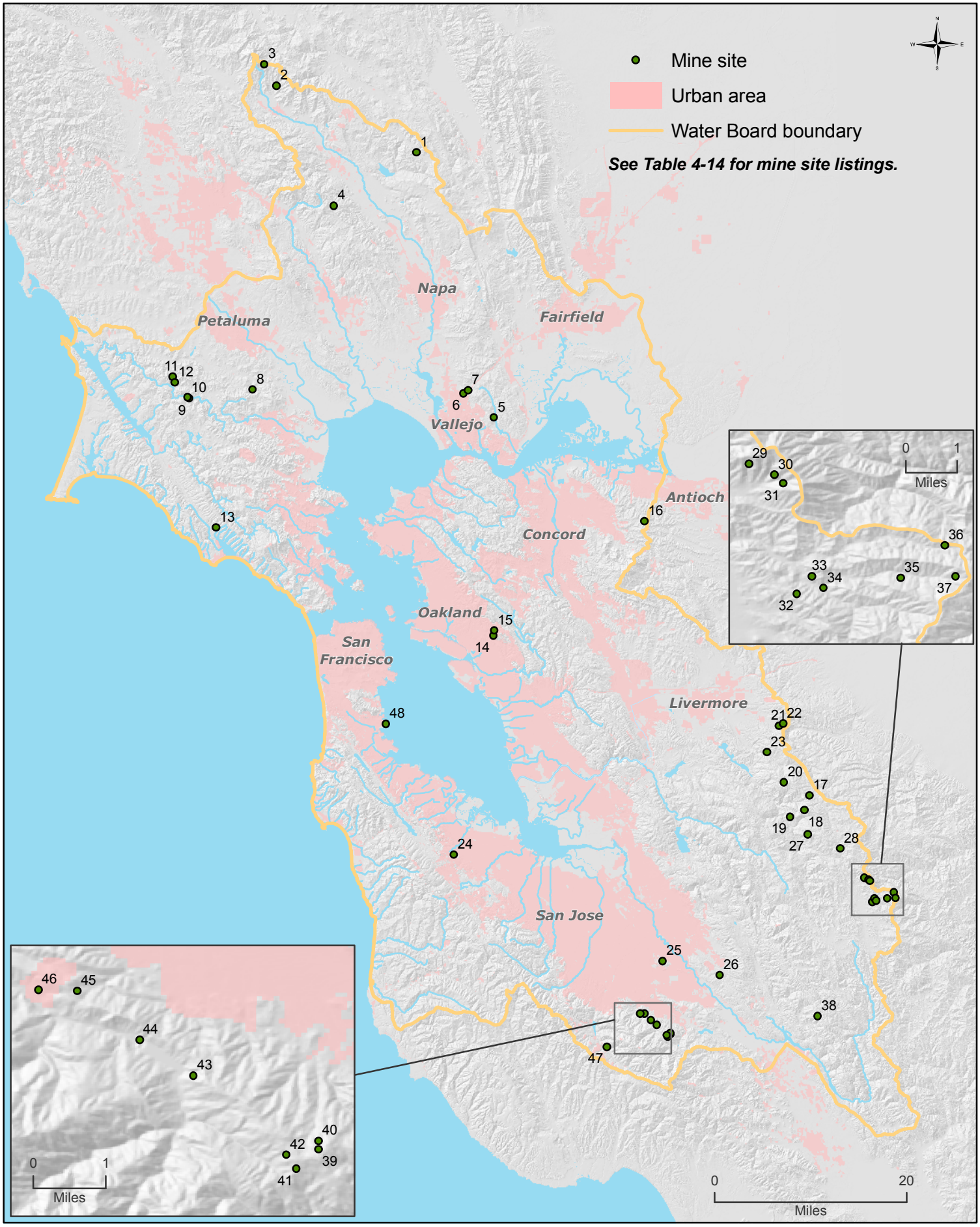


Figure 4-6 Municipal Solid Waste Landfill Sites

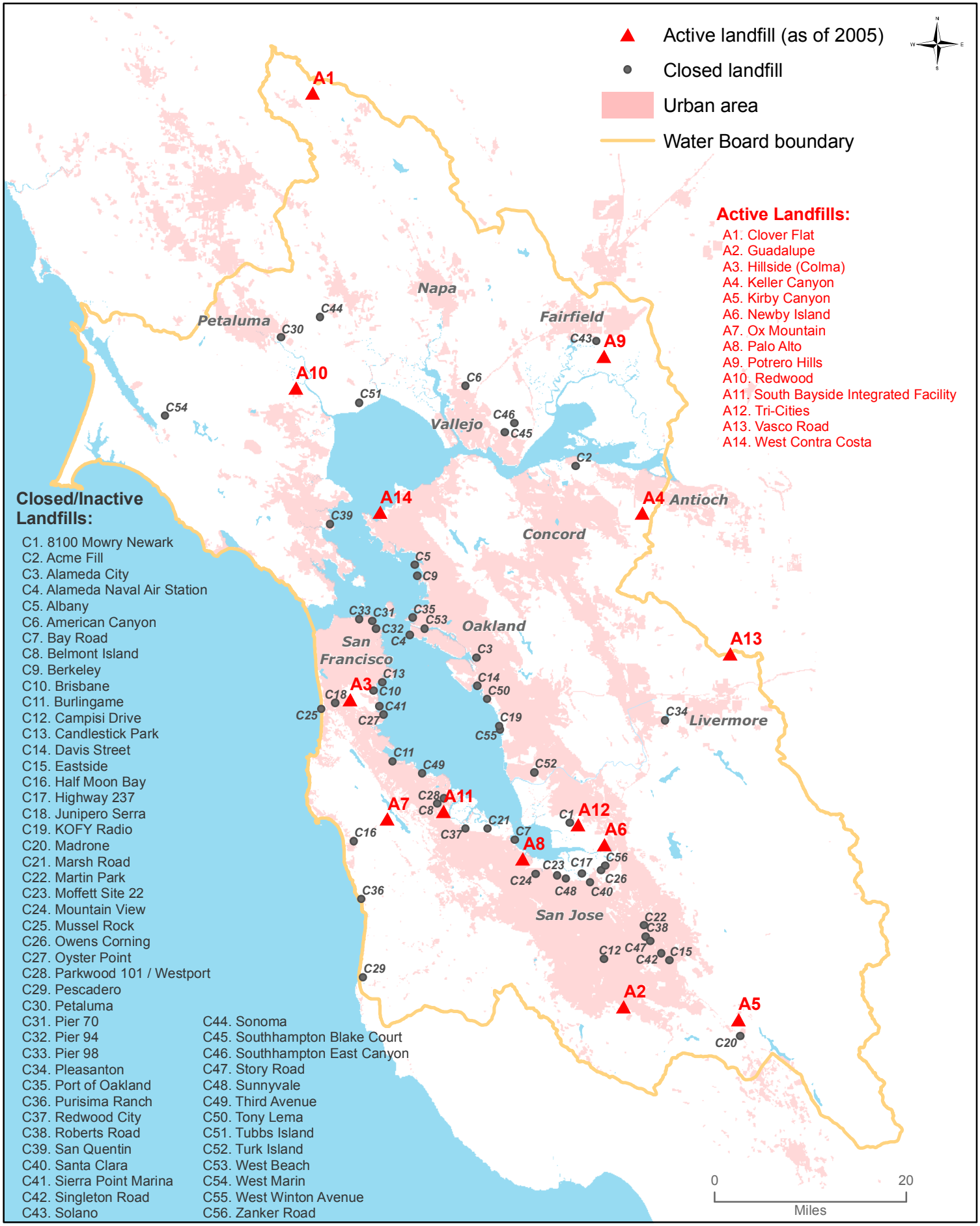


Figure 4-7 Department of Defense and Department of Energy Sites

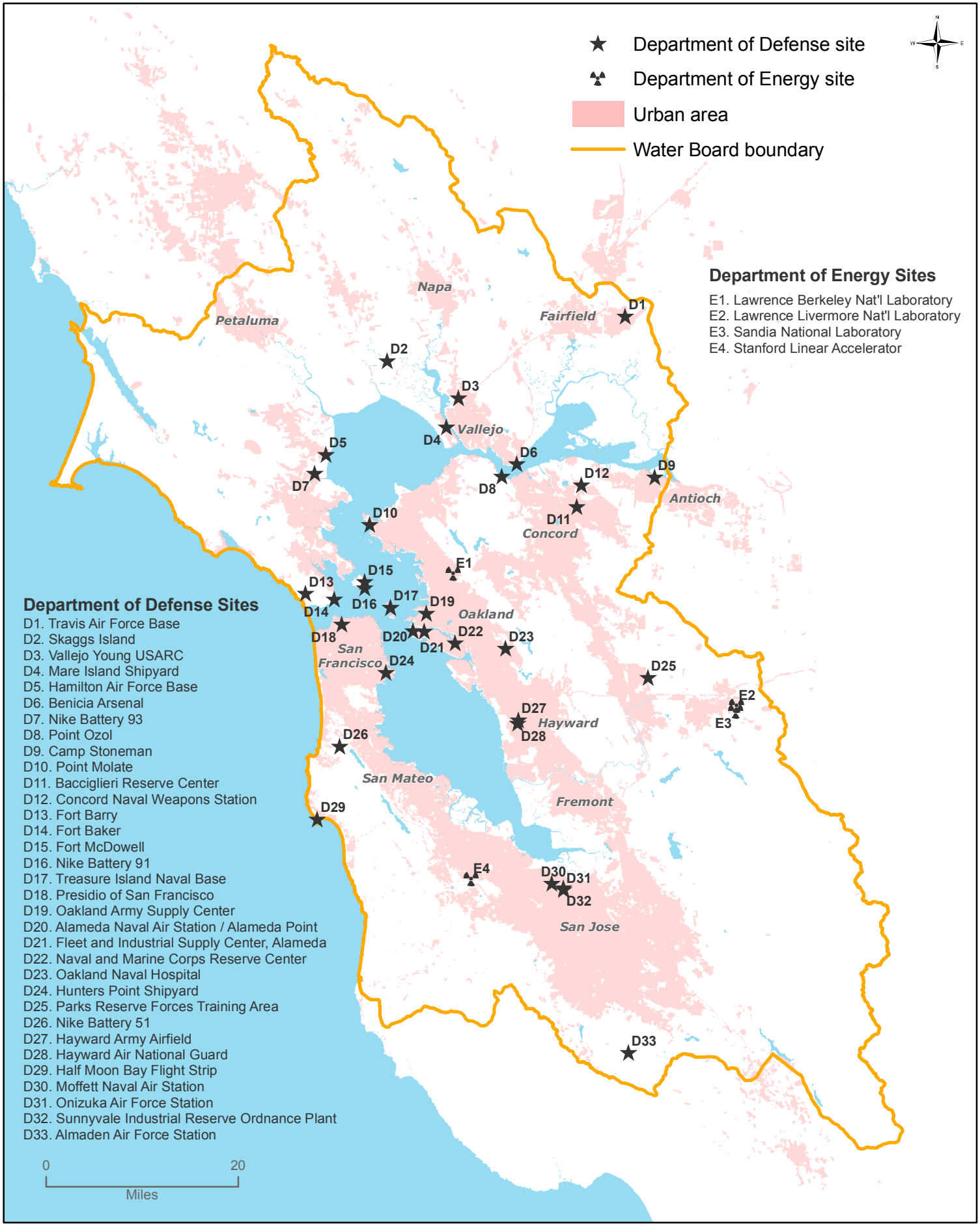


Table 4-1: Discharge Prohibitions

IT SHALL BE PROHIBITED TO DISHCARGE:	DISCUSSION
1. Any wastewater which has particular characteristics of concern to beneficial uses at any point at which the wastewater does not receive a minimum initial dilution of at least 10:1, or into any nontidal water, dead-end slough, similar confined waters, or any immediate tributaries thereof.	Waste discharges will contain some levels of pollutants regardless of treatment. This prohibition will require that these pollutants, when of concern to beneficial uses, be discharged away from areas such as nontidal waters and dead-end sloughs. This prohibition will (a) provide an added degree of protection from the continuous effects of waste discharge, (b) provide a buffer against the effects of abnormal discharges caused by temporary plant upsets or malfunctions, (c) minimize public contact with undiluted wastes, and (d) reduce the visual (aesthetic) impact of waste discharges.
2. Any wastewater which has particular characteristics of concern to beneficial uses to San Francisco Bay south of the Dumbarton Bridge.	This prohibition is consistent with the 1974 Bays & Estuaries Policy. This area is one that has experienced chronic water quality problems.
3. Any wastewater which has particular characteristics of concern to beneficial uses to Suisun Marsh during the dry weather period of the year. Local irrigation return water is excepted in quantities and qualities consistent with good irrigation practices.	The threat of high concentrations of toxicants, biostimulants, and oxygen-demanding substances in Suisun Marsh, an area of low assimilative capacity, great ecological sensitivity and value, and poor dispersion by tidal or freshwater flushing, necessitates such protection for the Marsh for the critical portion of the year when freshwater flows are nonexistent.
4. Any wastewater which has particular characteristics of concern to beneficial uses to Alameda Creek when no natural flow occurs.	The threat of dissolved solids, stable organics, and other pollutant accumulation in the groundwater of the basins recharged with waters of Alameda Creek is critical in the dry weather period when wastewater could account for much of the water percolating to the basin.
5. Any wastewater which has particular characteristics of concern to beneficial uses to Tomales Bay, Drakes Estero, Limantour Estero, Bolinas Lagoon, or Richardson Bay (between Sausalito Point and Peninsula Point).	Tomales Bay, Drakes Estero, and Limantour Estero are nearly pristine bodies of water and of great value for wildlife habitat and as recreational and scientific study areas. Bolinas Lagoon and Richardson Bay both have poor dispersion capability and low assimilative capacity. They have experienced high coliform, nutrient, and algal concentrations. This prohibition will provide protection for the intensive recreational beneficial uses of these water bodies.

6. All conservative toxic and deleterious substances, above those levels which can be achieved by a program acceptable to the Regional Board, to waters of the Basin.	The intent of the prohibition is to minimize the discharge of persistent toxicants into waters, thus protecting aquatic life and public water supplies. The prohibition recognizes that these substances can be most economically reduced at their source.
7. Rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas.	The prohibition is intended primarily to protect recreational uses, including boating and navigation. Floating rubbish can also impair suitability of waters for industrial cooling and other diversions by endangering pumps. This prohibition is in conformance with the Bays and Estuaries Policy.
8. Floating oil or other floating materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity or discoloration in surface waters.	The prohibition is intended to protect birds and other wildlife from the possible toxic effects of floating oil or oil deposits. Waterfowl and shorebirds in particular can be affected through coating of feathers and loss of thermal insulation. This prohibition is also intended to prevent visual nuisance that would be caused by floating oil or by its deposition on shore or on structures and to protect recreational uses which would be impaired by oil deposited on boats, other equipment, or persons.
9. Silt, sand, clay, or other earthen materials from any activity in quantities sufficient to cause deleterious bottom deposits, turbidity or discoloration in surface waters or to unreasonably affect or threaten to affect beneficial uses.	This is in conformance with the Bays and Estuaries Policy. The intent of this prohibition is to prevent damage to the aquatic biota by bottom deposits which can smother non-motile life forms, destroy spawning areas, and, if putrescible, can locally deplete dissolved oxygen and cause odors. The prohibition would also prevent discoloration and/or turbidity that can be caused by silt and earth. As one measure of compliance with this prohibition, design and maintenance of erosion and sediment control structures should comply with accepted engineering practices as identified in ABAG's *Manual of Standards for Erosion and Sediment Control Measures*. Turbidity or discoloration caused by dredging is covered by the Regional Board's policy on dredging (see section under nonpoint source control).

10. Sludges of municipal or industrial waste origin and sludge digester supernatant, centrate, or filtrate directly to surface waters without adequate treatment in conformance with waste discharge requirements.	The intent of this prohibition is to preclude a major potential source of bottom deposits, which could smother aquatic biota and cause localized dissolved oxygen depletion. Some sludges contain floatable material which would cause visual nuisance. Some industrial sludges contain persistent toxic matter. If discharged without adequate treatment, digester supernatant, centrate, and filtrate are generally septic and would cause odors, discoloration, and dissolved oxygen depletion.
11. Biocides of a persistent or cumulative form which have particular characteristics of concern to beneficial uses when applied where direct or indirect discharge to water is threatened except where net environmental benefit can be demonstrated to the satisfaction of the Regional Board. A management plan for the use and control of biocides in these cases must be approved by the Regional Board.	It is the intent of this prohibition to prevent, as much as practicable, the entrance into the aquatic environment of persistent and/or cumulative biocides (pesticides, herbicides, copper, etc.). This is necessary to minimize the toxic effects of these substances on the aquatic biota.
12. Radiological, chemical, or biological warfare agents or high level radioactive waste.	The intent of the prohibition is to protect human and aquatic life from the adverse effects of these materials.
13. Oil or any residuary product of petroleum to the waters of the state, except in accordance with waste discharge requirements or other provisions of Division 7, California Water Code.	Discharge of oil or residuary products of petroleum is also prohibited under the Fish and Game Code.
14. Sewage-bearing wastewater to individual leaching or percolation systems in the Stinson Beach area of Marin County, the Glen Ellen area of Sonoma County, and the Emerald Lake Hills and Oak Knoll Manor areas of San Mateo County, as specified in Regional Board Resolutions (Chapter 5) and sections in this chapter on groundwater protection and on-site wastewater systems.	The intent of this prohibition is to prevent degradation of groundwater from septic systems in these areas.
15. Raw sewage or any waste failing to meet waste discharge requirements to any waters of the Basin.	The intent of this prohibition is to protect the public and the aquatic environment from the effects of raw or inadequately treated waste discharges.
16. Waste that is not a sufficient distance from areas designated as being of special biological significance to assure maintenance of natural water quality conditions in these areas.	The intent of this prohibition is to protect the relatively pristine nature of these special areas.

17. Waste so as to alter the total dissolved solids or salinity of waters of the state to adversely affect beneficial uses, particularly fish migration and estuarine habitat.	The intent of this prohibition is to prohibit the discharge of excessively salty water to streams and the Bay-Delta system.
18. Sewage, whether treated or untreated, from any vessel into that portion of Richardson Bay bounded by the shore and by a line bearing 257 degrees from Peninsula Point to the shore at Sausalito, in Marin County.	The intent of this prohibition is to prevent high bacteriological counts in Richardson Bay due to significant sewage discharges from vessels.

Table 4-2: Effluent Limitations for Conventional Pollutants

(All units in MG/L, except as otherwise noted)

PARAMETERS	30-DAY AVERAGE	7-DAY AVERAGE	DAILY MAXIMUM	INSTANTANEOUS LIMIT	SEVEN-SAMPLE MEDIUM	FIVE-SAMPLE MEDIUM
Biochemical Oxygen Demand (BOD5)[a,b]	30	45				
Suspended Solids (SS)[a]	30	45				
85% removal of BOD5 and SS[a,c]						
Total Coliform Organisms[a,d] (in MPN/100ml)						
- Shallow Water Discharge[e] (in immediate vicinity of public contact or shellfish harvesting)			240		2.2	
- Deep Water Discharge			10,000			240
pH[f] (in pH units)						
- Shallow Water Discharge				6.5-8.5		
- Deep Water Discharge				6.0-9.0		
Residual Chlorine[f] (free chlorine plus chloramines)				0.0		
Settleable Matter[f,g] (in ml/l-hr)	0.1		0.2			
Oil & Grease[f]	10		20			

NOTES:

a. These effluent limitations apply to all sewage treatment facilities that discharge to inland surface waters and enclosed bays and estuaries. The Board may also apply some of these limitations selectively to certain other non-sewage discharges, but they will not be used to preempt Effluent Guideline Limitations established pursuant to Sections 301, 302, 304, or 306 of the federal Water Pollution Control Act, as amended. (Such Effluent Guideline Limitations are included in NPDES permits for particular industries.)

b. The federal regulation allows the parameter BOD to be substituted with Carbonaceous BOD at levels that shall not exceed 25 mg/l as a 30-day average, nor 40 mg/l as a 7-day average.

c. The arithmetic mean of the biochemical oxygen demand (5-day, 20°C) and suspended solids values, by weight, for effluent samples collected in any month shall not exceed 15 percent of the arithmetic mean of the respective values, by weight, for simultaneous influent samples.

d. (1) The Regional Board may consider substituting total coliform organisms limitations with fecal coliform organisms limitations provided that it can be conclusively demonstrated through a program approved by the Regional Board that such substitution will not result in unacceptable adverse impacts on the beneficial uses of the receiving water.

(2) The Regional board may consider establishing less stringent requirements for any discharges during wet weather.

e. Exceptions to these requirements may be granted by the Regional Board where it is demonstrated that beneficial uses will not be compromised by such an exception. Discharges receiving such exceptions shall not exceed a five-sample median of 23 MPN/100 ml nor a maximum of 240 MPN/100 ml during dry weather.

f. These effluent limitations apply to all treatment facilities.

g. Discharges from sedimentation and similar cases should generally not contain more than 1.0 ml/l-hr of settleable matter. Design and maintenance of erosion and sediment control structures shall comply with accepted engineering practices as identified in the Association of Bay Area Government's (ABAG's) *Manual of Standards for Erosion and Sediment Control Measures*.

Table 4-3: Acute Toxicity Effluent Limits

Discharge/Monitoring Type	At Least 90% Survival	At Least 70% Survival
Continuous discharge / weekly or monthly tests	11-sample[a] median	11-sample 90th percentile[b]
Continuous discharge / quarterly or annual tests	3-sample[c] median	Single-sample maximum
Intermittent discharge	--	Single-sample maximum

NOTES:

a. 11-sample median is defined as follows: If five or more of the past ten or fewer samples show less than 90 percent survival, then survival of less than 90 percent on the next sample represents a violation of the effluent limitation.

b. 90th percentile is defined as follows: If one or more of the past ten or fewer samples show less than 70 percent survival, then survival of less than 70 percent on the next sample represents a violation of the effluent limitation.

c. 3-sample median is defined as follows: If one of the past two or fewer samples shows less than 90 percent survival, then survival of less than 90 percent on the next sample represents a violation of the effluent limitation.

Table 4-4: Critical Life Stage Toxicity Test Species and Protocols[a]

SPECIES	BIOLOGICAL EFFECTS EVALUATED	CALIFORNIA RESIDENT	LAB VS. WILD STOCK
FRESHWATER			
Ceriodaphnia sp. (Crustacean)	survival, reproduction	N	Lab
Pimephales promelas (Fathead minnow)	survival, growth	Y	Lab
Selenastrum capricornutum (unicellular algae)	cell division rate	N	Lab
MARINE			
Mysidopsis bahia (Crustacean)	survival, growth, fecundity	N	Lab
Molluscs Mytilus edulis (mussel) Crassostrea gigas (oyster) Halotis rufescens (abalone)	embryo development, survival	Y	Wild or Field-cultured
Echinoderms Strongylocentrotus purpuratus, S. franciscanus (urchins) Dendraster excentricus (sand dollar)	fertilization success	Y	Wild
Diatom Plants Skeletonema costatum Thalassiosira pseudonana	cell division rate	Y	Lab
Macrocystis pyrifera (giant kelp)	percent germination, germ tube length	Y	Wild
Champia parvula (red algae)	number of cystocarps	N	Lab
MARINE/BRACKISH			
Menidia berylina	survival, larval growth	Y	Lab

Notes:
a. All technical references and discussion are contained in "Modified Guidelines: Effluent Toxicity Characterization Program," September 1991, San Francisco Bay Regional Water Quality Control Board.

Table 4-5: Conditions that Require Monthly Monitoring of Toxicity Levels

Discharger Monitoring Frequency	Shallow Water Dischargers	Deep Water Dischargers
Quarterly		
Three-sample median[a]	> 1 TU_C	> 10 TU_C
Single-sample maximum	> 2 TU_C	> 20 TU_C
Semi-annually or annually		
Single-sample maximum	> 1 TU_C	> 10 TU_C

NOTES:
a. Exceedance of the three-sample median is defined as follows: If one of the past two or fewer samples shows greater than the toxicity threshold listed above, then a chronic toxicity value greater than the threshold on the next sample represents an exceedance.

Table 4-6: Controlling Wet-weather Overflows

Levels of Water Quality Protection	Appropriate Level of Treatment
A Complete protection for areas where the aquatic environment should be free of any identifiable risk from the discharge of untreated waste (i.e., shellfish beds for year-round harvesting).	Secondary treatment up to 20-year recurrence interval; above 20-year overflows allowed.
B Areas that do not need complete year-round protection, such as shellfish beds for dry-weather harvesting, public beaches, and other water contact areas.	Secondary treatment for all flows up to two-year recurrence interval; primary treatment up to 20-year recurrence interval; above 20-year overflows allowed.
C Areas where water quality or aquatic productivity may be limited due to the pollution effects of a dense human population or other urban activities that are largely uncontrollable. Such areas may include some shipyards and harbors.	Secondary treatment to half-year recurrence interval; primary treatment to five-year recurrence interval; above five-year overflows allowed.

Table 4-7: Publicly Owned Treatment Works (POTWs)

POTW Facility Name	Outfall Location[a]	Flow[b] (MGD)	Treatment Level	Discharge Point Latitude	Discharge Point Longitude	Comment
City of American Canyon	1	2.5	Advanced	38 11 11	122 16 27	
City of Benecia	2	4.5	Secondary	38 02 30	122 09 03	
City of Burlingame	3	5.5	Secondary	37 39 55	122 21 41	Discharge through North Bayside outfall
City of Calistoga	4	0.84	Advanced	38 33 34	122 33 28	With dry weather reclamation
Central Contra Costa S.D.	5	53.8	Secondary	38 02 44	122 05 55	
Central Marin Sanitation A.G.	6	10	Secondary	37 56 54	122 27 23	
Contra Costa Co. S.D. No. 5	7	0.025	Secondary	38 02 55	122 10 56	
Delta Diablo S.D.	8	16.5	Secondary	38 01 40	121 50 14	
East Bay Dischargers Authority (EBDA)	9	77.1	Secondary	37 41 40	122 17 42	Common outfall for EBDA and LAVWMA
- City of Hayward			Secondary			EBDA member (16.5 mgd)
- Oro Loma S.D.			Secondary			EBDA member (20 mgd)
- City of San Leandro			Secondary			EBDA member (7.6 mgd)
- Union S.D.			Secondary			EBDA member (33 mgd)
East Bay MUD	10	120	Secondary	37 49 02	122 20 55	
Fairfield Suisun Sewer Dist.	11	17.5	Secondary	38 12 33	122 03 24	With dry weather reclamation
Las Gallinas Valley S.D.	12	2.92	Secondary	38 01 32	122 30 58	
Livermore-Amador Valley WMA (LAVWMA)	9	20	Secondary			Discharge to EBDA outfall
Dublin/San Ramon S.D.			Secondary			LAVWMA member (11.5 mgd)
City of Livermore			Secondary			LAVWMA member (5.25 mgd)

POTW Facility Name	Outfall Location[a]	Flow[b] (MGD)	Treatment Level	Discharge Point Latitude	Discharge Point Longitude	Comment
Marin Co. S.D. #5	13	0.98	Secondary	37 52 12	112 27 05	
City of Millbrae	3	3.0	Secondary	37 39 55	122 21 41	Discharge thru North Bayside outfall
Mountain View S.D.	14	2.4	Secondary	38 01 12	122 05 47	
Napa S.D.	15	15.4	Advanced	38 14 09	122 17 10	W/dry weather reclamation
N. San Mateo Co. S.D.	16	8.0	Secondary	37 42 48	122 30 50	
Novato S.D.	17	6.55	Secondary	39 04 00	122 29 00	
City of Pacifica	18	3.3	Advanced	37 36 53	122 29 16	
City of Palo Alto	19	39	Advanced	37 27 11	122 06 36	
City of Petaluma	20	5.2	Secondary	38 12 33	122 34 22	W/dry weather reclamation
Cities of Pinole & Hercules	21	4.06	Secondary	38 03 06	122 15 55	Share outfall w/ Rodeo
Rodeo S.D.	21	1.14	Secondary	38 03 06	122 15 55	Share outfall w/ Pinole/Hercules
City & Co. of S.F., Southeast	22	85.4	Secondary	37 44 58	122 22 22	
City & Co. of S.F., Oceanside	23	43	Secondary	37 42 18	122 34 39	
City & Co. of S.F., Int. Airport	3	2.2	Secondary	37 39 55	122 21 41	Discharge through North Bayside outfall
San Jose/Santa Clara WPCP	24	167	Advanced	37 26 06	121 57 08	
City of San Mateo	25	13.6	Advanced	37 34 50	122 14 45	
Sausalito-Marin City S.D.	26	1.8	Secondary	37 50 37	122 28 03	
Sewer Authority Mid-Coastside	27	4.0	Secondary	37 28 23	122 27 00	
Sewerage Agency of So. Marin	13	3.6	Secondary	37 52 12	121 27 05	

POTW Facility Name	Outfall Location[a]	Flow[b] (MGD)	Treatment Level	Discharge Point Latitude	Discharge Point Longitude	Comment
Sonoma Valley County S.D.	28	3.0	Secondary	38 14 14	122 25 51	W/dry weather reclamation
So. Bayside System Authority	29	29	Secondary	37 33 48	122 12 55	
So. S.F./San Bruno WQCP	3	13	Secondary	37 39 55	122 21 41	
City of St. Helena	30	0.5	Secondary	38 30 10	122 26 15	W/dry weather reclamation
City of Sunnyvale	31	29.5	Advanced	37 26 00	122 02 00	
U.S. Navy Treasure Island	32	2.0	Secondary	37 49 50	122 21 25	As part of base closure will be transferred to City & Co. of S.F.
Vallejo Sanitation & Flood Control	33	15.5	Secondary	38 03 53	122 13 42	W/dry weather reclamation
West County Agency, WCA	34	28.5	Secondary	37 54 47	122 25 06	WCA common outfall
City of Richmond			Secondary			WCA member (16 mgd)
West County Wastewater Dist.			Secondary			WCA member (12.5 mgd)
Town of Yountville	35	0.55	Advanced	38 24 30	122 20 25	W/dry weather reclamation

NOTES:
a. Figure 4-1 shows corresponding outfall locations.
b. Dry weather flow as identified in current permits. MGD is million gallons per day.

Table 4-8: Major Industrial Discharge Outfalls

Industrial Discharger	Outfall Location	Industrial Category	Treatment	Discharge Point Latitude	Discharge Point Longitude
C & H Sugar	1	Sugar refining	Activated sludge	30 03 30	122 13 28
Chevron Chemical	2	Chemical manufacting	Pond	37 58 15	122 25 45
Chevron U.S.A.	2	Petroleum refining	Activated sludge / wetland	37 58 15	122 25 45
ConocoPhilips	3	Petroleum refining	Activated sludge / pond / carbon	38 03 22	122 15 36
Dow Chemical Co.	4	Chemical manufacturing	Neutralization / activated carbon	38 01 48	121 51 07
General Chemical Corp. Bay Point Works	5	Chemical manufacturing	Neutralization / pond	38 02 48	121 59 10
Pittsburg Power Plants	6	Steam electric power	Filtration	38 02 30	121 53 20
Rhodia, Inc.	7	Sulfuric acid regeneration	Neutralization / pond	38 02 18	122 07 01
San Francisco Int'l Airport	8	Various	Physical / chemical		
Shell Oil Company	9	Petroleum refining	Activated sludge / carbon	38 01 56	122 07 44
Tesoro Refining	10	Petroleum refining	Pond / RBC / carbon	38 02 54	122 05 22
USS-Posco Industries	11	Steel finishing	Physical / chemical	38 01 48	121 51 32
Valero Refining Co.	12	Petroleum refining	Activated sludge / carbon	38 03 18	122 07 07

Table 4-9: Status of Urban Runoff Control Programs

MUNICIPALITIES CONDUCTING BASELINE CONTROL PROGRAMS

CITIES		COUNTIES
Belvedere	Petaluma	Marin
Benecia	Ross	Napa
Calistoga	San Anselmo	Solano
Corte Madera	San Rafael	Sonoma
Fairfax	Sausalito	
Larkspur	Sonoma	
Mill Valley	St. Helena	
Napa	Tiburon	
Novato	Yountville	

ENTITIES CONDUCTING COMPREHENSIVE CONTROL PROGRAMS

LOCALE	PERMITTED ENTITY	COMPLETE CHARACTERIZATION OF STORMWATER QUALITY AND RUNOFF POLLUTANT LOADING?	DATE PERMITTED
Santa Clara County	Santa Clara Valley Nonpoint Source Pollution Control Program	Yes	1990
Alameda County	Alameda County Urban Runoff Clean Water Program	Yes	1991
San Mateo County	San Mateo County Stormwater Pollution Prevention Program	Yes	1993
Contra Costa County	Contra Costa Clean Water Program	Yes	1993
Vallejo	City of Vallejo	No	Applied in 1994
Suisun City	City of Suisun City	No	Applied in 1994
Fairfield	City of Fairfield	No	Applied in 1994

Table 4-10: Potential Consequences and Impacts of Dredging and Dredged Material Disposal

Consequences	Impacts
Bottom disturbance	Mastication of sediment-inhabiting organisms; smothering of organisms living in or on the bottom; habitat disruption
Suspended solids loading	Abrasion and clogging of gills (fish and clams); impaired respiration, feeding, and excretory functions; reduced water pumping rates (clams); retarded egg development and reduced growth and survival of larvae
Dissolved oxygen reduction	Reduced efficiency of oxygen uptake by aquatic organisms; increased stress on organisms resulting in reduced ability to meet environmental and biological demands
Mobilization of toxicants adsorbed to sediments	Uptake and accumulation by aquatic organisms
Release of biostimulatory substances (nitrogen, phosphorus, ammonia)	Stimulation of algal growth; ammonia toxicity

Table 4-11: Goals of the Long Term Management Strategy

1) Maintain those channels in the SF Bay Estuary which are necessary for navigation, in an environmentally and economically sound manner and eliminate unnecessary dredging activities in the region.
2) Conduct dredged material disposal activities in the most environmentally sound manner.
3) Maximize the use of dredged material as a resource.
4) Establish a cooperative permitting framework for dredging permit applications.

Table 4-12: LTMS Participants

EXECUTIVE COMMITTEE

- Corps of Engineers, South Pacific Division, Commander
- U.S. EPA, Region IX, Regional Administrator
- State Dredging Coordinator
- San Francisco Bay Conservation and Development Commission, Chairperson
- San Francisco Bay Regional Water Quality Control Board, Chairperson

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MANAGEMENT COMMITTEE

- Corps of Engineers, San Francisco District, District Engineer
- Corps of Engineers, San Francisco District, LTMS Program Manager
- U.S. EPA, Region IX, Regional Administrator
- San Francisco Bay Conservation and Development Commission, Executive Director
- San Francisco Bay Regional Water Quality Control Board, Executive Officer
- State Water Resources Control Board, Executive Director

POLICY REVIEW COMMITTEE

- Other state and federal agencies with an interest in San Francisco Bay Area dredging (e.g., U.S. Navy, California State Department of Boating and Waterways, State Lands Commission)
- Bay Area ports and marinas
- Environmental and fishing organizations
- Development interests and other interested parties

WORK GROUPS

- Staff of RWQCB Chair of In-bay studies
- Staff of BCDC Chair of Upland/Non-aquatic and Reuse studies
- Staff of U.S. EPA Chair of Ocean Studies
- Varying levels of participation by the organizations listed above

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IMPLEMENTATION COMMITTEE

Ad-hoc leadership and varying levels of participation by the organizations listed above

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TECHNICAL/SCIENCE ADVISORY PANEL

Semi-annual meetings of panel by five experts in the areas of:

- Physical processes,
- Chemistry,
- Benthic community analysis,
- Sediment toxicology, and
- A representative of the Corps of Engineers' national laboratory.

Table 4-13: Dredged Material Volume Targets

ANNUAL
The following volume targets shall be utilized each calendar year (i.e., January to December) at each aquatic disposal site:

Alcatraz Island (SF-11)	4.0 million cubic yards
San Pablo Bay (SF-10)	0.5 million cubic yards
Carquinez Strats (SF-9)	2.0 million cubic yards (Normal Water Year)[a] 3.0 million cubic yards (Wet Water Year)

MONTHLY
The following volume targets shall be utilized on a monthly basis at each aquatic disposal site:

Alcatraz Island (SF-11)	October – April	1.0 million cubic yards
	May – September	0.3 million cubic yards
San Pablo Bay (SF-10)	Any month	0.5 million cubic yards
Carquinez Strats (SF-9)	Any month	1.0 million cubic yards

NOTES:

a. Water year classifications are designated by the California Department of Water Resources (DWR). The DWR water year begins on October 1 and is based on unimpaired flows as defined in the State Water Board's Water Rights Decision 1485.

Table 4-14: Inactive Mine Sites

Number	Mine Name	Associated Material
1	Snowflake	magnesite
2	Palisade	mercury
3	Silverado	mercury
4	La Joya	mercury
5	Hastings	mercury
6	St. John's	mercury
7	Borges	mercury
8	H. Corda	mercury
9	Cycle	mercury
10	Franciscan	mercury
11	Chileno Valley	mercury
12	Gambonini	mercury
13	Union Gulch	copper
14	Leona Heights	pyrite
15	Alma	pyrite
16	Black Diamond	coal
17	Buckhorn	manganese
18	Man Ridge	manganese
19	Section 14	coal
20	Newman	chromite
21	Livermore Coal	coal
22	Pendarin	coal
23	Camp 9	manganese
24	Challenge	mercury
25	Hillsdale	mercury
26	Silver Creek	mercury
27	Winegar	manganese
28	Fable Manganese	manganese
29	Western	magnesite
30,31	Maltby	magnesite
32	Keller	magnesite
33	Queenbee No. 1	manganese
34	Blackhorse	manganese
35	Black Eagle	manganese
36	Jones Group	manganese
37	Mexican Deposits	manganese
38	Pine Ridge	manganese
39	April	mercury
40	Cristobal	mercury
41	San Francisco	mercury
42	San Pedro Pit	mercury
43	Enriquita	mercury
44	San Mateo	mercury
45	Senator	mercury
46	Guadalupe Mines	mercury
47	Hooker Creek	copper
48	Marine Magnes Div.	magnesium salts

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CHAPTER 5: PLANS AND POLICIES

In addition to the Water Quality Control Plan (Basin Plan), many other plans and policies direct San Francisco Bay Regional Water Quality Control Board (Water Board) actions or clarify the Water Board's intent. The following pages describe numerous State Water Resources Control Board (State Water Board) plans and policies and Water Board policies.

All of these policies may be revised periodically. Contact the State Water Board and the Water Board for further information.

5.1 STATE WATER BOARD PLANS AND POLICIES

STATE AND REGIONAL WATER BOARDS WATER QUALITY COORDINATING COMMITTEE — RESOLUTION NO. 68-1

By adopting the Resolution, the Water Board approved a State and Regional Water Boards Coordinating Committee for the purpose of (1) coordinating and exchanging technical and administrative information; (2) augmenting staff support to the Water Quality Advisory Committee of the State Water Board; and (3) recommending action to be taken on water quality programs.

ANTIDEGRADATION POLICY — RESOLUTION NO. 68-16

The "Statement of Policy with Respect to Maintaining High Quality of Waters in California," known as the Antidegradation Policy, adopted in 1968, requires the continued maintenance of existing high quality waters. It provides conditions under which a change in water quality is allowable. A change must:

- Be consistent with maximum benefit to the people of the State,
- Not unreasonably affect present and anticipated potential beneficial uses of water, and
- Not result in water quality less than that prescribed in water quality control plans or policies.

STATE POLICY FOR WATER QUALITY CONTROL

The "State Policy for Water Quality Control", adopted in 1972, declares the State Water Board's intent to protect water quality through the implementation of water resources management programs. It serves as the general basis for subsequent water quality control policies.

POLICY REGARDING WATER RECLAMATION — RESOLUTION NO. 77-1

This resolution adopted in 1977 requires the State and Regional Water Boards to encourage water recycling projects for beneficial use using wastewaters that would otherwise be discharged to marine or brackish receiving waters or evaporation ponds. The resolution also specifies using recycled water to replace or supplement the use of fresh water or better water quality water, and to preserve, restore, or enhance in-stream beneficial uses, including fish, wildlife, recreation and esthetics associated with any surface water or wetlands.

BAYS AND ESTUARIES POLICY — RESOLUTION NOS. 74-43 AND 95-84

The "Water Quality Control Policy for the Enclosed Bays and Estuaries of California" (Bays and Estuaries Policy), adopted in 1974 and amended in 1995, provides water quality principles and guidelines for the prevention of water quality degradation and the protection of beneficial uses of waters.

THERMAL PLAN (1975)

The "Water Quality Control Plan for the Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California" (known as the Thermal Plan), adopted in 1972 and amended in 1975, specifies water quality objectives, effluent quality limits, and discharge prohibitions related to elevated temperature waste discharges to interstate waters, enclosed bays, and estuaries.

POWERPLANT COOLING POLICY — RESOLUTION NO. 75-58

The "Water Quality Control Policy on the Use and Disposal of Inland Waters Used for Powerplant Cooling" (Powerplant Cooling Policy), adopted in 1975, specifies the State Water Board's position on powerplant cooling, specifying that fresh inland waters should be used for cooling only when other alternatives are environmentally undesirable or economically unsound.

POLICY ON DISPOSAL OF SHREDDER WASTE — RESOLUTION NO. 87-22

In 1987, the State Water Board adopted this policy that describes specific conditions to be enforced by the Regional Water Boards with regards to disposal of mechanically destructed car bodies, old appliances, or other similar castoffs at landfills.

POLICY REGARDING THE UNDERGROUND STORAGE TANK PILOT PROGRAM — RESOLUTION NO. 88-23

This policy adopted in 1988 implements a pilot program to fund oversight of remedial actions at leaking underground storage tank sites, in cooperation with the Department of Health Services.

SOURCES OF DRINKING WATER POLICY — RESOLUTION NO. 88-63

This policy, adopted by the State Water Board in 1988 and incorporated into the Basin Plan in 1989 (Water Board Order No. 89-039), established state policy that all surface and groundwater in the state are considered suitable, or potentially suitable, for municipal or domestic supply (MUN) and should be designated for this use, with certain exceptions.

NONPOINT SOURCE MANAGEMENT PLAN — RESOLUTION NO. 88-123

The "Nonpoint Source Management Plan" adopted in 1988 outlines the objectives and framework for implementing source control programs, with an emphasis on voluntary Best Management Practices and cooperation with local governments and other agencies.

RESOURCE VALUE OF TREATED GROUNDWATER — RESOLUTION NO. 89-21

The State Water Board, in approving the Water Board's guidelines for the disposal of extracted groundwater from groundwater clean-up projects, urges the Water Board to recognize the resource value of treated groundwater and to maximize its utilization for the highest beneficial uses for which applicable water quality standards can be achieved.

OCEAN PLAN — RESOLUTION NO. 90-27

The "Water Quality Control Plan for Ocean Waters of California" (Ocean Plan) adopted in 1990 establishes beneficial uses and water quality objectives for waters of the Pacific Ocean adjacent to the California coast outside of enclosed bays, estuaries, and coastal lagoons. The Ocean Plan prescribes effluent quality requirements and management principles for waste discharge and specifies certain waste discharge prohibitions.

POLLUTANT POLICY FOR SAN FRANCISCO BAY AND THE DELTA — RESOLUTION NO. 90-67

In 1990, the State Water Board adopted the "Pollutant Policy Document," which identifies and characterizes the pollutants of greatest concern in the Bay-Delta Estuary. This policy requires implementation of a mass emission strategy; a monitoring and assessment program; and strategies for discharges from boat yards, drydock facilities, and dredge disposal practices. In 1990, the Water Board passed a resolution directing implementation of the Pollutant Policy.

POLICIES AND PROCEDURES FOR INVESTIGATION AND CLEANUP AND ABATEMENT OF DISCHARGES — RESOLUTION NOS. 92-49 AND 96-79

This policy defines the goal of pollution cleanup and abatement as achieving the best quality of water that is reasonable. In certain cases where it is not reasonable to restore water quality to background levels, case-by-case clean-up levels may be specified, subject to the water quality provisions of the Basin Plan, beneficial uses of the waters, and maximum benefit to the people of the state. The State Water Board may determine that establishment of a containment zone is appropriate and consistent with the maximum benefit to the people of the State if applicable requirements contained in the Policy are satisfied.

DEPARTMENT OF DEFENSE AND STATE MEMORANDUM OF AGREEMENT 1992

In 1992, the State signed a cooperative agreement with the Department of Defense, Defense-State Memorandum of Agreement (DSMOA). The Deparment of Toxic Substances Control (DTSC) acts as the State's agent. Both the State and Regional Water Boards coordinate with DTSC to allocate agency responsibility and funding and establish procedures under which site investigation and cleanup will proceed, decisions will be made, and disputes will be resolved.

CALIFORNIA WETLANDS CONSERVATION POLICY (EXECUTIVE ORDER W-59-93)

This policy, adopted in 1993, established state guidelines for wetlands conservation. The primary goal is to ensure no overall net loss and to achieve a long-term net gain in the quantity, quality, and permanence of wetland acreage in California.

POLICY FOR REGULATION OF DISCHARGES OF MUNICIPAL SOLID WASTE — RESOLUTION NO. 93-62

Adopted in 1993, this policy directs the Regional Water Boards to amend waste discharge requirements for municipal solid waste landfills to incorporate pertinent provisions of the federal "Subtitle D" regulations under the Resource Conservation and Recovery Act (RCRA).

DELTA PLAN — RESOLUTION NO. 95-24

The "Water Quality Control Plan for the Sacramento-San Joaquin Delta and Suisun Marsh" (Delta Plan), adopted in 1978, and Water Rights Decision No. 1485 designate beneficial uses and establish water quality (salinity) and flow standards to protect the beneficial uses in State waters from the large scale water operations under the State Water Project and Central Valley Project. In 1991, the State Water Board adopted the Water Quality Control Plan for Salinity, which supersedes the 1978 Delta Plan. The 1991 Plan does not establish Delta outflow standards.

In 1995, the State Water Board adopted Resolution No. 95-24 updating the 1991 Delta Plan. The Bay-Delta Plan protects the same beneficial uses that were protected by the 1991 Plan. The definitions of the beneficial uses, however, were changed non-substantively to ensure consistency with the State Water Board's policy.

MEMORANDUM OF AGREEMENT (MOA) BETWEEN THE DEPARTMENT OF HEALTH SERVICES AND THE STATE WATER BOARD ON USE OF RECLAIMED WATER (1996)

This MOA is intended to assure that the respective authority of DHS, the State Water Board, and the Regional Water Boards relative to use of recycled water will be exercised in a coordinated and cohesive manner to eliminate overlap of activities, duplication of effort, gaps in regulation, and inconsistency of action. It provides an important coordination role in the Water Board's recycled water regulation and resulted in the Water Board developing its General Water Reuse Permit (Order 96-011) and recycled water program.

POLICY FOR THE IMPLEMENTATION OF TOXICS STANDARDS FOR INLAND SURFACE WATERS, ENCLOSED BAYS, AND ESTUARIES OF CALIFORNIA (SIP) — RESOLUTION NOS. 2000-0015 AND 2000-0030

The State Water Board adopted the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Plan, or SIP) in 2000. U.S. EPA subsequently approved all aspects of the SIP, except the TMDL Compliance Schedule provision. The SIP contains implementation provisions for 126 priority toxic pollutant criteria found within the National Toxics Rule, the California Toxics Rule and for priority pollutant objectives found in Basin Plans. The SIP applies to discharges of toxic pollutants and allows for a standardized approach for permitting, maintaining statewide consistency.

THE WATER QUALITY ENFORCEMENT POLICY — RESOLUTION NO. 2002-0040

The primary goal of the Enforcement Policy, adopted in 2002, is to create a framework for identifying and investigating instances of noncompliance, for taking enforcement actions that are appropriate in relation to the nature and severity of the violation, and for prioritizing enforcement resources to achieve maximum environmental benefits.

COOPERATIVE AGREEMENT WITH DEPARTMENT OF NAVY FOR REGULATORY OVERSIGHT AT NAVAL FACILITIES — RESOLUTION NO. 2003-0043

The Department of Navy and the State Water Board agreed to remove the remaining Navy facilities from the DSMOA and place those facilities into the Navy Cost Recovery program.

POLICY FOR IMPLEMENATATION AND ENFORCEMENT OF THE NONPOINT SOURCE POLLUTION CONTROL PROGRAM (2004)

This policy adopted in 2004 is designed to assist all responsible and/or interested parties in understanding how the State's nonpoint source pollution (NPS) water quality requirements will be implemented and enforced.

WATER QUALITY CONTROL POLICY FOR DEVELOPING CALIFORNIA'S CLEAN WATER ACT SECTION 303(d) LIST — RESOLUTION NO. 2004-0063

This policy adopted in 2004 describes the process by which the State and Regional Water Boards will comply with the listing requirements of Section 303(d) of the federal Clean Water Act. The objective of the policy is to establish a standardized approach for developing California's Section 303(d) water body list in order to achieve water quality standards and maintain beneficial uses in California's surface waters.

MEMORANDUM OF AGREEMENT BETWEEN DTSC, STATE WATER BOARD, WATER BOARDS, AND CAL/EPA FOR THE OVERSIGHT OF INVESTIGATION AND CLEANUP ACTIVTIES AT BROWNFIELD SITES (2005)

The purpose of the Brownfield Memorandum of Agreement (MOA) is to improve coordination between the Department of Toxic Substances Control (DTSC), the State Water Board and the Regional Water Boards regarding the oversight of cleanup activities at Brownfield sites. The MOA was developed in 2005 to ensure effective and expeditious cleanup of Brownfield sites in a manner that is protective of both public health and safety and the environment.

5.2 WATER BOARD PLANS AND POLICIES

Plans and policies adopted by the Water Board are classified under the following headings for easy reference.

Resolutions adopted prior to the revsion date of the 1995 Basin Plan are superceded unless specifically incorporated by reference into the plan. A discussion of each of the current Water Board Policies is under the appropriate heading.

- Cooperative Agreements
- Regional Monitoring, Data Use, and the Aquatic Habitat Program
- Discharger Reporting and Responsibilities
- Delta Planning
- Dredging
- Nonpoint source pollution
- Onsite Waste Dispersal and Waste Discharge
- Shellfish

- Vessel Wastes
- Water Recycling
- Wetlands
- Groundwater

5.2.1 COOPERATIVE AGREEMENTS

Many different local, state, and federal agencies oversee activities that affect the beneficial uses of the Region. To ensure that these activities are coordinated to the greatest possible degree, the Water Board enters into formal cooperative agreements. These agreements indicate the specific issue area of concern to both agencies and may also describe processes by which coordination will take place. Agreements regarding general coordination are listed below. Others are listed under specific issue areas.

MEMORANDUM OF UNDERSTANDING WITH THE DEPARTMENT OF FISH AND GAME — 1966

The Water Board has no means to conduct surveillance of ocean waters within its jurisdiction. Under the terms of this MOU, the Department of Fish and Game (DFG) agrees to notify the Water Board of any suspected violations of the Water Board's requirements for ocean disposal.

COORDINATION WITH THE SAN FRANCISCO BAY CONSERVATION AND DEVELOPMENT COMMISSION (BCDC)

In 1966, the Water Board stated its intent to cooperate with the San Francisco Bay Conservation and Development Commission (BCDC) to the fullest extent necessary to ensure the protection of the San Francisco Bay shoreline and water quality (Resolution No. 737). In 1970, the Water Board urged BCDC to (1) require wastes resulting from projects permitted by BCDC to be connected to existing sewer lines; and (2) disapprove or temporarily withhold approval of any project that would cause added waste loading on a community sewerage system that is not meeting Board waste discharge requirements (Resolution No. 70-19).

LOCAL AGENCY FORMATION COMMISSIONS — RESOLUTION NO. 73-17

This Resolution describes actions that the Water Board and these commissions could take that would result in a coordinated effort to prevent and abate pollution.

MEMORANDUM OF UNDERSTANDING BETWEEN THE DEPARTMENT OF FISH AND GAME, STATE ATTORNEY GENERAL'S OFFICE, AND THE WATER BOARD ON NEGOTIATED SETTLEMENTS OF OIL SPILLS TO SAN FRANCISCO BAY FROM VESSELS TO SHORE FACILITIES DURING TRANSFER OPERATIONS

Due to the high frequency of oil spill events during the late 1970s, a MOU was developed between the Department of Fish and Game, the State Attorney General's Office and the Water Board to expedite enforcement of such spills. The MOU outlined a negotiated settlement process that emphasized industry preventative measures, a cleanup plan, and operational changes. In 1980 the Water Board contracted for a study and report to recommend technically feasible operational standards at marine transfer facilities in San Francisco Bay. The resulting 1980 report titled "Oil Pollution Prevention and Control in the San Francisco Bay Area" was instrumental in

changing the oil industry's operational procedures and a 90% reduction in oil transfer incidents over a two-year period.

MEMORANDUM OF UNDERSTANDING WITH THE COUNCIL OF BAY AREA RESOURCE CONSERVATION DISTRICTS (RCDS) — 1980

The purpose of this MOU is to combine the erosion control expertise of the Resource Conservation Districts (RCDs) with the regulatory authority of the Water Board to enforce erosion control measures. This action will increase the Water Board's ability to identify and correct erosion control problems associated with construction or agricultural activities.

WATER QUALITY MANAGEMENT: MOU WITH BCDC, STATE BOARD, AND THE WATER BOARD — NO. 87-154

This MOU specifies a coordination process for the three agencies to implement water quality goals mandated by State and federal legislation and states the Water Board's support in concept for legislation that would require a project applicant to obtain all discretionary approvals from the Water Board before filing its BCDC permit application.

POLICY TO PROMOTE COLLABORATION BETWEEN BAY AREA CLEAN WATER AGENCIES AND THE WATER BOARD ON POLLUTION PREVENTION — RESOLUTION NO. 2003-096

The Water Board and the Bay Area Clean Water Agencies (BACWA) agreed to pollution prevention guidelines and guiding principals in order to implement the requirements of Water Code Section 13263.3 and the Policy for Implementation of Toxic Substances for Inland Surface Waters, Enclosed Bays, and Estuaries (State Implementation Plan).

5.2.2 REGIONAL MONITORING, DATA USE, AND THE AQUATIC HABITAT PROGRAM

USE OF DATA COLLECTED BY THE AQUATIC HABITAT PROGRAM—RESOLUTION NO. 82-1

This resolution states how data collected by the Aquatic Habitat Program will be used and describes the Water Board's intent to seek the assistance of the University of California in data quality control and interpretation. Possible uses of data include: (a) revising water quality objectives; (b) relaxing or tightening effluent requirements; (c) enforcement action; (d) dissemination of information to the public; (e) determining sources of pollution; and (f) determining assimilative capacities of receiving waters.

MODIFIED GUIDELINES FOR THE EFFLUENT TOXICITY CHARACTERIZATION PROGRAM—RESOLUTION NO. 91-083

This resolution modifies the requirements of the Effluent Toxicity Characterization Program (adopted as a Basin Plan amendment in 1986) to make them more cost effective and responsive to the region's biomonitoring needs after several years' experience with the program.

REGIONAL MONITORING PROGRAM—RESOLUTION 92-043

In this resolution, the Water Board endorses the development and implementation of a comprehensive, Estuarywide monitoring program that will regularly collect information on concentrations of pollutants in water, sediment, and biota.

5.2.3 DISCHARGER REPORTING AND RESPONSIBILITIES

RESPONSIBILITY OF DISCHARGERS FILING TECHNICAL REPORTS—RESOLUTION NO. 67-3

This resolution requires those dischargers filing technical reports to submit a letter of transmittal signed by the discharger's senior administrative officer with reports involving formal time schedules and cease-and-desist orders.

SELF-MONITORING REPORTS—RESOLUTION NO. 73-16

With this resolution, the Water Board specified the format and requirements for filing self-monitoring reports.

CONTINGENCY PLANS—RESOLUTION 74-10

By adopting this resolution, the Water Board required dischargers to develop and implement contingency plans to assure continuous operation of facilities for the collection, treatment, and disposal of wastes.

WAIVING WASTE DISCHARGE REQUIREMENTS FOR SPECIFIC TYPES OF DISCHARGE—RESOLUTION NO. 83-3

The Water Board waived the requirement of filing report of waste discharge for specific types of waste discharge that have a relatively insignificant adverse effect on water quality.

5.2.4 DELTA PLANNING

SAN LUIS DRAIN—RESOLUTION NOS. 535 (1964) AND 81-1

The Water Board prohibits discharge by the proposed drain until evidence that the discharge would not threaten beneficial uses is submitted by the dischargers. The resolution (No. 535) also directs the staff to determine the beneficial uses of the proposed receiving waters and the conditions necessary for their protection. In 1981 (No. 81-1), the Board requested that the State Water Board, in close coordination with the Water Board, assume the lead role in the development, revision, renewal, and enforcement of waste discharge requirements for the proposed San Luis Drain.

PERIPHERAL CANAL—RESOLUTION NO. 80-6

In 1980, the Board expressed its concern regarding the adverse impacts on water quality of certain projects authorized by Senate Bill 200 and endorsed protective measures for the Delta, Suisun Bay, and San Francisco Bay.

5.2.5 DREDGING

REGULATION OF DREDGING SEDIMENT DISPOSAL—RESOLUTION NO. 80-10

This resolution acknowledges the U.S. Army Corps of Engineers' implementation of new procedures for evaluating dredged material. The Water Board agreed that the Corps should be responsible for the administration of the new procedures for evaluating discharges of dredged materials. The Water Board reserved the right to act to protect water quality, if necessary. The resolution also gave the Water Board's Executive Officer considerable discretion regarding additional water quality and sediment testing requirements, as well as monitoring for dredged sediment disposal impact.

DELEGATION OF AUTHORITY TO WAIVE CERTIFICATION FOR SMALL DREDGING PROJECTS—RESOLUTION NO. 87-53

In 1987, the Water Board delegated authority to the Executive Officer to waive water quality certification for activities involving the excavation and disposal of 50,000 cubic yards or fewer of San Francisco Bay sediments and the filling of two acres or fewer of wetlands.

POLICY ON DISPOSAL OF DREDGED MATERIAL AND NEW PROJECTS—RESOLUTION NO. 89-130

In 1989, the Water Board placed a limit on new dredging work, established annual and monthly targets for the volume of dredged material disposed of at designated sites, and restricted the disposal of dredged material to certain times of the year in order to protect migrating fish. The State Water Board subsequently modified the limits on new dredging (Resolution No. 90-10).

SCREENING CRITERIA AND TESTING REQUIREMENTS FOR USE OF SEDIMENT FOR WETLAND CREATION AND OTHER UPLAND USES—RESOLUTION NO. 92-145

In this resolution, the Water Board established screening criteria to be used to evaluate the appropriateness of using dredged material for beneficial purposes.

TESTING GUIDELINES FOR DREDGED MATERIAL DISPOSAL AT BAY AREA SITES—RESOLUTION NO. 93-009

The Water Board endorsed a set of testing guidelines developed in cooperation with the U.S. Army Corps of Engineers, U.S. EPA, and the Bay Conservation and Development Commission. To implement these guidelines, the Water Board also directed staff to work towards establishing a coordinated agency permit process for maintenance dredging permit applications.

5.2.6 NONPOINT SOURCE POLLUTION

CONTROL OF WATER POLLUTION FROM CONSTRUCTION OF DAMS—1953

The Water Board adopted this motion to reduce the possibility of erosion during the construction of dams. For small projects not likely to cause erosion problems, the motion recommends that the Executive Officer send a letter to the responsible person advising him or her to take appropriate

precautionary actions. For larger projects, the responsible person is required to submit a report of waste discharge.

SURFACE RUNOFF—RESOLUTION NO. 78-5

In this resolution, the Water Board acknowledges surface runoff as a significant source of pollution in the San Francisco Bay Basin and resolves to take appropriate actions (e.g., best management practices) to reduce pollution loads from surface water runoff.

EROSION CONTROL FROM CONSTRUCTION ACTIVITIES—RESOLUTION NO. 80-5

The Water Board, in this resolution, recognizes the seriousness of impacts on beneficial uses related to construction activities. The Water Board identifies local governments as having the responsibility for controlling erosion from development activities and for adopting and administering erosion control ordinances. The Water Board also stated its intent to monitor the progress of local governments in their adoption and implementation of effective erosion control programs.

DAIRY WASTES—RESOLUTION NOS. 74-11 AND 77-5

In 1974, the Water Board passed Resolution No. 74-11, which prohibits the discharge of manure into a watercourse subject to flooding. This requirement augmented the State Water Board's "Minimum Guidelines for Animal Waste Management." Full compliance was initially scheduled to occur by September 1977, but was extended to 1978 for dairies outside the Tomales Bay and Walker Creek watersheds because of a severe drought (77-5).

INDUSTRIAL STORM WATER DISCHARGES—RESOLUTION NO. 92-118

In this resolution, the Water Board authorized additional monitoring and reporting requirements for dischargers holding industrial stormwater NPDES permits in cases where the watershed is known to be adversely impacted by storm water discharges, the pollution potential of the discharge cannot be assessed with the minimum information, or more information will lead to more effective control mechanisms.

LIABILITY FOR PARTIES ENGAGED IN ABANDONED MINE REMEDIATION—RESOLUTION NO. 93-078

In 1993, the Water Board expressed concern regarding the incentives for cleaning up mines thought to be responsible for roughly 60% of copper loading to the Delta.

5.2.7 ONSITE WASTE DISPERSAL AND WASTE DISCHARGE

The Water Board's policy on small waste discharge systems has evolved considerably as the Bay Area has become more developed. The following section summarizes a series of resolutions regarding conditions under which the Water Board would waive waste discharge reporting requirements. Generally, this waiver is only granted when a county or other government entity has an active permitting and monitoring program comparable to the Water Board's.

SEPTIC, LEACHING, AND SMALL COMMUNITY SYSTEMS—RESOLUTION NO. 81 (1951)

This resolution stated the Water Board's objection to the construction and use of wells for septic effluent disposal or street runoff, except when such wells discharge into geologic formations that at no time contained water suitable for domestic, agricultural, or industrial use.

WAIVER OF REQUIREMENT TO REPORT WASTE DISCHARGE FOR SYSTEMS REGULATED BY COUNTY AND LOCAL AGENCIES

In 1963 and 1964, the Water Board waived its regulatory authority over waste discharge reporting for family dwellings using discrete systems, as long as they were already regulated by local health departments and met certain conditions. In the same resolutions, the Water Board also urged local planning and legislative bodies to require connection to sewer systems for all new development whenever feasible. Resolutions were adopted for Alameda County (No. 512; 1963), Contra Costa County (No. 583; 1964), Napa County (No. 596; 1964), San Mateo County (No. 597; 1964), Solano County (No. 598; 1964), Sonoma County (No. 599; 1964), and Santa Clara County (No. 600; 1964). The Solano County waiver (Res. 598) was later amended by Resolution No. 75-12 in 1975, which indicated that the waiver would not apply to planned unit development with minimum lot sizes smaller than 2.5 acres and by Resolution 83-1 (1983).

The Water Board's general policy on discrete sewerage facilities was later amended by Resolution Nos. 78-14 (1978) and 79-5 (1979). The first described specific actions that would be taken by the Water Board when it was presented with a proposal for new discrete sewerage systems and what specific requests it would make of local governments. In 79-5, the Water Board set minimum guidelines for determining the adequacy of local ordinances for controlling individual wastewater treatment and disposal systems.

In 1980, the Water Board (Resolution No. 80-9) requested that the County of Alameda correct deficiencies in its individual waste treatment and disposal systems program, acting under policies adopted in the Alameda County waiver (Res. 512) and discrete sewerage policies (Res. 78-14 and 79-5). In 1981, the Water Board rescinded Resolution No. 597 and reissued a policy (Resolution No. 81-9) on waiving reporting of discharges from individual wastewater treatment and disposal systems in San Mateo County. The Contra Costa County Waiver was amended in 1983 (Res. 83-2), and the Marin County Waiver in 1984 (Res. 84-12).

SEWER AND ONSITE SEWER DISPOSAL IN BOLINAS — RESOLUTION NOS. 85-007 AND 87-091

The Water Board indicated its support of a moratorium on new sewer connections and new onsite sewage disposal systems adopted by Marin County Board of Supervisors.

SPECIFIC PROHIBITIONS OF ONSITE DISPOSAL SYSTEMS FOR STINSON BEACH AND GLEN ELLEN (RESOLUTION NOS. 73-13 AND 73-14) AND EMERALD LAKE HILLS (RESOLUTION NO. 76-7)

These resolutions prohibited waste discharges to onsite disposal systems in the Stinson Beach (Marin County), Glen Ellen (Sonoma County), and Emerald Lake Hills and Oak Knoll Manor (San Mateo County) areas, with some exceptions to the prohibition. Resolution No. 73-13 has since been amended or clarified in Resolution Nos. 73-18, 74-5, 74-6, 77-2, 78-1, and 81-5.

Resolution No. 78-1 conditionally amended the prohibition of discharge outlined in 73-13 by allowing the discharge of waste to individual leaching or percolation systems where such discharges are regulated by the Stinson Beach County Water District.

CITY OF NOVATO — RESOLUTION NO. 87-155

In this resolution, the Water Board stated its policy regarding a waiver of waste discharge reporting requirements from individual wastewater treatment systems in the City of Novato.

MEMORANDUM OF UNDERSTANDING WITH NAPA COUNTY REGARDING WINERY PROCESS TREATMENT AND DISPOSAL — 1982 (UPDATED IN 1992)

Under this agreement, the Water Board approved Napa County's program for monitoring winery onsite disposal.

5.2.8 SHELLFISH

POLICY STATEMENT WITH RESPECT TO THE IMPLEMENTATION OF TIME SCHEDULES FOR FACILITIES TO PROTECT SHELLFISH — RESOLUTION NO. 74-14

In this resolution the Water Board directed the Executive Officer to determine whether or not dischargers were providing or would be providing adequate protection to allow for sport harvesting of shellfish. The Water Board also stated its intent to adopt a time schedule for protection (in conformance with staff guidelines).

SHELLFISH PROGRAM — RESOLUTION NOS. 78-8 AND 83-10

The first resolution directs the Executive Officer to develop and implement a program to determine the feasibility of opening shellfish beds for recreational use. The second resolution describes a phased shellfish protection program in which discharge limits for dry-season runoff to Anza Lagoon and other South Bay sites would be considered. In addition, the Water Board urged BCDC to consider ways to eliminate or minimize potential dry season runoff from planned projects and directed review of discharger self-monitoring studies to determine when additional data are necessary to avoid effects on shellfish beds.

DESIGNATION OF TOMALES BAY UNDER THE 1993 SHELLFISH PROTECTION ACT — RESOLUTION NO. 94-018

In this resolution, the Water Board identified Tomales Bay as an area where commercial shellfishery is threatened and authorized the formation of a technical advisory committee to investigate and develop a remediation strategy.

5.2.9 VESSEL WASTES

VESSEL SEWAGE DISCHARGE POLICY — RESOLUTION NO. 665 (1965)

The Water Board, in this resolution, expressed concern over the discharge of untreated sewage from certain vessels over which it does not have jurisdiction. The Board suggested that the discharge of vessel wastes be regulated by the federal government.

URGING BCDC TO REQUIRE SHORESIDE VESSEL WASTE FACILITIES — RESOLUTION NO. 70-1 (1970)

This resolution urged BCDC to require applicants for new or expanded marinas or port facilities to provide the following as permit conditions: (l) dockside sewers; (2) pump‗out facilities at marinas with disposal to shoreside sewage facilities; and (3) adequate restroom facilities.

VESSEL WASTE DISCHARGES TO SAN FRANCISCO BAY — RESOLUTION NO. 70-65

Three recommendations were made in this resolution: (1) that owners of marinas provide dockside sewerage facilities and that owners of vessels with sanitary facilities install holding tanks; (2) that the State Water Board request the federal government to prohibit discharges of vessel wastes; and (3) that the legislature adopt legislation that would require waste holding tanks on vessels with sanitary facilities to transport the wastes to treatment plants.

VESSEL WASTE DISCHARGE INTO RICHARDSON BAY — RESOLUTION NO. 91-118

In this resolution, the Water Board found that the Richardson Bay Regional Agency's Implementation Plan and associated local ordinances will provide a mechanism for enforcing the prohibition against vessel waste discharge in the area.

5.2.10 WATER RECYCLING

WATER REUSE STUDY — RESOLUTION NO. 79-2

In this resolution, the Water Board stated its position regarding Phase II of the San Francisco Bay Area Water Reuse Study. The Water Board acknowledged the importance of using recycled water to meet California's future water supply needs and commented on the economics of the delivery of recycled water to users.

5.2.11 WETLANDS

USE OF WASTEWATER TO CREATE, RESTORE, AND ENHANCE MARSHLANDS — RESOLUTION NOS. 77-1 AND 94-086

These resolutions describe the Water Board's policy regarding the use of wastewater to create, restore, maintain, and enhance marshlands. In general, the policy supports the use of wastewater to support new wetland habitat, under the condition that beneficial uses established are fully protected.

USE OF CONSTRUCTED WETLANDS FOR URBAN RUNOFF POLLUTION CONTROL — RESOLUTION NO. 94-102

In this resolution, the Water Board expressed support for the construction of new wetland areas for the purpose of reducing pollutant loading from urban runoff, under certain conditions.

5.2.12 GROUNDWATER

DISPOSAL OF EXTRACTED GROUNDWATER FROM CLEAN-UP PROJECTS — RESOLUTION NO. 88-160

In this resolution, the Water Board established priorities for the disposal of water extracted from groundwater cleanup sites. The first priority is to reclaim effluents to the extent reclamation is technically and economically feasible. If this is not possible, then discharge to a municipal treatment plant was determined to be in the public interest. If neither reclamation nor discharge to a municipal plant is feasible, the Board will issue NPDES permits authorizing discharge from these sites.

CHAPTER 6: SURVEILLANCE AND MONITORING

6.1 REGIONAL MONITORING PROGRAM

The effectiveness of a water quality control program requires information supplied by comprehensive surveillance and monitoring of water, sediment, aquatic resources, and the human activities that have the potential to impact beneficial uses. The following section describes the monitoring programs that together provide high quality, comprehensive scientific information on water quality in the Region. The Water Board uses information produced by the programs described below to satisfy the requirements of Sections 104, 106, 208, 301, 303, 304, 307, 308, 314, and 402 of the federal Clean Water Act and applicable portions of the state's Porter-Cologne Water Quality Control Act.

The Regional Monitoring Program forms the core of water quality, sediment quality, and tissue (including bivalves and fish) monitoring in the Estuary. Historically, water quality in the Region was tracked by Water Board and State Water Board research and monitoring programs and numerous studies carried out by other interested state, federal, and local agencies.

From 1989 to 1992, the Water Board developed and implemented pilot programs for the San Francisco Estuary Regional Monitoring Program (RMP), through the Bay Protection and Toxic Cleanup Program (BPTCP) and U.S. EPA grants. In 1993, the RMP was formally established to provide integrated, comprehensive, and systematic information on water quality in the Region. Its goal is to evaluate the effectiveness of the Water Board's water quality program in meeting Basin Plan objectives, including protection of beneficial uses in the Estuary.

The Regional Monitoring Program's specific objectives are to:

1. Describe the distribution and trends of pollutant concentrations in the Estuary;
2. Project future contaminant status and trends using best understanding of ecosystem processes and human activities;
3. Describe sources, pathways, and loading of pollutants entering the Estuary;
4. Measure pollution exposure and effects on selected parts of the Estuary ecosystem (including humans);
5. Compare monitoring information to relevant benchmarks, such as total maximum daily load (TMDL) targets, tissue screening levels, water quality objectives, and sediment quality objectives; and
6. Effectively communicate information from a range of sources to present a more complete picture of the sources, distribution, fate, and effects of pollutants and beneficial use attainment or impairment in the Estuary ecosystem.

Every five years, an outside group of scientific experts reviews the RMP to assure it is fulfilling its objectives and providing useful and timely information regarding the Estuary. In 2002, the RMP status and trends component was revised to incorporate probabilistic monitoring. The 2002-2004 sample locations shown in Figure 6-1 were selected according to a probabilistic design. Each year sites are randomly selected and will be in different locations than shown in Figure 6-1. The list of parameters is presented in Table 6-1.

The RMP participants, including dredgers, stormwater agencies, and municipal and industrial dischargers that hold Water Board permits for waste discharge into the Estuary, fund the RMP as a requirement of their permits. The San Francisco Estuary Institute (SFEI), an independent nonprofit organization, administers and manages the program under a Memorandum of Understanding with the Water Board.

The RMP, through SFEI, produces an Annual Monitoring Report that summarizes the current state of the Estuary with regard to pollution, a summary report (Pulse of the Estuary), a quarterly newsletter, technical reports that document specific studies and synthesize information from diverse sources, and journal publications that disseminate RMP results to the world's scientific community.

6.2 SURFACE WATER AMBIENT MONITORING PROGRAM

In January 2000, the Surface Water Ambient Monitoring Program (SWAMP) was proposed in a Report to the Legislature to integrate existing water quality monitoring activities of the State and Regional Water Boards, and to coordinate with other monitoring programs. Water Code Section 13192 required the State Water Board to assess and report on the state monitoring programs and prepare a proposal for a comprehensive monitoring program. Water Code Section 13191 requires the State Water Board to convene an Advisory Group to assist in the evaluation of program structure and effectiveness, as it relates to the implementation of the requirements of Clean Water Act Section 303(d), applicable federal regulation, and monitoring and assessment programs.

Ambient monitoring refers to any activity in which information about the status of the physical, chemical and biological characteristics of the environment is collected to answer specific questions about the status and trends in those characteristics. For the purposes of SWAMP, ambient monitoring refers to these activities as they relate to the characteristics of water quality.

SWAMP is a statewide monitoring effort designed to assess the conditions of surface waters throughout the state of California. The State Water Board administers the program. Responsibility for implementation of monitoring activities resides with the nine Regional Water Boards that have jurisdiction over their specific geographical areas of the state.

In the Region, SWAMP is targeted to water bodies not monitored by the RMP. The numerous water bodies of the Region are listed in Table 2-1. SWAMP includes physical, chemical, and biological monitoring. SWAMP's focus is on water quality assessment in watersheds. SWAMP is intended to fulfill water quality assessment reporting requirements under Clean Water Act Section 305(b), and to support Clean Water Act Section 303(d) impairment decisions in cases where there is adequate information available to meet data requirements in the State Water Board's 303(d) Listing Policy, established in September 2004. The 305b and 303d requirements for the Estuary are met through the RMP, described in Section 6.1 Regional Monitoring Program.

In 1976, the state initiated the State Mussel Watch and State Toxic Substances Monitoring Programs to regularly monitor the concentration of pollutants in the tissue of aquatic organisms. Tissue levels reflect exposure over much longer periods of time than instantaneous water column samples and provide a field-based estimate for exposure of people, fish, and wildlife to pollutants in the food chain.

The Mussel Watch Program uses resident and transplanted bivalves to monitor pollutant levels at coastal reference stations and selected sites in bays and estuaries to confirm potential toxic substance pollution. The location of bivalve sampling stations in the Region are summarized in Figure 6-2 and Table 6-2. Periodic monitoring of bivalve tissue conducted by the National Mussel Watch administered by the National Oceanic and Atmospheric Association (NOAA) and international surveys complements information from the State Mussel Watch Program.

The Toxic Substances Monitoring Program used resident fish and other aquatic organisms to monitor pollutant levels in freshwater systems throughout the state. The location and sampling history of Toxic Substances Monitoring stations in the region are summarized in Figure 6-3 and Table 6-3.

The State Mussel Watch and State Substances Monitoring Programs have been incorporated into SWAMP. The Toxicity Testing Program and Coast Fish Contamination Program have also been incorporated into SWAMP.

6.3 SACRAMENTO-SAN JOAQUIN RIVERS AND NORTHERN SAN FRANCISCO BAY ESTUARY WATER QUALITY SURVEILLANCE

Water flowing into the San Francisco Estuary from the Sacramento and San Joaquin rivers is regularly monitored by numerous agencies and programs, including the Sacramento Coordinated Water Quality Monitoring Program (in the Sacramento metropolitan area), the Department of Water Resources, the Central Valley Regional Water Quality Control Board, and the Interagency Ecological Studies Program. Conventional water quality parameters, water and suspended material chemistry, and toxicity are sampled at a network of stations located throughout the Delta and into San Pablo Bay. In addition, phytoplankton, benthic community, and beneficial use surveys are regularly conducted in this area.

The primary goals of these efforts are to: (a) assure riverine water quality meets applicable standards; (b) identify changes in water quality potentially related to the operation of the State Water Project; and (c) develop technical information that can be used to estimate mass loading of pollutants to the Estuary from riverine sources.

6.4 GROUNDWATER MONITORING NETWORKS

Groundwater monitoring networks are established in several basins in the Region. At present, there are monitoring networks in the Livermore-Amador Valley by Zone 7, Niles Cone by the Alameda County Water District (ACWD), Santa Clara Valley by the Santa Clara Valley Water District (SCVWD), Half Moon Bay Terrace by the Coastside County Water District and the Montara Water and Sanitation District), San Francisco's Westside Basin by the San Francisco Public Utilities District (SFPUC), and Napa Valley by the Napa Valley Flood Control and Water Conservation District. In order to find out the most current status of these networks, local water management agencies should be contacted directly.

In addition, the U.S. Geological Survey (USGS) and the Department of Water Resources (DWR) maintain regional monitoring networks. Typically, monitoring is conducted at least

annually for general mineral quality and water levels. This well data may be of use to determine the general potability of groundwater and the status of sea water intrusion control.

The Water Board is integrating the locations of monitoring well networks into its groundwater geographic information system. The water quality data generated from the networks will assist Water Board staff in the refinement of beneficial use designations for groundwater basins.

The State Water Board has contracted the USGS and Lawrence Livermore National Laboratory (LLNL) to implement the Groundwater Ambient Monitoring and Assessment (GAMA) Program. The primary objective of the GAMA Program is to comprehensively assess statewide groundwater quality and gain an understanding about contamination risk to specific groundwater resources. The Groundwater Quality Monitoring Act of 2001 (Sections 10780-10782.3 of the Water Code) resulted in a publicly accepted plan to monitor and assess the quality of all priority groundwater basins that account for over 90 percent of all groundwater used in the state. The plan prioritizes groundwater basins assessment based on groundwater use.

The GAMA Program monitors groundwater from public supply wells for a broad suite of chemicals at very low detection limits, including exotic chemicals such as wastewater chemicals and pharmaceuticals. Monitoring and assessments for priority groundwater basins will be completed every ten years, with trend monitoring every three years. Monitoring reports for data collected in the Region are available at the State Water Board website.

6.5 COMPLIANCE MONITORING

A second component of the state's water quality surveillance and monitoring program relates specifically to discharges of pollutants at individual point and nonpoint sources. All entities holding Water Board discharge permits must conduct regular sampling and analysis of waste released to surface and groundwaters. They must also analyze material to be dredged. The specific chemical and physical parameters, types (i.e., toxicity tests, bioaccumulation studies, waste stream sampling, etc.), frequency, and other information requirements are determined on a case-by-case basis according to the nature of the discharge and potential environmental effects. Each permit issued by the Water Board describes the specific compliance monitoring requirements for that permit holder. Monitoring data collected by point source dischargers and nonpoint pollution control programs are used to:

- Determine compliance with and provide documentation to support enforcement of permit conditions;
- Support derivation of effluent limitations and wasteload allocations; and
- Provide information needed to relate receiving water quality to mass emissions of pollutants by dischargers.

Self-monitoring data are often supplemented by information obtained by Water Board staff during site inspections (including waste analyses) and through special studies, such as those characterizing the variability of the discharge, pollutant levels in nearby receiving water and biota, and characterization of pollutant loads attributable to urban runoff.

6.6 COMPLAINT INVESTIGATION

The Water Board encourages members of the public to alert it to pollutant discharge or nuisances that may impact water quality. Staff respond to each complaint, document the observed conditions, and take any necessary follow-up actions to institute appropriate corrective measures.

6.7 BIENNIAL WATER QUALITY INVENTORY

The Water Board prepares a biennial report on water quality (as required under Section 305(b) of the Clean Water Act, PL 92-500). This report includes (a) a description of the water quality of major navigable waters in the state during the preceding years; (b) an analysis of the extent to which significant navigable waters provide for the protection and propagation of a balanced population of shellfish, fish, and wildlife and allow recreational activities in and on the water; (c) an analysis of the extent to which elimination of the discharge of pollutants is being employed or will be needed; and (d) an estimate of the environmental impact and the economic and social costs necessary to achieve the "no discharge" objective of PL 92-500, the economic and social benefits of such achievement, and an estimate of the date of such achievement. Recommendations as to the programs that must be undertaken are provided, along with estimates of the cost.

6.8 OTHER MONITORING PROGRAMS

In addition to the state's surveillance and monitoring program, several other agencies in the Bay Area monitor water quality, including local city and county offices, federal agencies, and water supply districts. Local universities also conduct research and monitoring activities. All of these programs provide additional information and data that enhance the state's efforts.

FIGURES

Figure 6-1: Regional Monitoring Program Sampling Stations

Figure 6-2: State Mussel Watch Program Monitoring Network

Figure 6-3: Toxic Substances Monitoring Network

TABLES

Table 6-1: Parameters Analyzed for in the Regional Monitoring Program

Table 6-2: Key to Figure 6-2: State Monitoring Network

Table 6-3: Key to Figure 6-3: State Monitoring Network

Figure 6-1 Regional Monitoring Program Sampling Stations: 2002-2004

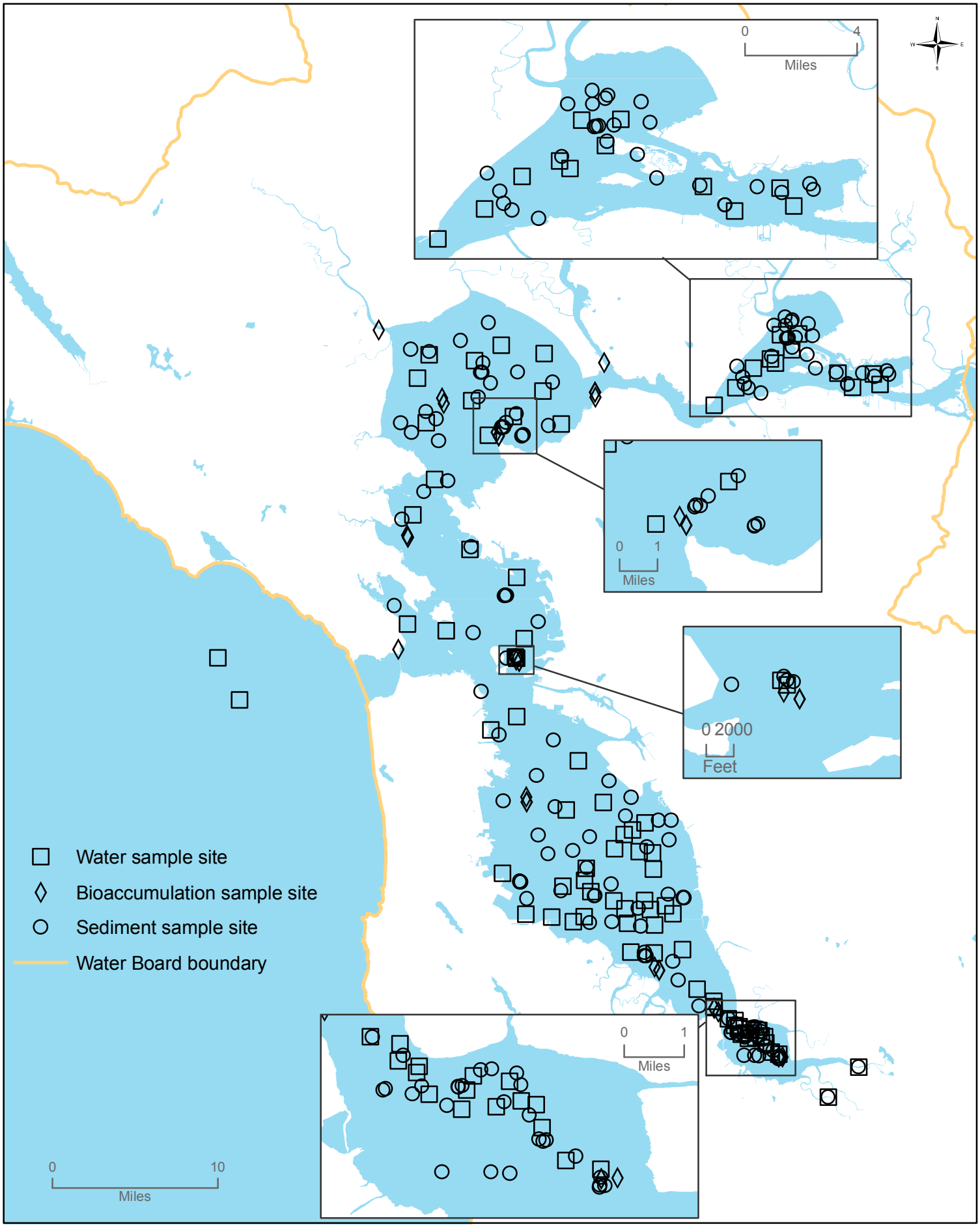


Figure 6-2 State Mussel Watch Program Monitoring Network

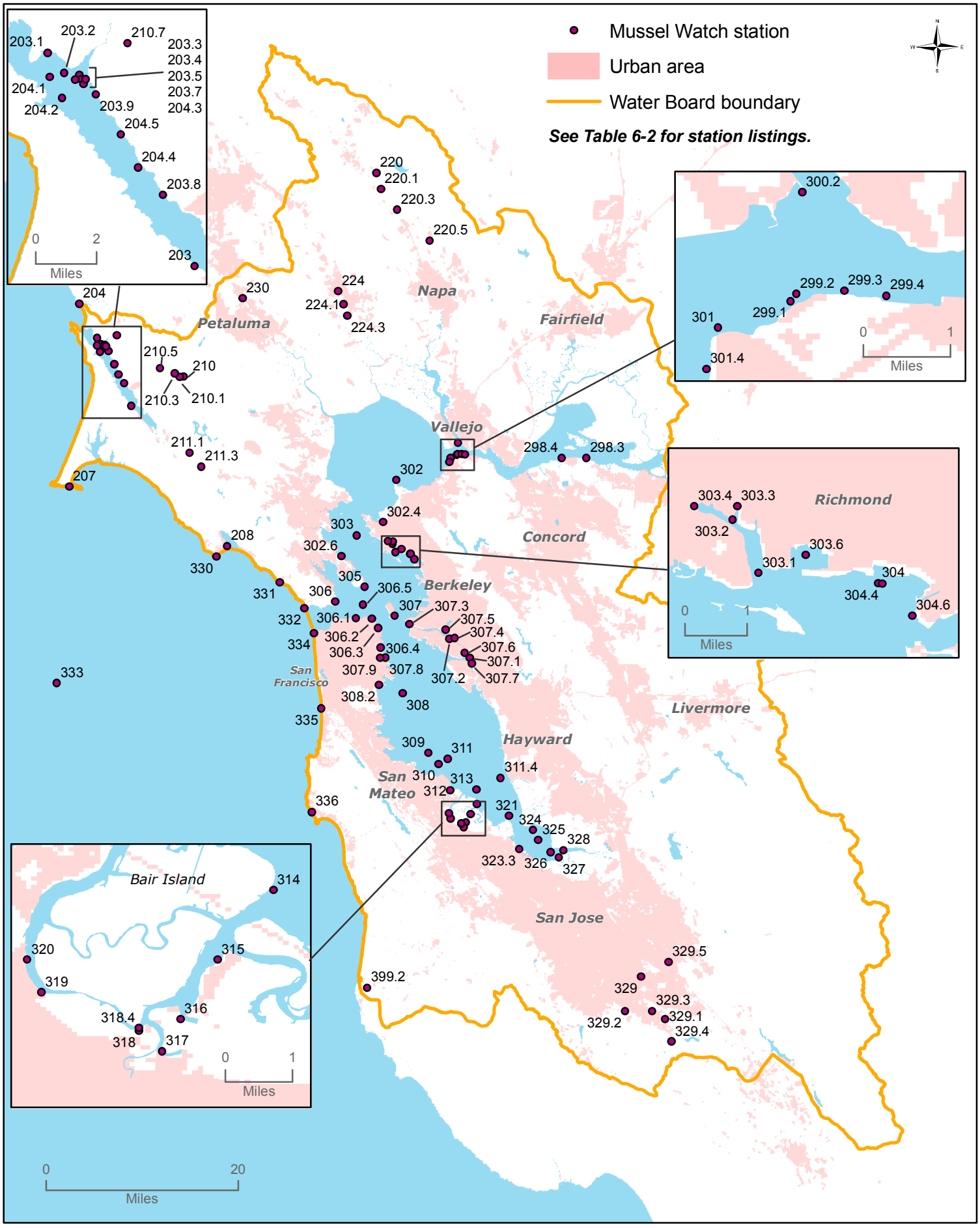


Figure 6-3 Toxic Substances Monitoring Network

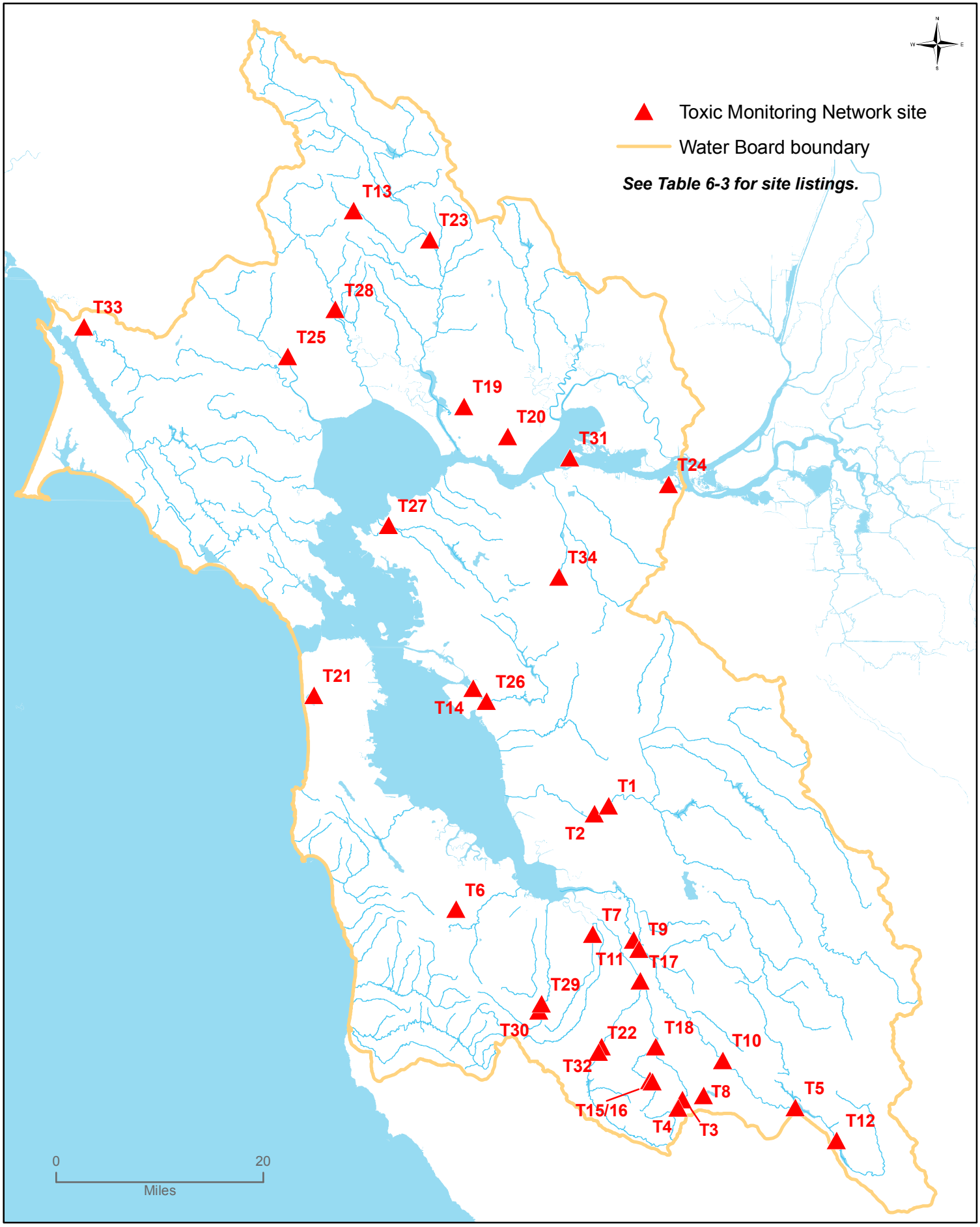


Table 6-1 Parameters Analyzed for in the Regional Monitoring Program

Conventional Water Quality Parameters
Conductivity
Dissolved Ammonia
Dissolved Nitrate
Dissolved Nitrite
Dissolved Organic Carbon
Particulate Organic Carbon
Dissolved Oxygen
Dissolved Phosphates
Dissolved Silicates
Hardness (when salinity is < 5 parts per thousand)
pH
Phaeophytin
Salinity
Temperature
Total Chlorophyll-*a*
Total Suspended Solids

Sediment Quality Parameters
% clay (< 4 µm)
% silt (4 µm–62 µm)
% sand (2 mm > 62 µm)
% gravel (> 2 mm)
% solids
Depth
Hydrogen Sulfide *(QAQC measurements)*
pH (porewater, interstitial sediment)
Total Ammonia *(QAQC measurements)*
Total Organic Carbon
Total Sulfide *(QAQC measurements)*
Total Nitrogen

Bivalve Tissue Parameters
% Lipid
% Moisture
Bivalve Percent Survival
Growth - Change in Internal Shell Volume (mean, std. dev)
Dry Flesh Weight (mean and std error)

Toxicity Tests—Water and Sediment
Episodic Aquatic Toxicity – (*Ceriodaphnia, Menidia,* Mysid) % Survival
Sediment Toxicity – (Amphipod) % Survival
Sediment Toxicity – (Bivalve) % Normal Development

Trace elements analyzed in water, sediment, and tissue samples:
Target Method Detection Limits (MDLs) are in parentheses following the reporting units.

	Water (Dissolved and Total)	**Sediment** (dry weight)
Lab(s)	BRL/UCSCDET	BRL/CCSF/ UCSCDET
Aluminum (Al)*	-	mg/kg (200)
Arsenic (As)	µg/L (0.1)	mg/kg (0.2)
Cadmium (Cd)*	µg/L(0.001)	mg/kg (0.001)
Cobalt (Co)*	µg/L(0.001)	
Copper (Cu)*	µg/L (0.01)	mg/kg (2)
Iron (Fe)*	µg/L(10)	mg/kg (200)
Lead (Pb)*	µg/L (0.001)	mg/kg (0.5)
Manganese (Mn)*	µg/L (0.01)	mg/kg (20)
Mercury (Hg)	µg/L (.0001)	mg/kg (0.00001)
Methylmercury (MeHg)	ng/L (0.005)	µg/kg (0.005)
Nickel (Ni)*	µg/L (0.01)	mg/kg (5)
Selenium (Se)	µg/L (0.02)	mg/kg (0.01)
Silver (Ag)*	µg/L (0.0001)	mg/kg (0.001)
Zinc (Zn)*	µg/L (0.005)	mg/kg (5)

- Parameter is not sampled for the matrix.
* Near-total instead of total concentrations are reported for water. Near-total metals are extracted with a weak acid (pH < 2) for a minimum of one month, resulting in measurements that approximate bioavailability of these metals to Estuary organisms.

Trace organic parameters (lab; reporting units) – in water (AXYS & CDFG; pg/L), sediment (EBMUD; µg/kg), and bivalve tissue (CDFG-WPCL; µg/kg) samples:
Organochlorines analyzed by GC-ECD will be determined using two columns of differing polarity.

Polynuclear Aromatic Hydrocarbons (PAHs)
(Target MDLs: water – 200 pg/L, sediment and tissue – 5 µg/kg; water PAHs reported in ng/L)

1-Methylnaphthalene
2,3,5-Trimethylnaphthalene
2,6-Dimethylnaphthalene
2-Methylnaphthalene
Biphenyl
Naphthalene
1-Methylphenanthrene
Acenaphthene
Acenaphthylene
Anthracene
Fluorene
Phenanthrene
Benz(a)anthracene
Chrysene
Fluoranthene
Pyrene
Benzo(a)pyrene
Benzo(b)fluoranthene
Benzo(e)pyrene
Benzo(k)fluoranthene
Dibenz(a,h)anthracene
Perylene
Benzo(ghi)perylene
Indeno(1,2,3-cd)pyrene
Dibenzothiophene

Alkylated PAHs
C1-Chrysenes
C2-Chrysenes
C3-Chrysenes
C4-Chrysenes
C1-Dibenzothiophenes
C2-Dibenzothiophenes
C3-Dibenzothiophenes
C1-Fluoranthene/Pyrenes
C1-Fluorenes
C2-Fluorenes
C3-Fluorenes
C1-Naphthalenes
C2-Naphthalenes
C3-Naphthalenes
C4-Naphthalenes
C1-Phenanthrene/Anthracenes
C2-Phenanthrene/Anthracenes
C3-Phenanthrene/Anthracenes
C4-Phenanthrene/Anthracenes

SYNTHETIC BIOCIDES
(Target MDLs: water – 2 pg/L, sediment and tissue – 1 µg/kg)

Cyclopentadienes
Aldrin
Dieldrin
Endrin

Chlordanes
alpha-Chlordane
cis-Nonachlor
gamma-Chlordane
Heptachlor
Heptachlor Epoxide
Oxychlordane
trans-Nonachlor

Dichloro-diphenyl-trichloroethane (DDTs)
o,p'-DDD
o,p'-DDE
o,p'-DDT
p,p'-DDD
p,p'-DDE
p,p'-DDT

Hexachlorcylohexane (HCH)
alpha-HCH
beta-HCH
delta-HCH
gamma-HCH

Other Synthetic Biocides
Chlorpyrifos (water only; CDFG-WPCL)
Dacthal (water only)
Diazinon (water only; CDFG-WPCL)
Endosulfan I (water only)
Endosulfan II (water only)
Endosulfan Sulfate (water only)
Hexachlorobenzene
Mirex
Oxadiazon (water only)

OTHER SYNTHETIC COMPOUNDS
[1]New analytes added in 2002.
[2]Not required by RMP but are expected to be analyze in the 2002 RMP samples.

Polychlorinated Biphenyls (PCB) Congeners (IUPAC numbers)
(Target MDLs: water – 2 pg/L, sediment and tissue – 1 µg/kg)
8, 18, 28, 31, 33, 44, 49, 52, 56, 60, 66, 70, 74, 87, 95, 97, 99, 101, 105, 110, 118, 128, 132, 138, 141, 149, 151, 153, 156, 158, 170, 174, 177, 180, 183, 187, 194, 195, 201, 203

Polybrominated Diphenyl Ethers[1]
(BDE-IUPAC No., Compound Name)
(Target MDLs: water – 1 pg/L, sediment and tissue – 1 µg/kg).

BDE 7	[2,4-DiBDE]
BDE 8	[2,4'-DiBDE]
BDE 10	[2,6-DiBDE]
BDE 11	[3,3'-DiBDE]
BDE 12	[3,4-DiBDE]
BDE 13	[3,4'-DiBDE]
BDE 15	[4,4'-DiBDE]
BDE 17	[2,2',4-triBDE]
BDE 25	[2,3',4-triBDE]
BDE 28	[2,4,4'-triBDE]
BDE 30	[2,4,6-triBDE]
BDE 32	[2,4',6-triBDE]
BDE 33	[2',3,4-triBDE]
BDE 35	[3,3',4-triBDE]
BDE 37	[3,4,4'-triBDE]
BDE 47	[2,2',4,4'-tetraBDE]
BDE 49	[2,2',4,5'-tetraBDE]
BDE 51	[2,2',4,6'-tetraBDE]
BDE 66	[2,3',4,4'-tetraBDE]
BDE 71	[2,3',4',6-tetraBDE]
BDE 75	[2,4,4',6-tetraBDE]
BDE 77	[3,3',4,4',-tetraBDE]
BDE 82	[2,2',3,3',4-pentaBDE]
BDE 85	[2,2',3,4,4'-pentaBDE]
BDE 99	[2,2',4,4'5-pentaBDE]
BDE 100	[2,2',4,4',6-pentaBDE]
BDE 105	[2,3,3',4,4',-pentaBDE]
BDE 116	[2,3,4,5,6-pentaBDE]
BDE 119	[2,3',4,4',6-pentaBDE]
BDE 120	[2,3',4,5,5'-PeBDE
BDE 126	[3,3',4,4',5-PeBDE]
BDE 128	[2,2',3,3',4,4'-hexaBDE]
BDE 138	[2,2',3,4,4',5'-hexaBDE]
BDE 140	[2,2', 3,4,4',6'-hexaBDE]
BDE 153	[2,2',4,4',5,5'-hexaBDE]
BDE 154	[2,2',4,4',5,6'-hexaBDE]

Table 6-1: Parameters Analyzed for in the Regional Monitoring Program (cont.) – p.4

Trace organic parameters (lab; reporting units) – in water (AXYS & CDFG; pg/L), sediment (EBMUD; µg/kg), and bivalve tissue (CDFG-WPCL; µg/kg) samples:

Organochlorines analyzed by GC-ECD will be determined using two columns of differing polarity.

Polynuclear Aromatic Hydrocarbons (PAHs) (Target MDLs: water – 200 pg/L, sediment and tissue – 5 µg/kg; water PAHs reported in ng/L)	**SYNTHETIC BIOCIDES** (Target MDLs: water – 2 pg/L, sediment and tissue – 1 µg/kg)	**OTHER SYNTHETIC COMPOUNDS** [1]New analytes added in 2002. [2]Not required by RMP but are expected to be analyze in the 2002 RMP samples.
		BDE 155 [2,2',4,4',6,6'-hexaBDE]
		BDE 166 [2,3,4,4',5,6'-hexaBDE]
		BDE 181 [2,2',3,4,4',5,6'-heptaBDE]
		BDE 183 [2,2',3,4,4',5',6-heptaBDE]
		BDE 190 [2,3,3',4,4',5,6-heptaBDE]
		BDE 203 [2,2',3,4,4',5,5',6]
		BDE 206 [2,2',3,3'4,4',5,5',6]
		BDE 209 [2,2',3,3',4,4',5,5',6,6'-decaBDE]

Table 6-2: Mussel Watch Program Monitoring Network

STATION NUMBER	STATION NAME	LATITUDE	LONGITUDE	SAMPLING HISTORY
203.0	Tomales Bay / Shell Beach	38 07 03	122 52 25	1979-1982, 1991-1992, 1997-2000
203.1	Tomales Bay / Vincent Landing	38 13 08	122 56 39	1997-2000
203.2	Tomales Bay / Walker Ck Mouth #5	38 12 34	122 56 08	1999-2000
203.3	Tomales Bay / Walker Ck Mouth #1	38 12 30	122 55 43	1997-2000
203.4	Tomales Bay / Walker Ck Mouth #4	38 12 23	122 55 41	1998-2000
203.5	Tomales Bay / Walker Ck Mouth #2	38 12 22	122 55 51	1997-2000
203.7	Tomales Bay / Walker Ck Mouth #3	38 12 15	122 55 39	1997, 1999-2000
203.8	Tomales Bay / Marshall	38 09 05	122 53 19	1998-2000
203.9	Tomales Bay / Nicks Cove	38 11 57	122 55 16	1997-1998
204.0	Estero De San Antonio	38 16 11	122 58 47	1993
204.1	Tomales Bay / HP	38 12 27	122 56 34	2000
204.2	Tomales Bay / Hog Island	38 11 51	122 56 12	2000
204.3	Tomales Bay / Hamlet	38 12 23	122 55 35	1999-2000
204.4	Tomales Bay / Audubon	38 09 52	122 54 02	1999-2000
204.5	Tomales Bay / McDonald	38 10 48	122 54 33	2000
207.0	Point Reyes	37 59 35	122 59 16	1978-1979, 1991
208.0	Bolinas	37 54 37	122 41 00	1980-1981
210.0	Salmon Creek / Marshall-Petaluma Rd Brid	38 09 52	122 46 32	1999
210.1	Walker Creek / Mine Creek	38 09 47	122 46 57	1997
210.3	Walker Creek / Mid Stream	38 10 08	122 47 35	1997
210.5	Walker Creek / USGS Stream Gauge	38 10 32	122 49 15	1998
210.7	Walker Creek / Hwy 1	38 13 25	122 54 23	1998-1999
211.1	Lagunitas Creek / Bridge #1	38 02 59	122 45 36	1997
211.3	Lagunitas Creek / Bridge #2	38 01 45	122 44 14	1997
220.0	Napa River / Tubbs Ln.	38 28 47	122 24 56	1998
220.1	Napa River / Larkmead Ln.	38 27 20	122 24 23	1998
220.3	Napa River / Pope St.	38 25 31	122 22 25	1998
220.5	Napa River / Yountville Cross Rd.	38 22 46	122 18 37	1998
224.0	Sonoma Creek / Agua Caliente Rd.	38 17 58	122 29 01	1998
224.1	Sonoma Creek / Petaluma Rd.	38 16 49	122 28 23	1998
224.3	Sonoma Creek / Watmaugh Rd.	38 15 46	122 27 53	1998
230.0	Petaluma River / Ely Rd	38 17 06	122 40 02	1999
298.3	Concord Naval Weapons Station / Pier 4	38 03 25	122 00 01	1988
298.4	Concord Naval Weapons Station / Seal Isl	38 03 21	122 02 50	1988
299.1	Selby Slag 4	38 03 25	122 14 52	1988, 1996
299.2	Selby Slag 5	38 03 29	122 14 48	1988
299.3	Selby Slag 6	38 03 31	122 14 19	1988
299.4	Selby Slag 7	38 03 28	122 13 54	1988
300.2	Mare Island	38 04 30	122 14 45	1985-1989
301.0	Davis Point	38 03 09	122 15 36	1980, 1983, 1988
301.4	Union Oil Outfall	38 02 44	122 15 43	1988-1989
302.0	Point Pinole	38 00 60	122 21 48	1980-1993, 1995
302.4	Castro Cove Bridge	37 57 10	122 23 09	1988-1990
302.6	Paradise Cove	37 53 58	122 27 52	1996
303.0	Richmond/San Rafael Bridge	37 55 55	122 26 08	1980-1993
303.1	Santa Fe Channel / Mouth	37 54 30	122 21 40	1986, 1991
303.2	Lauritzen Canal / Mouth	37 55 15	122 21 60	1985-1988

STATION NUMBER	STATION NAME	LATITUDE	LONGITUDE	SAMPLING HISTORY
303.3	Lauritzen Canal / End	37 55 26	122 21 58	1986-1988, 1991
303.4	Santa Fe Channel / End	37 55 26	122 22 32	1985-1987, 1991
303.6	Richmond Inner Harbor Basin	37 54 45	122 20 60	1985-1989
304.0	Staufer's	37 54 21	122 20 00	1982
304.4	Serl Intake	37 54 21	122 19 55	1991
304.6	Point Isabel	37 53 54	122 19 31	1988
305.0	San Francisco Bay / Angel Island	37 51 17	122 25 03	1980-1983
306.0	San Francisco Bay / Fort Baker	37 49 51	122 28 26	1981, 1983, 1991-1993, 1999-2000
306.1	Gashouse Cove / Laguna St	37 48 23	122 25 57	1996
306.2	Sansome St. / Pier 31	37 48 23	122 24 10	1996
306.3	Howard St. / Pier 14	37 47 35	122 23 26	1996
306.4	Central Basin / Outer	37 45 47	122 23 05	1996
306.5	Alcatraz Island	37 49 40	122 25 13	1989
307.0	San Francisco Bay / Treasure Island	37 48 42	122 21 33	1979-1993, 1997
307.1	San Leandro Bay / Damon Channel	37 45 03	122 12 49	1999
307.2	Alameda Yacht Harbor	37 46 45	122 15 15	1985-1989
307.3	Oakland Inner Harbor / West	37 47 59	122 19 53	1986-1987
307.4	Oakland Inner Harbor / Embarcadero Cove	37 46 50	122 14 40	1985-1989, 1991-1993
307.5	Lake Merritt	37 47 34	122 15 43	1992-1993
307.6	Oakland Back Harbor	37 45 30	122 13 25	1985-1988, 1999
307.7	San Leandro Bay/Elmhurst Ch	37 44 34	122 12 35	1999
307.8	San Francisco Outfall	37 44 55	122 22 30	1989
307.9	San Francisco / Islais Channel	37 44 51	122 23 05	1987-1988
308.0	San Francisco Bay / Hunter's Point	37 41 42	122 20 27	1981-1983, 1991-1993, 1995, 1997
308.2	Hunter's Point Shipyard	37 42 25	122 23 10	1988-1989
309.0	San Mateo Bridge / 8B	37 36 21	122 17 20	1980-1987, 1991-1993, 1995, 1997
310.0	San Mateo Bridge / 8A	37 35 21	122 16 08	1982
311.0	San Mateo Old Bridge	37 35 52	122 15 08	1982
311.4	North / South Bay	37 34 16	122 08 59	1996
312.0	Belmont Slough	37 32 60	122 14 47	1982
313.0	San Francisco Bay near Redwood Creek	37 33 09	122 11 45	1981-1985, 1991-1993, 1995, 1997
314.0	Redwood Creek / Channel Marker 10	37 31 49	122 11 38	1982
315.0	Redwood Creek / Towers	37 30 55	122 12 22	1982-1983
316.0	Redwood Creek / Tradewinds	37 30 09	122 12 49	1980, 1982-1983
317.0	Redwood City / STP Outfall	37 29 44	122 13 03	1983
318.0	Redwood Creek / Pete's Marina	37 30 00	122 13 24	1983
318.4	Redwood Creek / Bair Island	37 30 02	122 13 23	1987
319.0	Redwood Creek / Pulgas	37 30 30	122 14 37	1983
320.0	San Francisco Airport	37 30 55	122 14 50	1983
321.0	Dumbarton Bridge / Channel Marker 14	37 30 50	122 07 58	1980-1989, 1991-1992, 1995, 1997
323.3	Palo Alto Outfall	37 27 51	122 06 42	1989-1990
324.0	Newark Slough	37 29 36	122 05 11	1982
325.0	Channel Marker 17	37 28 41	122 04 32	1982
326.0	Palo Alto / Channel Marker 8	37 27 38	122 03 06	1982-1983, 1991-1993
327.0	Palo Alto / Yacht Club	37 27 09	122 02 10	1982

STATION NUMBER	STATION NAME	LATITUDE	LONGITUDE	SAMPLING HISTORY
328.0	Alviso Slough	37 27 49	122 01 40	1982
329.0	Guadalupe Creek / Almaden Expressway	37 16 31	121 52 33	1997
329.1	Arroyo Calero / Harry Rd.	37 12 42	121 49 41	1998
329.2	Guadalupe Creek / Hicks Road	37 13 22	121 54 16	1997-1998
329.3	Alamitos Creek / Bubbling Well Pl.	37 13 25	121 51 10	1998
329.4	Alamitos Creek / Almanden Road	37 10 44	121 48 57	1997-1998
329.5	Guadalupe River / Capitol Expressway	37 17 53	121 49 25	1998
330.0	Duxbury Reef	37 53 38	122 42 09	1980-1981
331.0	Muir Beach	37 51 28	122 34 50	1980
332.0	Point Bonita	37 49 11	122 31 53	1980
333.0	Farallon Islands	37 41 45	123 00 00	1978-1980
334.0	Cliff House	37 46 57	122 30 46	1980
335.0	Pacifica	37 40 09	122 29 41	1980
336.0	J. Fitzgerald	37 30 45	122 30 30	1978-1981, 1991, 1998-2000
399.2	Pescadero Creek	37 14 57	122 23 40	1988-1989

Table 6-3: Toxic Substances Monitoring Network

STATION NUMBER	STATION NAME	LATITUDE	LONGITUDE
204.30.11	Alameda Creek / Niles Canyon Road	37 34 58	121 57 47
204.30.00	Alameda Creek / Shinn Pit	37 34 17	121 59 15
205.40.17	Alamitos Creek d/s Almaden Reservoir	37 10 27	121 49 23
205.40.18	Almaden Reservoir	37 9 45	121 49 48
205.30.30	Anderson Reservoir	37 9 58	121 37 30
205.50.08	Bear Gulch Reservoir	37 26 0	122 13 40
205.50.07	Calabazas Creek d/s Tasman Drive	37 24 10	121 59 10
205.40.16	Calero Reservoir	37 10 50	121 47 10
205.30.08	Coyote Creek / Brokaw Road	37 23 0	121 54 15
205.30.18	Coyote Creek / Percolation Pond	37 13 48	121 45 12
205.30.07	Coyote Creek u/s Montague Expressway	37 23 45	121 54 50
205.30.37	Coyote Reservoir	37 7 15	121 33 5
206.50.24	Dry Creek	38 24 22	122 26 22
204.20.00	Elmhurst Creek / Mouth	37 44 35	122 12 23
205.40.13	Guadalupe Creek d/s Guadalupe Reservoir	37 12 0	121 52 50
205.40.14	Guadalupe Reservoir	37 11 53	121 52 34
205.50.09	Guadalupe River / Howard Street	37 20 20	121 54 5
205.40.08	Guadalupe River / Percolation Pond	37 14 50	121 52 19
206.50.03	Lake Chabot / Solano County	38 8 11	122 14 5
207.21.03	Lake Herman	38 5 45	122 9 20
202.10.01	Lake Merced	37 43 38	122 29 15
205.40.02	Los Gatos Creek	37 14 17	121 58 18
206.50.14	Napa River / Napa	38 22 6	122 18 8
207.10.12	New York Slough	38 2 1	121 52 7
206.30.07	Petaluma River / Lakeville	38 11 59	122 33 0
204.20.01	San Leandro Creek / Highway 880 Bridge	37 43 31	122 10 56
206.60.01	San Pablo Creek	37 58 3	122 21 46
206.40.08	Sonoma Creek	38 16 3	122 28 2
205.50.94	Stevens Creek	37 18 15	122 14 24
205.50.10	Stevens Creek Reservoir	37 17 38	122 4 41
207.10.90	Suisun Bay	38 4 5	122 2 40
205.40.01	Vasona Lake	37 14 45	121 58 0
201.12.01	Walker Creek	38 14 0	122 54 47
207.32.06	Walnut Creek	37 54 3	122 3 33

CHAPTER 7: WATER QUALITY ATTAINMENT STRATEGIES INCLUDING TOTAL MAXIMUM DAILY LOADS

Water Quality Attainment Strategies (WQAS) including Total Maximum Daily Loads (TMDLs) deemed necessary and appropriate to ensure attainment and maintenance of water quality standards in the Region are presented herein this chapter.

7.1 A WATER QUALITY ATTAINMENT STRATEGY TO SUPPORT COPPER AND NICKEL SITE-SPECIFIC OBJECTIVES SOUTH OF THE DUMBARTON BRIDGE

The Water Quality Attainment Strategy (WQAS) for copper and nickel in San Francisco Bay south of the Dumbarton Bridge (Lower South SF Bay) is designed to prevent water quality degradation and ensure the ongoing maintenance of the site-specific objectives both for copper and nickel in Lower South SF Bay. This section describes the details of the WQAS and how the Water Board will use its regulatory authority to implement this strategy.

The four elements of the WQAS for copper and nickel in Lower South SF Bay are:

- Current control measures/actions to minimize copper and nickel releases (from municipal wastewater treatment plants and urban runoff programs) to Lower South SF Bay;
- Statistically-based water quality "triggers" and a receiving water monitoring program that would initiate additional control measures/actions if the "triggers" are met;
- A proactive framework for addressing increases to future copper and nickel concentrations in Lower South SF Bay, if they occur; and
- Metal translators that will be used to compute copper and nickel effluent limits for the municipal wastewater treatment plants discharging to Lower South SF Bay.

Except for the specification of metal translators, all actions and monitoring obligations described in this section have been required by the National Pollutant Discharge Elimination System (NPDES) permits for the three municipal wastewater dischargers and the municipal urban runoff (stormwater) dischargers in Lower South SF Bay since October 2000 and March 2001, respectively.

7.1.1 BACKGROUND

Lower South SF Bay has been listed as impaired due to point source discharges of generic metals since 1990 (Clean Water Act §304(l) listing) and most recently for copper and nickel from point and urban runoff sources in the State's 1998 list required by Clean Water Act §303(d). The primary reason for the copper and nickel impairment listings had been that ambient water concentrations of dissolved copper and nickel exceeded Basin Plan water quality objectives or US EPA national water quality criteria for the protection of aquatic life. Despite significant reductions in wastewater loadings over the past two decades, ambient concentrations at stations monitored through the San Francisco Estuary Regional Monitoring Program for Trace Substances

(RMP) or the City of San Jose monitoring program still approach or exceed the previously-applicable federal criteria or water quality objectives in Lower South SF Bay. The Water Board has now adopted site-specific water quality objectives. As discussed below, it is likely that these new objectives are being attained.

7.1.1.1 SOURCES

The external sources of copper and nickel to Lower South SF Bay include a minor contribution from atmospheric deposition and substantial discharges from tributaries/urban runoff and municipal wastewater. The dischargers responsible for the urban runoff discharges are the Santa Clara Valley Water District, County of Santa Clara, City of Campbell, City of Cupertino, City of Los Altos, Town of Los Altos Hills, Town of Los Gatos, City of Milpitas, City of Monte Sereno, City of Mountain View, City of Palo Alto, City of San Jose, City of Santa Clara, City of Saratoga, and City of Sunnyvale. These cities have joined together to form the Santa Clara Valley Urban Runoff Pollution Prevention Program. The municipal wastewater dischargers are the Cities of San Jose and Santa Clara, Sunnyvale, and Palo Alto. Each of these cities owns and operates a wastewater treatment plant (Publicly-Owned Treatment Works or POTW) that discharges into the Lower South Bay.

On an annual basis, about 1100 kilograms (kg) of copper and 1500 kg of nickel enters Lower South SF Bay from POTWs. From tributaries, roughly 3800 kg copper and 6000 kg nickel enters this Bay segment each year. During the dry season (June-November), POTW loading is dominant, and tributary loading is dominant during the wet season (December-May). Substantial amounts of copper (about 1.9 million kg) and nickel (about 50 million kg) already existing in the sediments of Lower South SF Bay can also contribute to water concentrations when the sediments are resuspended by waves, winds, tides, and currents. The metals deposited in the sediments consist of those deposited historically (higher than current levels) and those currently deposited metals. The historical and current external loadings have elevated the total copper and possibly the total nickel concentrations of Lower South SF Bay sediments above what they would be in the absence of anthropogenic sources.

7.1.1.2 STAKEHOLDER INVOLVEMENT

The stakeholder group recognized by the Water Board to assist in developing watershed-based programs to address both short and long-term water quality issues in Lower South SF Bay is the Santa Clara Basin Watershed Management Initiative (SCBWMI). The SCBWMI, formed in 1996, is a collaborative effort of representatives from business and industrial sectors, professional and trade organizations, civic, environmental, resource conservation and agricultural groups, regional and local public agencies, resource agencies, and the general public. These groups have joined forces to address all sources of pollution that threaten the water bodies draining into the Lower South Bay. A major aim of the SCBWMI is to coordinate existing watershed activities on a basin-wide scale, ensuring that environmental protection efforts are addressed efficiently and cost-effectively. The Water Board will continue to recognize and rely on the leadership of the SCBWMI to ensure the ongoing success of the WQAS.

A working subgroup of the SCBWMI, the Bay Monitoring and Modeling Subgroup, took the lead to address the water quality issues and to provide the basic strategy and information necessary to address both the water quality technical and related regulatory questions. In 1998, the Copper

and Nickel TMDL Work Group (Workgroup) was formed by the SCBWMI to provide guidance for the development of the TMDLs for copper and nickel in Lower South SF Bay. A broad group of stakeholders was represented on the Workgroup including several environmental groups, local wastewater dischargers, local public agencies responsible for the urban runoff program, state and federal regulators, industry and local business representatives, and national organizations such as the Copper Development Association.

7.1.2 OVERVIEW OF THE TMDL PROJECT FOR COPPER AND NICKEL IN LOWER SOUTH BAY

In 1996, the State Water Board included the South San Francisco Bay on the §303(d) impaired water body list as a high priority impaired water body. In 1998, the list was updated and specifically identified copper, nickel, mercury and selenium as the metal pollutants of concern. The listing triggered the Clean Water Act §303(d) mandate for the State of California, specifically the Water Board, to establish TMDLs for these pollutants of concern. To address NPDES permit issues for its wastewater treatment plant, the City of San Jose and other local municipalities took the lead in providing funding for the development of the copper and nickel TMDLs for Lower South Bay, and other Lower South Bay communities contributed to related SCBWMI activities.

The TMDL effort focused on:

1. Conducting an Impairment Assessment to determine if ambient concentrations of copper and nickel were negatively impacting the designated beneficial uses of Lower South Bay;
2. Developing a range of scientifically defensible water quality objectives for copper and nickel;
3. Developing a conceptual model of copper and nickel cycling to evaluate attainment of the range of objectives; and
4. Characterizing sources and identifying pollution prevention and control actions.

The Workgroup oversaw the preparation and review of several technical reports. These reports provide the basis of the conclusions and recommendations of the Workgroup regarding the effects of ambient concentrations of copper and nickel on the beneficial uses of Lower South Bay.

7.1.3 IMPAIRMENT ASSESSMENT AND SITE-SPECIFIC OBJECTIVES

The Impairment Assessment Report was finalized in June 2000 to present new information and to re-evaluate the determination that the beneficial uses of Lower South Bay were impaired due to ambient concentrations of copper and nickel. Specifically, the goals of the assessment were to:

- Compile and evaluate data on ambient concentrations and toxicity information for copper and nickel in Lower South Bay;
- Identify, evaluate and select indicators of beneficial use impairment. The categories of parameters and criteria considered included toxicity (acute and chronic), biological (biota composition, health, abundance, and physical habitat vs. a reference site), chemical (numeric values), and physical (capacity to support uses);
- Develop endpoints for the selected indicators that can be used to assess the existence of impairment and compare these values to ambient concentrations in Lower South Bay. The intent of this assessment was to provide policy makers, regulators, and other

stakeholders with the best technical laboratory and ambient information currently available to compare with known threshold impact levels on selected indicators;
- Assess the level of certainty with which it can be shown ambient concentrations of copper and nickel are or are not resulting in beneficial use impairment; and
- Recommend numeric values for site-specific objectives (SSOs) for dissolved copper and nickel in Lower South Bay in lieu of TMDL development upon finding that the Lower South Bay is not impaired due to these metals.

The final results of the impairment assessment indicated that impairment to beneficial uses of Lower South Bay due to ambient copper and nickel concentrations is unlikely. There are several lines of evidence to support the finding for each metal, and these are discussed at length in the Impairment Assessment Report. One important factor in the impairment decision was the recognition that the chemical features of Lower South Bay reduce the toxicity and bioavailability of copper and nickel. These chemical features include binding of copper and nickel by dissolved organic compounds and the abundance of dissolved metals like manganese and iron that compete with copper and nickel for receptor sites on aquatic organisms.

From the established ranges of acute and chronic values of copper and nickel site-specific objectives developed through the Impairment Assessement Report, the Water Board selected specific values for copper and nickel that it deemed protective of beneficial uses and incorporated them into Chapter 3 of this Basin Plan. The acute and chronic site-specific water quality objectives in Lower South Bay for dissolved copper are 10.8 μg/L and 6.9 μg/L, respectively. The acute and chronic site-specific water quality objectives in Lower South Bay for dissolved nickel are 62.4 μg/L and 11.9 μg/L, respectively.

While the conclusions of the Impairment Assessment Report are scientifically sound, like most statements about complex environmental systems, its conclusions on the lack of impairment have some degree of uncertainty. The existence of these uncertainties underscores the need for continued monitoring and studies that are described below. The four primary areas of uncertainty are the toxicity of copper to phytoplankton, copper and nickel cycling in Lower South Bay, sediment toxicity, and uncertainties in loading estimates.

7.1.4 IMPLEMENTATION PLAN

This section discusses the actions that will be taken to maintain the copper and nickel site-specific objectives. The underlying goal of these actions is to ensure that ambient levels do not increase due to increases in loading of copper and nickel to Lower South Bay. Except for the specification of metal translators, all actions and monitoring obligations described in this section are already required in the NPDES permits for the three municipal wastewater dischargers and the municipal urban runoff (stormwater) dischargers in Lower South Bay. Other non-regulatory, collaborative actions discussed here will be implemented via the SCBWMI and its participants on a voluntary basis.

7.1.4.1 MONITORING PROGRAM

Fundamental to the monitoring program is the concept of a water quality indicator. An indicator is a measurable quantity that is so strongly associated with particular environmental conditions that the value of the measurable quantity can be used to indicate the existence and maintenance

of these conditions. The indicators used in the monitoring program to support the site-specific objectives are dissolved copper and nickel concentrations in Lower South Bay. The monitoring program described here has been required by the NPDES permits for the three municipal wastewater dischargers since October 2000. (Order No. 00-108). The monitoring program consists of monthly dissolved copper and nickel measurements at the ten stations shown in Table 7-1. As of the adoption of this WQAS, the municipal wastewater dischargers defined dissolved metal as those metal constituents that pass through a 0.45 micron (μm) filter prior to chemical analysis. Any changes to this operational definition of dissolved metal or details of the monitoring program will be addressed through amendments to the NPDES permits.

The purpose of the monitoring component of the WQAS is to assess ambient conditions compared to the specific trigger levels described below. The ambient data collected through the WQAS monitoring program may be considered along with other ambient monitoring data to determine whether additional controls are necessary.

7.1.4.2 TRIGGER VALUES

The NPDES permits for municipal wastewater and stormwater dischargers contain a series of trigger values and corresponding actions that are required to be taken by the dischargers if the triggers are reached. For copper, an increase in dry season dissolved copper concentration of 0.8 μg/L can be reliably detected despite inherent variability, and this specific increase is used to define the copper trigger levels. The copper Phase I trigger is reached and copper-specific Phase I actions will be conducted if the average dry season dissolved copper concentration at stations SB3, SB4, SB5, SB7, SB8, SB9 increases from 3.2 μg/L (overall dry season mean from indicator stations during the period June 1997 to November 1998) to 4.0 μg/L. The copper Phase II trigger is reached and Phase II actions will be conducted if the dry season mean concentration of the indicator stations increases further to 4.4 μg/L. This 0.4 μg/L change can still be detected with reasonable statistical certainty to justify the more aggressive Phase II actions.

For nickel, an increase in dry season dissolved concentration of 2.0 μg/L can be reliably detected despite inherent variability, and this increase is used to define the trigger levels for nickel. The nickel Phase I trigger is reached and Phase I actions will be conducted if the average dry season dissolved nickel concentration at stations SB3, SB6, SB7, SB8, SB9, SB10 increases from 4.0 μg/L (overall dry season mean from indicator stations during the period June 1997 to November 1998) to 6.0 μg/L. The nickel Phase II trigger is reached and Phase II actions will be conducted if the dry season mean dissolved concentration from the indicator stations increases another 2.0 μg/L to 8.0 μg/L. Note that the copper and nickel Phase I and Phase II triggers are well below the site-specific objectives for these metals and reaching the triggers indicates a negative trend in water quality but not impairment of beneficial uses.

The Executive Officer will review the monitoring program results annually and determine whether the trigger values have been reached. The Executive Officer will report findings to the Water Board and will notify interested agencies and interested persons of these findings and will provide them with an opportunity to submit their views and recommendations concerning the findings either in written form or at a public hearing.

If the trigger values for ambient copper and nickel concentrations have not been exceeded, the monitoring program will continue to provide information for the next review period. The Water Board shall evaluate performance of the monitoring program during the annual review to determine if the necessary information is being provided.

7.1.4.3 BASELINE ACTIONS

These actions are already being implemented through the NPDES permits and will continue until the Water Board directs otherwise through the permitting process. These actions include: 1) pollution prevention and control actions by public agencies; 2) actions to conduct or track special studies that address specific technical areas of uncertainty (the toxicity of copper to phytoplankton, copper and nickel cycling in Lower South Bay, sediment toxicity, and uncertainties in loading estimates); and 3) planning-type studies to track, evaluate, and/or develop additional indicators and associated triggers (i.e., indicators for growth, development, or increased use or discharge of copper and nickel in the watershed).

BASELINE ACTIONS CONDUCTED BY MUNICIPAL WASTEWATER DISCHARGERS

Baseline actions applicable to municipal wastewater dischargers are actions associated with implementation of reasonable treatment, source control, and pollution prevention measures to limit discharges of copper and/or nickel.

In the consideration of the site-specific objectives for copper and nickel, the "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California" (State Implementation Plan, or SIP) requires that dischargers demonstrate that they are implementing reasonable treatment, source control, and pollution prevention measures for these metals. The Water Board found that continuation of baseline actions satisfies this requirement as long as the copper and nickel trigger levels are not reached in Lower South Bay. Pollution prevention and minimization are a significant part of these dischargers' efforts to limit the discharges of copper and nickel. These dischargers have approved Pretreatment Programs and have established Pollution Prevention Programs under the requirements specified by the Water Board in their NPDES permits.

These findings and specific baseline actions are already being implemented through the NPDES permits for these dischargers (Order No. 00-108, October 2000). The municipal wastewater dischargers are required by their permits to maintain these baseline actions and review and report to the Water Board on their implementation on an annual basis. Modifications to the current baseline actions may be considered through the permit process, provided that these dischargers demonstrate to the Water Board that such modifications are consistent with maintaining reasonable treatment, source control, and pollution prevention measures.

BASELINE ACTIONS CONDUCTED BY URBAN RUNOFF (MUNICIPAL STORMWATER) DISCHARGERS

The Urban Runoff Management requirements (see Section 4.14 Urban Runoff Management) and specific copper and nickel baseline actions have been required by the NPDES permit for the Santa Clara Valley Urban Runoff Pollution Prevention Program and its dischargers since March 2001

(Order No. 01-024). These requirements include actions associated with implementation of controls to reduce copper and/or nickel in discharges to the maximum extent practicable, actions associated with prohibiting discharges other than stormwater to storm drain systems and waterways, and actions associated with monitoring to evaluate effectiveness of controls, identify sources of pollutants, and to measure or estimate pollutant concentrations and loads. On an annual basis, these dischargers are required to describe the controls that they are implementing and any additional controls that will be implemented. These dischargers are required to provide to the Water Board detailed descriptions of activities in each fiscal year in annual workplans and associated evaluations and results in annual reports. Modifications to the current baseline actions may be considered through the NPDES permit, provided that the Dischargers demonstrate to Water Board that such modifications are consistent with maintaining programs that control copper and nickel discharges to the maximum extent practicable in accordance with the requirements of the Water Board's Comprehensive Control Program for Urban Runoff Management and the Clean Water Act. As long as Lower South Bay ambient concentrations of copper and nickel remain below the established Phase I trigger levels, the Water Board has determined that the baseline actions applicable to urban runoff (municipal stormwater) dischargers satisfy the copper- and nickel-specific requirements of the Comprehensive Control Program for Urban Runoff Management and federal regulations (40 CFR 122.26).

BASELINE ACTIONS CONDUCTED BY SANTA CLARA BASIN WATERSHED MANAGEMENT INITIATIVE

As described above, the SCBWMI is a collaborative, stakeholder-participation forum that seeks integration of regulatory and watershed management actions that affect Lower South SF Bay and its tributaries. In addition to the actions required in the NPDES permits for the three municipal wastewater dischargers and the municipal urban runoff dischargers, there are other non-regulatory, collaborative actions that the SCBWMI and participants have committed to implement. These collaborative actions are described in attachments to the NPDES permit for the SCVURPPP and include: establishing a forum on transportation issues and impervious surfaces and for reviewing the appropriateness of transportation control measures with a view toward reducing traffic congestion; implementing measures to improve classification and assessment of watersheds; establishing an environmental clearinghouse of information related to tracking and disseminating new scientific information related to copper toxicity, loadings, fate and transport, and impairment of aquatic ecosystems; and planning-type studies to track, evaluate, and/or develop additional indicators to use and future potential indicators and triggers (i.e., indicators for growth, development, or increased use or discharge of copper and nickel in the watershed). In addition, the SCBWMI serves as a stakeholder participation forum to track, review, and evaluate the baseline actions required by the NPDES permits.

7.1.4.4 PHASE I ACTIONS

Phase I actions are already specified in the NPDES permits for municipal wastewater and stormwater dischargers. These actions are implemented when the mean value of selected monitoring parameters exceeds specified Phase I water quality triggers. The exceedance of the Phase I trigger indicates a negative trend in water quality and not impairment. Phase I actions consist of both specific remedial actions and planning for implementation of future actions if the Phase II triggers are exceeded.

If the Phase I copper or nickel triggers are exceeded, the Regional Board will consider execution of Phase I and Baseline actions as satisfying both the SIP requirement that municipal wastewater dischargers are implementing reasonable treatment, source control, and pollution prevention measures for copper and nickel and the Basin Plan requirement that municipal stormwater dischargers are implementing controls to reduce copper and/or nickel in discharges to the maximum extent practicable. Within 90 days after the determination of Phase I trigger exceedance, the Regional Board expects both the municipal wastewater and municipal stormwater dischargers to submit, for Executive Officer concurrence, their proposed Phase I plans with implementation schedules to implement additional measures to limit their relative cause or contribution to the exceedance. This submittal should, at a minimum, include evaluation of the Phase I actions and development of a Phase II plan. If the submittal is not received within 90 days of the determination of Phase I trigger exceedance or is not being implemented in accordance with the dischargers' implementation schedule following the Executive Officer's concurrence, the Regional Board may consider enforcement action to enforce the terms of the dischargers' permits.

7.1.4.5 PHASE II ACTIONS

Phase II actions are already specified in the NPDES permits for municipal wastewater and stormwater dischargers. Phase II actions are implemented when the mean value of selected monitoring parameters exceeds specified Phase II water quality triggers. Phase II actions are intended to reduce controllable sources further to maintain compliance with the site-specific water quality objectives.

If the Phase II copper or nickel triggers are exceeded, the Regional Board will consider execution of Phase II, Phase I and Baseline actions as satisfying both the SIP requirement that municipal wastewater dischargers are implementing reasonable treatment, source control, and pollution prevention measures for copper and nickel and the Basin Plan and Clean Water Act requirement that municipal stormwater dischargers are implementing controls to reduce copper and/or nickel in discharges to the maximum extent practicable. Within 90 days after the determination of Phase II trigger exceedance, the Regional Board expects the dischargers to submit, for Executive Officer concurrence, the proposed Phase II plans with implementation schedules to implement additional measures to limit their relative cause or contribution to the exceedance. If the submittal is not received within 90 days of the determination of Phase II trigger exceedance or is not being implemented in accordance with the dischargers' implementation schedule upon the Executive Officer's concurrence, the Regional Board may consider enforcement action to enforce the terms of the dischargers' permits.

7.1.4.6 METAL TRANSLATORS APPLICABLE TO LOWER SOUTH SF BAY MUNICIPAL WASTEWATER DISCHARGERS

An important regulatory element of the WQAS is the specification of metal translators applicable to the three Lower South SF Bay municipal wastewater dischargers. When the NPDES permits are re-issued, concentration-based effluent limits for these three facilities will be calculated from the chronic copper and nickel SSOs. Water quality objectives for copper and nickel are expressed as dissolved metal concentrations. Effluent limits for the POTWs are expressed as total metal concentrations and must be calculated according to the procedure outlined in the SIP. Therefore,

for metals like copper and nickel, the calculation of the effluent limit requires the use of a ratio of total to dissolved metal called the metal translator.

Analyses of data from 12 monitoring stations in Lower South SF Bay (Dumbarton to sloughs) collected from February 1997 to August 2000 and including dissolved and total copper and nickel, total suspended solids (TSS), and tidal data, showed a strong TSS dependence. The statistical analyses explored relationships between translator values and TSS, tide, site, and season. Linear regression with log-transformed dissolved fraction (translator) and TSS data provided the best regression fit. The best-fit regression line and its 95% confidence intervals provided the basis for translator values for copper and nickel.

U.S. EPA guidance (U.S. EPA Office of Water, June 1996. The Metals Translator: Guidance for Calculating a Total Recoverable Permit Limit from a Dissolved Criterion. EPA 823-B-96-007) states that, when there is a relationship between the translator and TSS, regression equations should be used to develop translator values using representative TSS values the for the site under consideration. There is a fairly wide variation in TSS, and the guidance on translator development suggests using a representative TSS value. In Lower South SF Bay, a median TSS value may not account for the higher translator values and dissolved metal levels that result during high TSS episodes. For this reason, copper and nickel translators computed from 95% confidence interval TSS values were used to develop the POTW effluent limits. A copper translator of 0.53, and a nickel translator of 0.44 resulted from this procedure. Using the 95% confidence interval translator provides an additional measure of beneficial use protection in that effluent limits, expressed at total metal, will be lower using a higher value for metal translators. These translators shall be used to compute copper and nickel effluent limits for POTWs discharging to the Lower South SF Bay when NPDES permits for Lower South SF municipal wastewater dischargers are reissued.

7.2 TOMALES BAY WATERSHED PATHOGENS TMDL

The overall goal of the Tomales Bay Watershed Pathogens Total Maximum Daily Load (TMDL) is to ensure protection of water contact recreational uses and Bay shellfish harvesting, thereby minimizing human exposure to disease-causing pathogens. The following sections establish a density-based pathogens TMDL for Tomales Bay and its tributaries, and actions and monitoring necessary to implement theTMDL. The TMDL defines allowable density-based water quality bacteria concentrations and prohibits the discharge of human waste. The associated implementation plan specifies the actions necessary to protect and restore beneficial uses. This TMDL strives to achieve a balance that allows human activities including agriculture, recreation, commercial fishing and aquaculture, and residential use to coexist and also restores and protects water quality. As outlined in the adaptive implementation section, the effectiveness of implementation actions, monitoring to track progress toward targets, and the scientific understanding pertaining to pathogens will be periodically reviewed and the TMDL may be adapted as warranted.

In addition to pathogens, animal and human waste contain nutrients that pose a threat to aquatic ecosystem beneficial uses. Tomales Bay, Walker Creek, and Lagunitas Creek are listed as impaired by excess nutrients. Human and animal wastes may also contain other harmful constituents such as steroids and pharmaceuticals. In addition to protecting pathogen-impaired

beneficial uses such as shellfish harvesting, water contact recreation, and non-contact water recreation, by eliminating the discharge of human waste and controlling the discharge of animal waste, this TMDL will also protect aquatic ecosystem beneficial uses such as marine habitat, estuarine habitat, cold and warm freshwater habitat, and wildlife habitat from other harmful constituents found in human and animal waste.

7.2.1 PROBLEM STATEMENT

Monitoring results for Tomales Bay and its main tributaries (Lagunitas, Walker, and Olema creeks) indicate that these waters exceed bacteria water quality objectives for shellfish harvesting and recreational waters (Table 3-1) and, as such, are impaired by pathogens. The presence of pathogens is inferred from high concentrations of fecal coliform bacteria (a commonly used indicator of human pathogenic organisms). Pathogen pollution is adversely affecting existing beneficial uses, which include shellfish harvesting (i.e., sport and commercial oyster, clam, and mussel harvesting), water contact recreation (i.e., swimming, fishing) and non-contact water recreation (i.e., boating, kayaking).

This TMDL addresses the following pathogen-impaired water bodies in the Tomales Bay Watershed:

- Tomales Bay
- Lagunitas Creek
- Walker Creek
- Olema Creek

7.2.2 SOURCES

If not properly managed, the following Tomales Bay Watershed sources have the potential to discharge pathogens to surface waters: on-site sewage disposal systems (OSDSs), small wastewater treatment facilities and sewage holding ponds, boat discharges, grazing lands, dairies, equestrian facilities, and municipal runoff. Pathogens sources are identified based on elevated coliform bacteria levels downstream of identified land uses or facilities and from documentation of inadequately treated human waste discharges.

- The Walker Creek watershed is dominated by grazing lands. Coliform bacteria levels and coliform loads from the Walker Creek watershed are extremely high during storm periods and a significant coliform source to Tomales Bay.
- High coliform levels detected in storm drains indicate that municipal runoff is a pathogens source.
- High coliform levels and loads downstream of residential homes and equestrian facilities suggest that failing septic systems, municipal runoff, and equestrian facilities are coliform sources.
- The Water Board regulates ten small wastewater treatment facilities and sewage holding ponds and prohibits direct discharges from these facilities into Tomales Bay or its tributaries. Four facilities have holding ponds and are permitted to discharge treated effluent to irrigation fields in the dry season. The other six wastewater treatment facilities utilize leach fields for dispersing treated effluent. Accidental malfunctions, including the breaching of ponds, a break in a sewage line, or land application when soil is saturated or

it is raining, could result in discharge of untreated or partially treated effluent. Therefore, these facilities are considered potential sources.

In addition to the above sources, warm-blooded mammals and birds that reside in the watershed and Bay produce coliform bacteria. During non-storm periods Tomales Bay coliform levels are typically below the water quality objectives for shellfish harvesting waters, indicating that in-Bay wildlife such as seals and birds are not significant sources. Approximately 30% of the lands draining to Tomales Bay are open space forested lands. Water quality monitoring of a watershed on the western shoreline of Tomales Bay with minimal human influences suggests that waters draining open space areas are below tributary bacteria water quality objectives and therefore terrestrial wildlife are nota significant source.

7.2.3 NUMERIC TARGETS

Table 7-2 contains the numeric water quality targets for the Tomales Bay Watershed Pathogens TMDL. The coliform bacteria targets are based on fecal coliform bacteria concentrations aimed at protecting shellfish harvesting and contact and non-contact water recreation beneficial uses. These density-based numeric targets define bacterial densities associated with minimal risk to humans and are the same as the water quality objectives contained in Table 3-1. The Tomales Bay targets are intended to protect the most sensitive beneficial use, shellfish harvesting. The tributary targets are intended to protect recreational uses. An additional numeric target for Tomales Bay is expressed as the number of days commercial shellfish growing areas are subjected to harvest closures due to elevated water column bacteria densities. Consistent with the definition of "threatened conditions" in the California Shellfish Protection Act, Tomales Bay shellfish growing areas shall not be closed for harvest for more than 30 days per calendar year. The California Department of Health Services requires shellfish growing areas to close for harvesting when 24-hour and 10-day rainfall totals exceed established thresholds. Rainfall thresholds are established based on the relationship between rainfall and observed fecal coliformlevels in Bay waters and shellfish.

In addition, no human waste (raw sewage or inadequately treated waste) shall be discharged to Tomales Bay or its tributaries. The no human waste discharge target is consistent with Discharge Prohibitions 5 and 15, contained in Table 4-1. This target is necessary because human waste is a significant source of pathogenic organisms, including viruses; and attainment of fecal coliform targets alone may not sufficiently protect human health. The coliform bacteria targets, in combination with the human waste discharge prohibitions and the shellfish harvesting closure targets, are the basis for the TMDL and load allocations, and fully protect beneficial uses.

7.2.4 TOTAL MAXIMUM DAILY LOAD

Table 7-3 lists the Tomales Bay Watershed Pathogens TMDL. The TMDL consists of the density-based coliform bacteria TMDL targets. The TMDL ensures protection of water contact recreational uses and Bay shellfish harvesting, thereby minimizing human exposure to disease causing pathogens.

7.2.5 LOAD ALLOCATIONS

TMDL targets are an interpretation of water quality standards, whereas TMDL allocations specify the amount (or concentration) of a pollutant that can be discharged to a waterbody such that standards are attained in both the receiving waterbody and all downstream waters. Table 7-4A presents density-based load allocations for Tomales Bay watersheds pathogens source categories that implement tributary targets, and Table 7-4B presents allocations to major tributaries, where they discharge to Tomales Bay, and implement the Bay targets. Load allocations to the tributaries reflect the highest fecal coliform concentrations that can be discharged while still attaining and maintaining the Bay shellfish harvesting water quality objectives. All entities in a watershed are responsible for meeting their source category allocation (Table 7-4A) and the applicable geographic-based allocations (Table 7-4B).

Discharging entities will not be held responsible for uncontrollable coliform discharges originating from wildlife. If wildlife contributions are determined to be the cause of exceedances, the TMDL targets and allocation scheme will be revisited as part of the adaptive implementation program. The discharge of human waste is prohibited. All sources of human waste have an allocation of zero. Nonpoint source runoff containing coliform bacteria of animal and wildlife origin, at levels that do not result in exceedances of water objectives, does not constitute wastewater with particular characteristics of concern to beneficial uses. Therefore, animal- and wildlife-associated discharges, in compliance with the conditions of this TMDL, do not constitute a violation of applicable discharge prohibitions.

7.2.6 IMPLEMENTATION PLAN

The Tomales Bay Watershed Pathogens TMDL Implementation Plan builds upon previous and ongoing successful efforts to reduce pathogen loads in Tomales Bay and its tributaries. The plan requires actions consistent with the California Water Code (CWC 13000 et seq.), the state's Nonpoint Source Pollution Control Program Plan (CWC Section 13369), the Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program[1], and human waste discharge prohibitions (Prohibitions 5 and 15, Table 4-1).

This plan specifies required implementation measures (Table 7-5) for each of the source categories (Table 7-4). These implementation measures include evaluation of operating practices, development of comprehensive site-specific pathogens control measures and an implementation schedule for such management measures, and submittal of progress reports documenting actions undertaken. Progress reports may be submitted directly to the Water Board or, if designated, through third parties. These progress reports will serve as documentation that source reduction measures are being implemented. While third parties may provide valuable assistance to TMDL implementation, the discharger is the entity responsible for complying with the specified regulations and regulatory controls. Responsible parties within each source category are required to implement the measures as specified in Table 7-5. The numeric targets and load allocations are not directly enforceable. For purpose of demonstrating attainment of applicable allocations, responsible parties will only be responsible for compliance with specified implementation measures and applicable waste discharge requirements or waiver conditions.

[1] State Water Resources Control Board. 2004. *Policy for Implementation and Enforcement of the Nonpoint Source Pollution Prevention Control Program.*

The state's Policy for Implementation and Enforcement of the Nonpoint Source Pollution Control Program requires that current and proposed nonpoint source discharges are regulated under waste discharge requirements (WDRs), waiver of waste discharge requirements, Basin Plan prohibitions, or some combination of these tools. Table 7-6 describes the method that will be used to regulate dischargers in each source category. The Water Board has established conditions for waiving WDRs for dairies. The Water Board intends to work with stakeholders to develop similar waiver conditions for grazing lands and equestrian facilities by 2009.

7.2.6.1 AGRICULTURAL WATER QUALITY CONTROL PROGRAM COSTS

The implementation measures for grazing lands and dairies constitute an agricultural water quality control program and therefore, consistent with California Water Code requirements (Section 13141), the cost of the program is estimated herein. The total program implementation cost for these agricultural sources is estimated to range between $900,000 – $2 million per year over the next 10 years. The estimated cost will be shared by Tomales Bay watershed grazing lands operators (approximately 150). This estimate includes the cost of implementing animal waste control and grazing management measures and is based on costs associated with technical assistance and evaluation, installation of water troughs, and cattle control fencing along all streams. The program cost estimate may be high as it does not account for implementation actions already underway or areas that may not require fencing. Besides fencing, other acceptable methods of managing livestock access to streams are not included in this cost estimate due to variability in costs and site specific applicability. Potential financing sources include federal and state water quality grants and federal agricultural grants.

7.2.6.2 EVALUATION AND MONITORING

Dischargers, stakeholders, and Water Board staff will conduct water quality monitoring to evaluate fecal coliform concentration trends in Tomales Bay and its tributaries. Five years after TMDL adoption, the Water Board will evaluate monitoring results and assess progress made toward attaining TMDL targets (Table 7-2) and load allocations (Table 7-4).

In 2009 and approximately every five years after the adoption of the TMDL, the Water Board will evaluate site specific, sub-watershed specific, and watershed-wide compliance with the trackable implementation measures specified in Table 7-5. In evaluating compliance with the trackable implementation measures, the Water Board will consider the level of participation of each source category as well as individual dischargers (as documented by Water Board staff or third parties).

If a discharger demonstrates that all implementation measures have been undertaken or that it is infeasible to meet their allocation due to wildlife contributions, the Water Board will consider revising allocations as appropriate. If source control actions are fully implemented throughout the Watershed and the TMDL targets are not met, the Water Board may consider re-evaluating or revising the TMDL and allocations. If, on the other hand, the required actions are not fully implemented, or are partially implemented, the Water Board may consider regulatory or enforcement action against parties or individual dischargers not in compliance.

The California Department of Health Services, working in consultation with the Shellfish Technical Advisory Committee, is encouraged to periodically evaluate, beginning in 2009,

shellfish harvest closure guidelines and the relationship between precipitation, runoff, coliform levels, and water quality exceedances.

In order to assess water quality improvements and obtain additional information for further refinement of the TMDL, Water Board staff and stakeholders will collaborate in monitoring efforts. The main objectives of the Monitoring Program are to:

- Assess attainment of TMDL targets;
- Evaluate spatial and temporal water quality trends in the Bay and its tributaries;
- Further identify significant pathogens source areas;
- Evaluate coliform levels and loadings to the Bay at the terminus of major tributaries.
- Collect sufficient data to calibrate and validate the Bay hydrodynamic model to observed coliform levels; and
- Collect sufficient data to prioritize implementation efforts and assess the effectiveness of implementation actions.

Table 7-7 outlines the locations, constituents, sampling frequency, analytical methods, and the sampling entities for a baseline water quality monitoring program. Additional monitoring will be conducted as needed if funds are available. The Water Board, in coordination with the sampling entities and interested third parties, such as National Park Service, California Department of Health Services, commercial shellfish growers, the Inverness Public Utility District, and the Salmon Protection and Watershed Network will implement this long-term water quality monitoring program. All water quality monitoring (including Quality Assurance and Quality Control procedures) will be performed pursuant to the State Water Board's Quality Assurance Management Plan for the Surface Water Ambient Monitoring Program.

7.2.6.3 ADAPTIVE IMPLEMENTATION

Approximately every five years, the Water Board will review the Tomales Bay Watershed Pathogens TMDL and evaluate new and relevant information from monitoring, special studies, and scientific literature. The reviews will be coordinated through the Water Board's continuing planning program and will provide opportunities for stakeholder participation. Any necessary modifications to the targets, allocations, or implementation plan will be incorporated into the Basin Plan. In evaluating necessary modifications, the Water Board will favor actions that reduce sediment and nutrient loads, pollutants for which the Tomales Bay Watershed is also impaired. At a minimum, the following questions will be used to conduct the reviews. Additional questions will be developed in collaboration with stakeholders during each review.

1. Are the Bay and the tributaries progressing toward TMDL targets as expected? If progress is unclear, how should monitoring efforts be modified to detect trends? If there has not been adequate progress, how might the implementation actions or allocations be modified?
2. What are the pollutant loads for the various source categories (including naturally occurring background pathogen contributions and the contribution from open space lands), how have these loads changed over time, how do they vary seasonally, and how might source control measures be modified to improve load reduction?

3. Is there new, reliable, and widely accepted scientific information that suggests modifications to targets, allocations, or implementation actions? If so, how should the TMDL be modified?
4. The allocations assume a conservative bacterial die-off rate of 0.02 per hour. This value is based on rates reported for San Francisco Bay in 1970. If bacterial die-off is found to be higher, higher allocations may be considered. What are bacterial die-off rates in the water column and stream sediments? Do they vary by season? What are bacteria transport times from sources to the Bay?
5. How does estuarine mixing and dilution of tributary waters vary by flow and season?
6. What is the relationship between precipitation, runoff, tributary loads, Bay coliform levels, and water quality exceedances and shellfish harvesting closures?
7. Are there bacteria in Tomales Bay sediments that enter the water column during storm events? If yes, how should this process be accounted for?

If it is demonstrated that all reasonable and feasible source control measures have been implemented for a sufficient period of time and TMDL targets are still not being met, the Water Board will reevaluate water quality standards, TMDL targets and allocations as appropriate.

7.3 WATER QUALITY ATTAINMENT STRATEGY AND TMDL FOR DIAZINON AND PESTICIDE-RELATED TOXICITY IN URBAN CREEKS

The following sections establish a water quality attainment strategy and TMDL for diazinon and pesticide-related toxicity in the Region's urban creeks, including actions and monitoring necessary to implement the strategy. The term "pesticides," as used here, refers to substances (or mixtures of substances) intended for defoliating plants, regulating plant growth, or preventing, destroying, repelling, or mitigating pests that may infest or be detrimental to vegetation, humans, animals, or households, or be present in any agricultural or nonagricultural environment. The term "urban creeks," as used here, refers to freshwater streams that flow through urban areas, including incorporated cities and towns and unincorporated areas with similar land use intensities. This strategy applies to all San Francisco Bay Region urban creeks.

The numeric targets, allocations, and implementation plan described below are intended to ensure that urban creeks meet applicable water quality standards established to protect and support beneficial uses. This strategy will also reduce pesticide concentrations in the Bay resulting from urban creek flows. The effectiveness of the implementation actions, the monitoring undertaken to track progress toward meeting the targets, and the most current scientific understanding pertaining to pesticide-related toxicity will be periodically reviewed, and the strategy will be adapted as necessary to reflect changing conditions and information.

7.3.1 PROBLEM STATEMENT

In 1998, a number of the Region's urban creeks were placed on the 303(d) list of impaired waters due to toxicity attributed to diazinon. In the early 1990s, many urban creek water samples collected from selected creeks throughout the Region were toxic to aquatic organisms. Studies found that pesticides, particularly diazinon, caused the toxicity. The 303(d) listings were based on observed toxicity, diazinon detections, and similarities among the Region's urban pesticide use profiles.

When pesticide-related toxicity occurs in urban creek water, creeks do not meet the narrative toxicity objective. When pesticide-related toxicity occurs in sediment, the creeks also do not meet the narrative sediment objective. Likewise, when creek water or sediment is toxic, creeks do not meet the narrative population and community ecology objective. Urban creek waters that fail to meet these objectives are not protective of cold and warm freshwater habitats.

Although U.S. EPA phased out urban diazinon applications at the end of 2004, other pesticides may now pose potential water quality and sediment quality concerns because they are used as diazinon replacements and because pesticide regulatory programs, as currently implemented, allow pesticides to be used in ways that threaten water quality.

7.3.2 NUMERIC TARGETS

The numeric targets below interpret the applicable narrative objectives in terms of quantitatively measurable water quality parameters. Meeting these pesticide-related toxicity and diazinon concentration targets will protect cold and warm freshwater habitats. These targets shall be met at all urban creek locations, including those near storm drain outfalls where urban runoff enters receiving waters.

7.3.2.1 PESTICIDE-RELATED TOXICITY

The toxicity targets are expressed in terms of acute toxic units (TU_a) and chronic toxic units (TU_c). The targets are as follows: pesticide-related acute and chronic toxicity in urban creek water and sediment, as determined through standard toxicity tests, shall not exceed 1.0 TU_a or 1.0 TU_c, where $TU_a = 100/NOAEC$ and $TU_c = 100/NOEC$. "NOAEC" refers to the "no observed adverse effect concentration," which is the highest tested concentration of a sample that causes no observable adverse effect (i.e., mortality) to exposed organisms during an acute toxicity test. For purposes of this strategy, "NOEC" refers to the "no observable effect concentration," which is the highest tested concentration of a sample that causes no observable effect to exposed organisms during a chronic toxicity test. NOAEC and NOEC are both expressed as the percentage of a sample in a test container (e.g., an undiluted sample has a concentration of 100%). In both cases, an observable effect must be statistically significant. For purposes of this strategy, an undiluted ambient water or sediment sample that does not exhibit an acute or chronic toxic effect that is significantly different from control samples on a statistical basis shall be assumed to meet the relevant target.

The above definitions of TU_a and TU_c apply only to ambient conditions in the context of this diazinon and pesticide-related toxicity strategy. If toxicity exists in urban creeks but pesticides do not cause or contribute to the toxicity, these targets do not apply. Moreover, the numeric toxicity targets do not limit the Water Board's authority to evaluate attainment of the narrative objectives through other appropriate means.

7.3.2.2 DIAZINON

The diazinon concentration target is as follows: diazinon concentrations in urban creeks shall not exceed 100 ng/l as a one-hour average. The target addresses both acute and chronic diazinon-related toxicity.

7.3.3 SOURCES

Pesticides, including diazinon, enter urban creeks through urban runoff. Most urban runoff flows through storm drains owned and operated by the Region's municipalities, industrial dischargers, large institutions (e.g., campuses), construction dischargers, and the California Department of Transportation (Caltrans). Urban runoff contains pesticides as a result of pesticides being manufactured, formulated into products, and sold through distributors and retailers to businesses and individuals who apply them for structural pest control, landscape maintenance, agricultural, and other pest management purposes. Factors that affect pesticide concentrations in urban creeks include the amount used, the chemical and physical properties of the pesticide and its product formulation, the sites of use (e.g., landscaping, turf, or paved surfaces), and irrigation practices and precipitation. In the San Francisco Bay Region, ants are the most common pest problem for which pesticides are used. Argentine ants are an introduced species. Pesticide use by structural pest control professionals and use of products sold over-the-counter can be among the greatest contributors of pesticides in urban runoff.

7.3.4 TOTAL MAXIMUM DAILY LOAD

The assimilative capacity of the Region's urban creeks for diazinon and pesticide-related toxicity is the amount of diazinon and pesticide-related toxicity they can receive without exceeding water quality standards. For urban creeks to assimilate diazinon and other pesticide discharges and meet water quality standards, the targets must be met. Rather than establishing a mass-based TMDL to attain the targets, this TMDL is expressed in concentration units. The TMDL is equal to the targets.

The targets rely on a conservative approach that provides an implicit margin of safety to account for any lack of knowledge concerning the relationship between the allocations and water quality. Weather and seasons affect creek flows and pesticide loads, concentrations, and toxicity. By expressing the targets in terms of toxicity and diazinon concentrations, the inherent pesticide mass loads automatically reflect seasonal and other critical conditions as creek conditions change.

7.3.5 ALLOCATIONS

The TMDL is allocated to all urban runoff, including urban runoff associated with municipal separate storm sewer systems, Caltrans facilities, and industrial, construction, and institutional sites. The allocations are expressed in terms of toxic units and diazinon concentrations, and are the same as the numeric targets and the TMDL.

7.3.6 IMPLEMENTATION

The cornerstone of this strategy is pollution prevention. Pesticide-related toxicity in the Region's urban creeks is to be eliminated and prevented by using pest management alternatives that protect water quality and by not using pesticides that threaten water quality. This can best be accomplished through the rigorous application of integrated pest management techniques and the use of less toxic pest control methods. The term "integrated pest management," as used here, refers to a process that includes setting action thresholds, monitoring and identifying pests, preventing pests, and controlling pests when necessary. Integrated pest management meets the following conditions:

- Pest control practices focus on long-term pest prevention through a combination of techniques, such as biological control, habitat manipulation, and modification of cultural practices;
- Pesticides are used only after monitoring indicates that they are needed;
- Treatments are made with the goal of removing only the target pest; and
- Pesticides are selected to minimize risks to human health, beneficial and non-target organisms, and the environment, including risks to aquatic habitats.

The term "less toxic pest control," as used here, refers to the use of pest control strategies selected to minimize the potential for pesticide-related toxicity in water and sediment. Strategy implementation will focus on three areas: (1) regulatory programs, (2) education and outreach, and (3) research and monitoring. Regulatory programs will prevent pollution by using existing regulatory tools to ensure that pesticides are not applied in a manner that results in discharges that threaten urban creek uses. Education and outreach programs will focus on decreasing demand for pesticides that threaten water quality, while increasing awareness of alternatives that pose less risk to water quality. Research will fill existing information gaps, and monitoring will be used to measure implementation progress and success. The actions described below are intended to address these strategic goals.

When pesticide-related toxicity occurs in urban creeks, many entities share responsibility for the discharge, and therefore many entities share responsibility for implementing actions to ensure that pesticide-related toxicity does not threaten water quality. Although the allocations apply to all urban runoff, responsibility for attaining the allocations is not the sole responsibility of urban runoff management agencies, whose authority to regulate pesticide use is constrained. Actions to be implemented by regulatory agencies, urban runoff management agencies, and other entities are listed below. The agencies with the broadest authorities to oversee pesticide use and pesticide discharges include U.S. EPA, the California Department of Pesticide Regulation, and the Water Board. Regulatory and non-regulatory actions are needed to ensure that pesticide use does not result in discharges that cause or contribute to toxicity in urban creeks. Implementing these actions is expected to ensure attainment of the allocations. Many entities are already implementing these actions. Actions that can be required through NPDES permits are already in some permits and shall be incorporated into all applicable NPDES permits when the permits are reissued or by other regulatory actions if appropriate. Voluntary actions should commence immediately, and inter-agency coordination is already underway.

7.3.6.1 WATER BOARD ACTIONS

The role of the Water Board is to encourage, monitor, and enforce implementation actions, and to lead by example. The Water Board will implement the following actions related to regulatory programs:

- Track U.S. EPA pesticide evaluation and registration activities as they relate to surface water quality and share monitoring and research data with U.S. EPA;
- When necessary, request that U.S. EPA coordinate implementation of the Federal Insecticide, Fungicide, and Rodenticide Act and the Clean Water Act;
- Encourage U.S. EPA to fully address urban water quality concerns within its pesticide registration process;

- Work with the California Department of Pesticide Regulation, County Agricultural Commissioners, and the Structural Pest Control Board to ensure that pesticide applications result in discharges that comply with water quality standards;
- Interpret water quality standards for the California Department of Pesticide Regulation and County Agricultural Commissioners, and assemble available information (such as monitoring data) to assist the California Department of Pesticide Regulation and County Agricultural Commissioners in taking actions necessary to protect water quality; and
- Use authorities (e.g., through permits or waste discharge requirements) to require implementation of best management practices and control measures to minimize pesticide discharges to urban creeks.

The Water Board will implement the following actions related to outreach and education:

- Encourage integrated pest management and less toxic pest management practices;
- Encourage grant funding for activities likely to reduce pesticide discharges, promote less toxic pest management practices, or otherwise further the goals of this implementation plan; and
- Encourage pilot demonstration projects that show promise for reducing pesticide discharges throughout the Region.

The Water Board will implement the following actions related to research, monitoring, and overall program coordination:

- Promote and support studies to address critical data needs (see Adaptive Implementation, below); and
- Assist municipalities and others implementing this strategy by convening stakeholder forums to coordinate implementation.

7.3.6.2 U.S. ENVIRONMENTAL PROTECTION AGENCY ACTIONS

U.S. EPA is responsible for implementing the Federal Insecticide, Fungicide, and Rodenticide Act and the Clean Water Act. U.S. EPA is therefore responsible for ensuring that both federal pesticide laws and water quality laws are implemented. U.S. EPA should exercise its authorities to ensure that foreseeable pesticide applications do not cause or contribute to water column or sediment toxicity in the Region's waters. Because some pesticides pose water quality risks, U.S. EPA should implement the following actions:

- Continue internal coordination efforts to ensure that pesticide applications and resulting discharges comply with water quality standards and avoid water quality impairment (i.e., restrict uses or application practices to manage risks);
- Continue and enhance education and outreach programs to encourage integrated pest management and less toxic pest control; and
- Complete studies to address critical data needs (see Adaptive Implementation, below).

7.3.6.3 CALIFORNIA DEPARTMENT OF PESTICIDE REGULATION ACTIONS

Like the Water Board, the California Department of Pesticide Regulation is part of the California Environmental Protection Agency. It regulates pesticide product sales and use within California

pursuant to the California Food and Agricultural Code. When the California Department of Pesticide Regulation evaluates whether to register a pesticide product, it must give special attention to the potential for environmental damage, including interference with attainment of water quality standards. The California Department of Pesticide Regulation is mandated to protect water quality from environmentally harmful pesticide materials, which should include pesticides used such that their runoff violates water quality standards. The California Department of Pesticide Regulation should also recognize pesticides used such that their runoff poses a reasonable potential to violate water quality standards to be potentially harmful and take preventive action to address foreseeable risks. The Water Board will assist the California Department of Pesticide Regulation in identifying pesticides that could harm water quality.

The California Department of Pesticide Regulation must endeavor to mitigate adverse effects of pesticides that endanger the environment, such as existing or reasonably foreseeable pesticiderelated violations of water quality standards. If a pesticide product has a demonstrated serious uncontrollable adverse effect, mitigation may include canceling its registration. Mitigation is also warranted to avoid existing and reasonably foreseeable serious uncontrolled adverse effects. The Water Board will notify the California Department of Pesticide Regulation whenever it obtains information concerning actual or potential water quality standard violations so the California Department of Pesticide Regulation can implement appropriate protective actions.

To be effective, this strategy relies on the California Department of Pesticide Regulation to use its authorities in concert with the Water Board. Consistent with its authorities, the California Department of Pesticide Regulation should implement the following actions:

- Work with the Water Board to identify pesticides applied in urban areas in such a manner that runoff does or could cause or contribute to water quality standard violations;
- Condition registrations, as appropriate, to require registrants to provide information necessary to determine the potential for their products to cause or contribute to water quality standard violations and to implement actions necessary to prevent violations;
- Continue and enhance efforts to evaluate the potential for registered pesticide products to cause or contribute to water quality standard violations (the California Department of Pesticide Regulation need not wait for the Water Board to evaluate potential water quality effects);
- Implement actions to eliminate pesticide-related water quality standard violations caused by registered pesticides;
- Implement actions to prevent potential pesticide-related water quality standard violations before they occur;
- Notify U.S. EPA of potential deficiencies in product labels for products that threaten water quality;
- Continue and enhance education and outreach programs to encourage integrated pest management and less toxic pest control (work with County Agricultural Commissioners, urban runoff management agencies, and the University of California Statewide Integrated Pest Management Program to coordinate activities);
- Continue and enhance efforts to prevent the introduction of new exotic pests to the Region; and

- Complete studies to address critical data needs (see Adaptive Implementation, below).

7.3.6.4 COLLABORATION WITHIN THE CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

As sister agencies within the California Environmental Protection Agency, the Water Board and the California Department of Pesticide Regulation should coordinate pesticide and water quality regulation in the Region. In 1997, the California Department of Pesticide Regulation and the State Water Resources Control Board entered into a management agency agreement. The California Department of Pesticide Regulation agreed to ensure that compliance with numeric and narrative water quality objectives is achieved. The State and Regional Water Boards retained responsibility for interpreting compliance with narrative water quality objectives. In light of the agreement, the Water Board and the California Department of Pesticide Regulation should work together to eliminate recurrences of water quality standard violations and prevent potential future violations. In consultation with the California Department of Pesticide Regulation, the Water Board will implement the following actions:

- Gather and review available information to identify pesticides most likely to run off into urban creeks and cause or contribute to water quality standard violations;
- Identify evaluation criteria that can be used to discern whether water quality standards are met (e.g., water quality objectives, targets, monitoring benchmarks, or other criteria);
- Evaluate available information to determine whether water quality standards are met and, if so, whether circumstances suggest that future violations are likely; and
- Notify the California Department of Pesticide Regulation and County Agricultural Commissioners if water quality standard violations exist or are likely to exist in the future due to pesticide discharges, thereby enabling these agencies to implement appropriate actions and assisting them in ensuring that their regulatory programs adequately protect water quality.

In consultation with the Water Board, the California Department of Pesticide Regulation should implement the following actions:

- When available information is insufficient to conclude whether water quality standards are met, work with the Water Board to identify information needed to evaluate the potential for pesticide discharges to cause or contribute to water quality standard violations;
- Obtain information necessary to determine whether water quality standards are or are likely to be met from pesticide product registrants, U.S. EPA, and other sources (conservative [i.e., protective] assumptions may be used to fill information gaps);
- Evaluate whether water quality standards are likely to be met (e.g., consider pesticide use, toxicity, application sites and techniques, runoff potential, and environmental persistence; estimate foreseeable water and sediment pesticide concentrations; and consider Water Board evaluation criteria);
- When pesticide discharges are or are likely to cause or contribute to water quality standard violations, identify and evaluate possible corrective actions (using the Water Board's evaluation criteria) and implement those needed to ensure that water quality standards will be met; and

- When available information suggests that pesticide discharges appear likely to cause or contribute to water quality standard violations in the future (assuming standards are currently met), identify and evaluate possible preventive actions and, commensurate with the weight of the evidence, implement those actions needed to ensure that water quality standards will be met.

Sometimes, a pesticide-by-pesticide approach may be counterproductive, particularly if existing pesticide problems are likely to be replaced by new pesticide problems. As appropriate, the California Department of Pesticide Regulation may evaluate several pesticides at once if related to a specific application method, application site of concern, or other shared factor.

During adaptive implementation reviews (see "Adaptive Implementation," below), the Water Board will consider the extent to which inter-agency collaboration is sufficient to address water quality concerns. If necessary, the Water Board will notify the California Department of Pesticide Regulation of deficiencies and could consider the need to use its own regulatory authorities to control pesticide discharges.

7.3.6.5 COUNTY AGRICULTURAL COMMISSIONERS ACTIONS

County Agricultural Commissioners are the local enforcement agents for the California Department of Pesticide Regulation. They provide local enforcement of applicable pesticide laws and, when necessary to address local circumstances (e.g., localized toxicity in an urban creek), can adopt local regulations (subject to California Department of Pesticide Regulation approval) that govern the conduct of pest control operations and the records and reports of those operations. County Agricultural Commissioners should implement the following actions:

- Continue and enhance enforcement related to illegal sale or use of pesticides, including pesticides sold over-the-counter;
- Continue to enforce the phase out of diazinon products and any new regulations affecting pesticide applications and their water quality risks;
- Continue and enhance efforts to prevent the introduction of new exotic pests to the Region;
- Provide outreach and training to pest control licensees regarding water quality issues as part of pest control business license registration and inspection programs; and
- Work with the California Department of Pesticide Regulation, urban runoff management agencies, and the University of California Statewide Integrated Pest Management Program to coordinate education and outreach programs to minimize pesticide discharges.

7.3.6.6 STRUCTURAL PEST CONTROL BOARD ACTIONS

The Structural Pest Control Board is responsible for licensing structural pest control professionals. The Structural Pest Control Board requires training and examinations to maintain a license to practice structural pest control, and regulates the advertising practices of structural pest control businesses. The Structural Pest Control Board should implement the following actions:

- Through licensing and other authorities, work to ensure that structural pest control practices result in discharges that comply with water quality standards;

- Work to develop a mechanism through which consumers can determine which structural pest control providers offer services most likely to protect water quality; and
- Work to enhance initial and continuing integrated pest management training for structural pest control licensees.

7.3.6.7 UNIVERSITY OF CALIFORNIA ACTIONS

The University of California Statewide Integrated Pest Management Program promotes pest management education and outreach throughout California. The University of California should implement the following actions:

- Continue and enhance educational efforts targeting urban pesticide users to promote integrated pest management and less toxic pest management practices;
- Continue to encourage and support efforts to identify and improve new less toxic pest management strategies for the urban environment;
- Continue to serve as a resource for information on alternative pest management practices that protect water quality and develop publications others can use to support outreach activities;
- Continue to train University of California Master Gardeners to help disseminate information about integrated pest management and pest management alternatives that protect water quality; and
- Work with the California Department of Pesticide Regulation, County Agricultural Commissioners, and urban runoff management agencies to coordinate education and outreach programs to minimize pesticide discharges.

7.3.6.8 URBAN RUNOFF MANAGEMENT AGENCIES AND SIMILAR ENTITIES ACTIONS

NPDES permits for urban runoff management agencies and similar entities responsible for controlling urban runoff (e.g., industrial facilities, construction sites, California Department of Transportation facilities, universities, and military installations) shall require implementation of best management practices and control measures. Requirements in each NPDES permit issued or reissued and applicable for the term of the permit shall be based on an updated assessment of control measures intended to reduce pesticides in urban runoff. Control measures implemented by urban runoff management agencies and other entities (except construction and industrial sites) shall reduce pesticides in urban runoff to the maximum extent practicable. Control measures for construction and industrial sites shall reduce discharges based on Best Available Technology Economically Achievable. All permits shall remain consistent with the section of this chapter titled "Surface Water Protection and Management—Point Source Control - Stormwater Discharges." These requirements shall be included in permits no later than five years after the effective date of this strategy. If these requirements prove inadequate to meet the targets and allocations, the Water Board will require additional control measures or call for additional actions by others until the targets and allocations are attained.

The following general requirements shall be implemented through NPDES permits issued or reissued for urban runoff discharges:

1. Reduce reliance on pesticides that threaten water quality by adopting and implementing policies, procedures, or ordinances that minimize the use of pesticides that threaten water quality in the discharger's operations and on the discharger's property;
2. Track progress by periodically reviewing the discharger's pesticide use and pesticide use by its hired contractors;
3. Train the discharger's employees to use integrated pest management techniques and require that they rigorously adhere to integrated pest management practices;
4. Require the discharger's contractors to practice integrated pest management; and
5. Study the effectiveness of the control measures implemented, evaluate attainment of the targets, identify effective actions to be taken in the future, and report conclusions to the Water Board.

The following education and outreach requirements shall also be implemented through NPDES permits issued or reissued for urban runoff discharges:

1. Undertake targeted outreach programs to encourage communities within a discharger's jurisdiction to reduce their reliance on pesticides that threaten water quality, focusing efforts on those most likely to use pesticides that threaten water quality;
2. Work with the California Department of Pesticide Regulation, County Agricultural Commissioners, and the University of California Statewide Integrated Pest Management Program to coordinate education and outreach programs to minimize pesticide discharges.
3. Encourage public and private landscape irrigation management that minimizes pesticide runoff; and
4. Facilitate appropriate pesticide waste disposal, and conduct education and outreach to promote appropriate disposal.

The following monitoring and reporting requirements shall also be implemented through NPDES permits issued or reissued for urban runoff discharges:

1. Monitor diazinon and other pesticides discharged in urban runoff that pose potential water quality threats to urban creeks; monitor toxicity in both water and sediment; and implement alternative monitoring mechanisms, if appropriate, to indirectly evaluate water quality as described below (see Monitoring, below);
2. Disseminate monitoring data to appropriate regulatory agencies; and
3. Contribute to studies to address critical data needs (see Adaptive Implementation, below).

The following requirements related to regulatory programs shall also be implemented through NPDES permits issued or reissued for urban runoff discharges:

1. Track U.S. EPA pesticide evaluation and registration activities as they relate to surface water quality and, when necessary, encourage U.S. EPA to coordinate implementation of the Federal Insecticide, Fungicide, and Rodenticide Act and the Federal Clean Water Act and to accommodate water quality concerns within its pesticide registration process;
2. Assemble and submit information (such as monitoring data) as needed to assist the California Department of Pesticide Regulation and County Agricultural Commissioners

in ensuring that pesticide applications within the Region comply with water quality standards; and
3. Report violations of pesticide regulations (e.g., illegal handing) to County Agricultural Commissioners.

The actions above may be implemented by individual urban runoff management entities, jointly by two or more entities acting in concert, or cooperatively through a regional approach, as appropriate.

NPDES permits issued or reissued for industrial, construction, and California Department of Transportation facilities shall implement the general requirements and education and outreach requirements listed above and monitoring requirements as appropriate.

7.3.6.9 PRIVATE ENTITIES ACTIONS

Most pesticides do not occur naturally in the environment; they are manufactured. Pesticide manufacturers and formulators sell products to distributors and retailers, who sell them to the pesticide users who apply them. These private entities should implement the following actions to prevent pesticide-related toxicity in urban creeks:

- Pesticide manufacturers and formulators should minimize potential pesticide discharges by developing and marketing products designed to avoid discharges that exceed water quality standards. (Many manufacturers successfully market such products.) They should also undertake studies to address critical data needs (see Adaptive Implementation, below);
- Distributors and retailers should offer point-of-sale information on less toxic alternatives. They should also offer and promote less toxic alternatives to customers;
- Pest control advisors should recommend integrated pest management strategies so pesticides that could threaten water quality are used only as a last resort; and
- Pesticide users (e.g., private citizens, professional pesticide applicators, school districts, transit districts, and mosquito abatement and vector control districts) should adopt integrated pest management and less toxic pest control techniques so pesticide applications do not contribute to pesticide runoff and toxicity in urban creeks.

7.3.7 MONITORING

Monitoring is needed to demonstrate target attainment and to track and evaluate the effectiveness of strategy implementation. Diazinon monitoring needs to demonstrate that diazinon concentrations meet the target. When the concentrations consistently drop below the target, such monitoring may no longer be needed. However, because other pesticides will continue to be applied in urban areas, the need to monitor for water and sediment toxicity—and sometimes specific pesticides—will likely remain well after achieving the diazinon concentration target.

A number of programs monitor pesticide concentrations and toxicity in the Region's waters, including the Water Board's Surface Water Ambient Monitoring Program, the California Department of Pesticide Regulation's Surface Water Protection Program, and the Regional Monitoring Program for Trace Substances. Municipal storm water NPDES permits may also

require dischargers to characterize their discharges and receiving waters. This can involve monitoring toxicity and specific pollutants, like diazinon, in storm drain systems and urban creeks.

7.3.7.1 MONITORING REQUIREMENTS

Monitoring requirements shall be implemented through NPDES permits issued or reissued for urban runoff discharges. Urban runoff management agencies shall undertake monitoring efforts related to pesticides and toxicity. They shall design and implement a monitoring program to answer the following questions:

- Is the diazinon concentration target being met?
- Are the toxicity targets being met?
- Is toxicity observed in urban creeks caused by a pesticide?
- Is urban runoff the source of any observed toxicity in urban creeks?
- How does observed pesticide-related toxicity in urban creeks (or pesticide concentrations contributing to such toxicity) vary in time and magnitude across urban creek watersheds, and what types of pest control practices contribute to such toxicity?
- Are actions already being taken to reduce pesticide discharges sufficient to meet the targets, and if not, what should be done differently?

The monitoring program may be developed by individual urban runoff management agencies, jointly by two or more agencies acting in concert, or cooperatively through a regional approach. Designing the program shall involve characterizing watersheds, selecting representative creeks, identifying sample locations, developing sampling plans, and selecting appropriate analytical tests of water and sediment. Chemical and toxicity tests shall be conducted on urban creek water and sediment. At a minimum, tests shall be used to measure the following:

- Water column toxicity;
- Sediment toxicity;
- Diazinon concentrations in water (until the diazinon concentration target is met consistently); and
- Concentrations of other pesticides that pose potential water quality and sediment quality threats, as feasible.

Sampling frequency, timing, and number of samples shall be adequate to answer the monitoring questions above and any others set forth for the monitoring program.

Additional types of monitoring tools may be used to support and optimize conventional water and sediment monitoring. For example, monitoring in storm drain systems or near application sites may be useful in selecting creek sampling strategies because pesticide concentrations are easier to detect nearer to the pesticide application site. Efforts to monitor parameters that can serve as surrogates or indicators of pesticide-related water quality conditions may moderate the need for more comprehensive water quality monitoring. While some toxicity and pollutant monitoring will always be necessary, extensive monitoring will be less important if other information is collected that can be used to evaluate the potential for toxicity or specific pollutants to occur in water. Alternative monitoring information can also help focus water

quality monitoring efforts and mitigation actions. Such monitoring could include reviewing pesticide sales and use data for the Region, pesticide fate and transport data, and public attitudes regarding pesticides and water quality. If undertaken, such monitoring may seek to answer the following questions:

- What pesticides pose the greatest water quality risks?
- How is the use of such pesticides changing?
- Are existing actions effective in reducing pesticide discharges that threaten water quality?
- What approach is best for monitoring toxicity and pesticides in urban creek water and sediment?

7.3.7.2 MONITORING BENCHMARKS

To determine whether measured or predicted pesticide concentrations in water are cause for concern, monitoring benchmarks are needed. Ideally, water quality criteria would be used; however, water quality criteria do not exist for most pesticides. In the absence of water quality criteria, a monitoring benchmark may be calculated as follows. Such a monitoring benchmark is not a water quality objective unless adopted as such by the Water Board. Where valid tests have determined four-day LC_{50} values for aquatic organisms (the concentration that kills one half of the test organisms), a monitoring benchmark may be calculated by dividing the lowest LC_{50} value measured by the appropriate benchmark factor from Table 7-8 (typically 14 or less for a registered pesticide).

Monitoring Benchmark = Lowest LC_{50} ÷ Benchmark Factor

Where multiple LC_{50} measurements are available, the lowest "genus mean acute value" may be used in place of the lowest LC_{50}. The term "genus mean acute value," as used here, refers to the geometric mean of the available "species mean acute values" within a genus. The term "species mean acute value," as used here, refers to the geometric mean of available four-day LC_{50} values for each species. Other available information regarding the pesticide (such as its potential for sub-lethal effects) may also be considered to determine if lower monitoring benchmarks are appropriate to reflect attainment of the narrative objectives. Table 7-8 is not intended for deriving monitoring benchmarks for sediment tests.

When monitoring data demonstrate that pesticide concentrations exceed monitoring benchmarks, the information will be considered during periodic reviews undertaken as part of adaptive implementation (see below). When pesticide concentrations exceed monitoring benchmarks, the Water Board may consider such information in determining compliance with the narrative toxicity, sediment, and population and community ecology objectives. The Water Board may also seek additional toxicity data to derive water quality criteria. The Water Board may inform other regulatory agencies (e.g., the California Department of Pesticide Regulation) about the potential threat to water quality and seek action to prevent water quality impairment.

7.3.8 ADAPTIVE IMPLEMENTATION

Adaptive implementation entails taking immediate actions commensurate with available information, reviewing new information as it becomes available, and modifying actions as

necessary based on the new information. Taking immediate action allows progress to occur while more and better information is collected and the effectiveness of current actions is evaluated. Table 7-9 lists specific actions the Water Board will use to track its progress and an implementation timeframe. If the Water Board determines that expected actions by responsible parties are not occurring or are not sufficient to attain allocations and targets, the Water Board will consider appropriate response actions to improve implementation or otherwise consider revisions to the strategy.

7.3.8.1 PERIODIC REVIEW

The Water Board will review this strategy approximately every five years. The reviews will be coordinated through the Water Board's continuing planning program and will provide opportunities for stakeholder participation. If any modifications are needed, they will be incorporated into the Basin Plan. At a minimum, the following focusing questions will be used to conduct the reviews. Additional focusing questions will be developed in collaboration with stakeholders during each review.

1. Are changes in urban creek conditions moving toward improvements in water quality (e.g., toward target attainment)?
2. If it is unclear whether there is progress, how should monitoring efforts be modified to measure trends?
3. If there has not been adequate progress, how might the implementation actions or allocations be modified to improve progress?
4. Is there new information that suggests the need to modify the targets, allocations, or implementation actions?
5. If so, how should the strategy be modified?

During the periodic reviews, the Water Board will consider newly available information regarding such topics as market trends, monitoring results, tools for risk evaluation, outreach effectiveness, and regulatory actions.

7.3.8.2 ADDITIONAL SOURCES

As the strategy is implemented, additional sources of pesticide-related toxicity may emerge, either as the result of a new discharge or a new pesticide being applied. In such situations, the allocations for additional sources shall be the same as those for the existing sources unless the Water Board finds these allocations to be inappropriate or chooses to refine the strategy in some other manner.

7.3.8.3 CRITICAL DATA NEEDS

Various types of information and tools are needed to adequately evaluate the risks associated with pesticide runoff. To the extent possible, the pesticide industry should shoulder the burden of collecting this information and developing appropriate tools. At times, however, the citizens of the Region (as represented by the Water Boards, the urban runoff management agencies, and others) should lead by example. Therefore, the pesticide industry should undertake and others should support and promote the following actions:

- Conduct surveillance monitoring of surface waters and sediment and publicly report the results;
- Develop publicly available and commercially viable analytical methods to detect ecologically relevant concentrations of pesticides that pose water quality risks;
- Develop procedures that can be used to identify potential causes of toxicity in water and sediment (e.g., Toxicity Identification Evaluation procedures);
- Complete publicly available studies that characterize the fate and transport of pesticides applied in urban areas;
- Develop and adopt evaluation methods (e.g., quantitative fate and transport models) for urban pesticide applications, including applications to impervious surfaces; and
- Complete publicly available studies to support the development of water quality criteria for pesticides in water and sediment.

TABLES

Table 7-1: Monitoring Stations for Copper and Nickel in Lower South San Francisco Bay

Table 7-2: Water Quality Targets for Tomales Bay and Its Tributaries

Table 7-3: Total Maximum Daily Load of Pathogens Indicators for Tomales Bay and Its Tributaries

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Table 7-4B: Density-Based Pollutant Load Allocations for Tomales Bay Tributaries

Table 7-5: Trackable Implementation Measures for the Tomales Bay Watershed Pathogens Total Maximum Daily Load

Table 7-6: Regulatory Framework for Dischargers by Source Category

Table 7-7: Baseline Water Quality Monitoring Program

Table 7-8: Benchmark Factors

Table 7-9: Water Board Implementation Measure Tracking

Table 7-1: Monitoring Stations for Copper and Nickel in Lower South San Francisco Bay

SBS Site ID	Reference Location	Longitude	Latitude	RMP Site ID
SB01	Channel Marker #14	37° 30.782'	122° 8.036'	BA30
SB02	Channel Marker #16	37° 29.595'	122° 5.243'	BA20
SB03	Channel Marker #20	37° 27.437'	122° 3.033'	BA10
SB04	Coyote Creek Railroad Bridge	37° 27.600'	121° 58.540'	C-3-0
SB05	Coyote Creek at Guadalupe River confluence	37° 27.875'	122° 1.406'	NA
SB06	Between Channel Markers #17 & #18	37° 28.390'	122° 4.180'	NA
SB07	Mouth of Mowry Slough	37° 29.499'	122° 3.110'	NA
SB08	Mouth of Newark Slough	37° 30.066'	122° 5.231'	NA
SB09	North of Cooley Landing	37° 28.959'	122° 7.068'	NA
SB10	Old Palo Alto Yacht Club Channel Mouth	37° 28.087'	122° 5.846'	NA
SB11	Standish Dam in Coyote Creek	37° 27.150'	121° 55.501'	BW10
SB12	Alviso Yacht Club Dock	37° 25.574'	121° 58.778'	BW15

Table 7-2: Water Quality Targets[a] for Tomales Bay and Its Tributaries

Zero discharge of human waste

Shellfish harvest closures < 30 days/year

Coliform Bacteria Levels
(Expressed as Most Probable Number [MPN] of fecal coliforms per 100 mL of water)

Tomales Bay

Median < 14 [b] and 90th percentile < 43 [c]

Tomales Bay Tributaries

Log mean <200 [b] and 90th percentile < 400 [c]

NOTES:

a. These targets are applicable year-round.

b. Based on a minimum of five consecutive samples equally spaced over a 30-day period.

c. No more than 10% of total samples during any 30-day period may exceed this number.

Table 7-3: Total Maximum Daily Load of Pathogens Indicators for Tomales Bay and Its Tributaries

Waterbody	Indicator Parameter	TMDL (Most Probable Number (MPN) of fecal coliforms per 100 mL of water)
Tomales Bay	Fecal coliform	median < 14[a] 90th percentile < 43[b]
Major Tributaries: Walker Creek Lagunitas Creek Olema Creek	Fecal coliform	log mean < 200[a] 90th percentile < 400[b]

NOTES:

a. Based on a minimum of five consecutive samples equally spaced over a 30-day period.

b. No more than 10% of total samples during any 30-day period may exceed this number.

Table 7-4A: Density-Based Pollutant Wasteload and Load Allocations[a] for Dischargers of Pathogens in Tomales Bay Watershed

Categorical Pollutant Source	Wasteload and Load Allocations Fecal Coliform (MPN/100 mL)		
	For Direct Discharges to the Bay		For Discharges to Major Tomales Bay Tributaries
	Median[b]	90th Percentile[c]	Log Mean[b]
Onsite Sewage Disposal Systems	0	0	0
Small Wastewater Treatment Facilities	0	0	0
Boat Discharges	0	0	N/A
Grazing Lands	<14	<43	< 200
Dairies	<14	<43	< 200
Equestrian Facilities	<14	<43	< 200
Municipal Runoff	<14	<43	< 200
Open space lands (terrestrial wildlife) [d]	<14	<43	< 200
In-Bay Background (marine wildlife) [d]	<14	<43	N/A

NOTES:

a. These allocations are applicable year-round. Wasteload allocations apply to any sources (existing or future) subject to regulation by a NPDES permit.
b. Based on a minimum of five consecutive samples equally spaced over a 30-day period.
c. No more than 10% of total samples during any 30-day period may exceed this number.
d. Open space lands and the Bay contain wildlife and are therefore recognized as potential source areas. These areas are not believed to be a significant source of pathogens and their contribution is considered natural background; therefore, no management measures are required.

Table 7-4B: Density-Based Pollutant Wasteload and Load Allocations for Tomales Bay Tributaries

Tributary	Allocation Fecal Coliform (MPN/100 mL) Log Mean
Walker Creek at Highway 1 Bridge	95[a]
Lagunitas Creek at Green Bridge	95[a]

NOTE:

a. Based on a minimum of five consecutive samples equally spaced over a 30-day period.

Table 7-5: Trackable Implementation Measures for the Tomales Bay Watershed Pathogens Total Maximum Daily Load

Source Category	Action	Implementing Party	Completion Dates
On-Site Sewage Disposal Systems (OSDS)	Submit to the Executive Officer for approval a plan and implementation schedule to evaluate OSDS performance for the Tomales Bay watershed and to bring identified OSDS up to County's repair standards.	Marin County, Community Development Agency	January 2007
	Report progress on implementation of OSDS evaluation and repair program.	Marin County, Community Development Agency	Starting January 2011 and biennially thereafter
Small Wastewater Treatment Facilities	Comply with applicable Waste Discharge Requirements (WDRs).	Small wastewater treatment facilities	As specified in the applicable WDRs
	Inspect and evaluate all permitted WDR facilities and update WDRs as warranted.	Water Board staff	January 2009
	Report progress on inspection and evaluation of WDR facilities.	Water Board staff	No less than once every five years starting in January 2009

Source Category	Action	Implementing Party	Completion Dates
Boat Discharges	In coordination with interested stakeholders in Tomales Bay, determine the adequacy of on-shore restroom facilities and boater disposal/pump out facilities, and prepare a schedule for a determination of Pumpout Facility Need and Public Hearing Notification, as appropriate.	Regional Water Board	January 2009
	Water Board will coordinate with participating agencies and rely on their interests and authorities to develop and implement a Tomales Bay boating management plan that includes: evaluation of existing moorings and water quality impacts; permitting and enforcement procedures to ensure compliance with applicable mooring requirements and to ensure no sewage discharge from boats.	Point Reyes National Seashore, California Coastal Commission, California State Lands Commission, California State Parks, County of Marin, Regional Water Board,-Gulf of the Farallones National Marine Sanctuary.	January 2009
	Report progress on implementation of boating management plan.	As specified in the Boating Management Plan: Point Reyes National Seashore, California Coastal Commission, California State Lands Commission, California State Parks, County of Marin, Regional Water Board, Gulf of the Farallones National Marine Sanctuary	As specified in the Boating Management Plan
	Comply with boating management plan for Tomales Bay.	Boaters	As specified in the Boating Management Plan

Source Category	Action	Implementing Party	Completion Dates
Grazing Lands[1]	Submit a Report of Waste Discharge[2] to the Water Board that provides the following: a description of the facility; identification of necessary site-specific grazing management measures to reduce animal waste runoff; and a schedule to implement identified management measures.	Dairies and ranchers (landowners and leasees). These Reports may be submitted individually or jointly or through a third party.	January 2009
	Comply with applicable Waste Discharge Requirements (WDRs) or waiver of WDRs.	Dairies and ranchers (landowners and leasees)	As specified in applicable WDRs or waiver of WDRs
	Report progress on implementation of grazing-management measures that reduce animal waste runoff.	Dairies and ranchers (landowners and leasees). These reports may be submitted individually or jointly or through a third party.	As specified in applicable WDRs or waiver of WDRs
Dairies[3]	Comply with applicable Waiver of Waste Discharge Requirements (WDRs) for confined animal facilities or requirements specified in applicable individual WDRs.	Dairies (landowners and leasees)	As specified in applicable WDRs or waiver of WDRs

[1] Grazing lands include all land areas grazed by livestock such as ranchlands, riparian areas, and pasturelands. Confined animal facilities which are already regulated under existing WDRs or waiver of WDRs and are excluded from this requirement.
[2] WDRs waiver conditions may allow for other submittals in lieu of a Report of Waste Discharge.
[3] These implementation actions for Dairies are for the confined animal portions of the facilities and do not include the grazing areas. Implementation actions for grazing lands associated with dairies are included under Grazing lands.

Source Category	Action	Implementing Party	Completion Dates
Equestrian Facilities	Submit a Report of Waste Discharge[2] to the Water Board that provides the following: a description of the facility; identification of necessary site-specific management measures to reduce animal waste runoff; and a schedule for implementation of identified management measures.	Equestrian facilities. These Reports may be submitted individually or jointly or through a third party.	January 2009
	Comply with applicable Waste Discharge Requirements (WDRs) or waiver of WDRs.	Equestrian facilities	As specified in applicable WDRs or waiver of WDRs.
	Report progress on implementation of management measures that reduce animal waste runoff.	Equestrian facilities. These reports may be submitted individually or jointly or through a third party.	As specified in applicable WDRs or waiver of WDRs
Municipal Runoff	Submit to Water Board for approval a stormwater management plan (that includes management measures to reduce pathogens runoff and a schedule for implementation of identified management measures.	Marin County, Stormwater Pollution Prevention Program	January 2009
	Report progress on implementation of pathogens-reduction measures.	Marin County, Stormwater Pollution Prevention Program	As specified in approved stormwater management plan

Table 7-6: Regulatory Framework for Discharges by Source Category

Source Category	Regulatory Tool
On-site Sewage Disposal Systems (OSDS)	Waiver[a] of Waste Discharge Requirements Prohibition of Human Waste Discharge
Small Wastewater Treatment Facilities	Individual Waste Discharge Requirements Prohibition of Human Waste Discharge
Boat Discharges	Prohibition of Human Waste Discharge
Grazing Lands	Waiver[a] of Waste Discharge Requirements
Dairies	Waiver[a] of Waste Discharge Requirements or Individual WDRs, as appropriate
Equestrian Facilities	Waiver[a] of Waste Discharge Requirements
Municipal Runoff	NPDES Permit

NOTE:

a. Water Board retains the option of requiring individual waste discharge requirements or compliance with a discharge prohibition, as appropriate.

Table 7-7: Baseline Water Quality Monitoring Program

Constituent	Location	Frequency	Sampling Entities
Tomales Bay			
Fecal coliform[a]	California Department of Health Services designated primary water quality monitoring stations	Weekly for five weeks beginning in January; Monthly March – December Weekly for five weeks during summer months	Shellfish growers
Tributaries			
Fecal coliform Stream Flow	Olema Creek (tributary to Lagunitas)	Weekly for five weeks beginning in January; Monthly March - December Weekly for five weeks during summer months	National Park Service
Fecal coliform	West Shore tributaries	Same as above	Inverness Public Utilities District
Fecal coliform	East Shore tributaries	Same as above	Water Board
Fecal coliform Stream Flow	Lagunitas Creek	Same as above	Water Board, Salmon Protection and Watershed Network
Fecal coliform Stream Flow	Walker Creek	Same as above	Water Board

NOTE:

a. *E. coli* monitoring may be used in the future to assess general water quality trends and exceedances. If *E. coli* is used, a Tomales Bay specific correlation factor linking fecal coliform and *E. coli* levels will need to be established.

Table 7-8: Benchmark Factors

Number of Data Requirements Satisfied [a]	Benchmark Factor [b]
2	16
3	14
4	14
5	12
6	10
7	8

NOTES:

a. U.S. EPA water quality criteria guidelines require data for at least eight taxonomic families to derive water quality criteria.

b. These values apply only when both daphnid and salmonid toxicity data are available. U.S. EPA typically requires such data to register a pesticide.

Table 7-9: Water Board Implementation Measure Tracking

Action	Schedule
Summarize pesticide regulatory activities as they relate to water quality, and identify opportunities to advise pesticide regulatory oversight agencies regarding future actions	Annually
Summarize research and monitoring data for pesticide regulatory oversight agencies and others, and determine where to focus future monitoring efforts based on critical data needs	Annually
Describe urban pesticide use trends and identify pesticides likely to affect water quality	Annually
Notify pesticide regulatory oversight agencies if water quality standard violations exist or are likely to exist in the future due to pesticide discharges	At least annually
Identify waters impaired by pesticide-related toxicity and waters where there is a potential for impairment	Biannually
Meet or correspond with pesticide regulatory oversight agencies regarding their roles in protecting water quality	At least annually
Place required actions in NPDES stormwater permits	No later than five years from effective date of strategy
Report implementation status to Water Board	Annually

Final Staff Report

Including the Substitute Environmental Documentation

Amendment to the Water Quality Control Plan for the Ocean Waters of California to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California



DIVISION OF WATER QUALITY

STATE WATER RESOURCES CONTROL BOARD

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY

State of California
Edmund G. Brown Jr., Governor

California Environmental Protection Agency
Matthew Rodriquez, Secretary

State Water Resources Control Board
1001 I Street
Sacramento, CA 95814
(916)341-5250
Homepage: http://www.waterboards.ca.gov

Felicia Marcus, Chairman
Frances Spivy-Weber, Vice Chair
Tam M. Doduc, Member
Steven Moore, Member
Dorene D'Adamo, Member

Tom Howard, Executive Director

Jonathan Bishop, Chief Deputy Director
Caren Trgovcich, Chief Deputy Director

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LIST OF ABBREVIATIONS

AB	Assembly Bill
ASBS	Areas of Special Biological Significance
Basin Plans	Regional Water Quality Control Plan
BASMAA	Bay Area Stormwater Management Agencies Association
BMP	Best Management Practices
Caltrans	California Department of Transportation
CASQA	California Stormwater Quality Association
CCR	California Code of Regulations
CEQA	California Environment Quality Act
CGP	Construction General Permit
Colorado River Basin Water Board	Colorado River Basin Regional Water Resource Control Board
CWA	Clean Water Act
GIS	Geographic Information System
LID	Low-Impact Development Controls
Los Angeles Water Board	Los Angeles Regional Water Quality Control Board
IGP	Industrial Storm Water General Permit
ISWEBE Plan	Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California
MFAC	Minimum Frequency of Assessment and Collection
MRP	San Francisco Bay Municipal Regional Stormwater Permit
MS4	Municipal Separate Storm Sewer System
NOAA	National Oceanic and Atmospheric Administration
North Coast Water Board	North Coast Regional Water Quality Control Board
NPDES	National Pollutant Discharge Elimination System
Ocean Plan	Water Quality Control Plan for Ocean Waters of California
Porter-Cologne	Porter-Cologne Water Quality Control Act
Regional Water Board	Regional Water Quality Control Board
San Francisco Bay Water Board	San Francisco Bay Regional Water Quality Control Board
SB	Senate Bill
SED	Substitute Environmental Documentation
State Water Board	State Water Resources Control Board
TMDLs	Total Maximum Daily Loads
Trash Amendments	Amendment to the Water Quality Control Plan for Ocean Waters of California to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California
U.S. EPA	United States Environmental Protection Agency
Wat. Code	California Water Code
Water Boards	State and Regional Water Quality Control Boards
WDR	Waste Discharge Requirements

1 INTRODUCTION

Trash is junk or rubbish generated by human activity that frequently ends up in waterways. Trash is items such as cigarette butts, paper, fast food containers, plastic grocery bags, cans and bottles, used diapers, construction site debris, industrial preproduction plastic pellets, old tires, and appliances. Trash discarded on land frequently ends up in waterways and the ocean as rainstorms wash it into gutters and storm drains, and then into creeks and rivers. The presence of trash in waterways adversely affects beneficial uses, including but not limited to threats to aquatic life, wildlife, and public health.

The State Water Resources Control Board and Regional Water Quality Control Boards (collectively, the Water Boards) are controlling trash primarily through Total Maximum Daily Loads (TMDLs) and permits. The Los Angeles Regional Water Quality Control Board (Los Angeles Water Board) led the way with effective trash management strategies with the Los Angeles River Watershed Trash TMDL. The San Francisco Bay Regional Water Quality Control Board (San Francisco Bay Water Board) is following this lead with trash components to their Municipal Regional Storm Water National Pollutant Discharge Elimination System (NPDES) Permit. These approaches are not entirely consistent, and there are still ongoing trash problems across the state waterways. There is a strong need for a statewide consistency within the Water Boards regarding trash control.

The State Water Resources Control Board (State Water Board) is proposing an Amendment to the Water Quality Control Plan for Ocean Waters of California to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. This Staff Report shall collectively refer to the amendment to control trash and Part 1 Trash Provisions as "Trash Amendments".[1] The provisions proposed in the Trash Amendments include six elements: (1) water quality objective, (2) applicability, (3) prohibition of discharge, (4) implementation provisions, (5) time schedule, and (6) monitoring and reporting requirements. The proposed provisions would apply to all surface waters of the state, with the exception of those waters within the jurisdiction of the Los Angeles Water Board with trash or debris TMDLs that are in effect prior to the effective date of the Trash Amendments.

This Final Staff Report analyzes the need for the final Trash Amendments and alternative options to the Trash Amendments considered by the State Water Board. This document also serves as the State Water Board's Substitute Environmental Documentation (SED) required to meet the requirements of the California

[1] The State Water Board intends to amend the Water Quality Control Plan for Enclosed Bays and Estuaries of California to create the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California Plan (ISWEBE Plan). The State Water Board intends that the Part 1 Trash Provisions will be incorporated into the ISWEBE Plan, once it is adopted.

Environmental Quality Act (CEQA)[2], pursuant to Public Resources Code sections 21080.5, 21159 and CEQA Guidelines sections 15250 – 15253; and the State Water Board's Regulations for Implementation of the Environmental Quality Act of 1970, 23 California Code of Regulations (CCR) sections 3720 – 3781.

1.1 Purpose of the Staff Report

The purpose of this Final Staff Report is to present the State Water Board's analysis of the need for and the effects of the final Trash Amendments and meet the State Water Board's requirement to comply with CEQA.

CEQA authorizes the Secretary for Natural Resources to certify that state regulatory programs meeting certain environmental standards are exempt from many of the procedural requirements of CEQA (CCR, Title 14, § 15251(g)). The Secretary for Natural Resources has certified the State Water Board regulations for adoption or approval of standards, rules, regulations, or plans to be used in the Basin/208 Planning program for the protection, maintenance, and enhancement of water quality in California (23 CCR § 3775 – 3781). Therefore, this Final Staff Report includes the documentation (i.e., draft SED) required for compliance with CEQA, and a separate CEQA document will not be prepared.

According to the State Water Board regulations for the implementation of CEQA (23 CCR § 3777), the SED shall consist of a written report prepared for the Board containing an environmental analysis of the project; a completed environmental checklist (where the issues identified in the checklist must be evaluated in the checklist or elsewhere in the SED); and other documentation as the board may include. The SED is required to include, at a minimum, the following information:

1) A brief description of the proposed project;
2) An identification of any significant or potentially significant adverse environmental impacts of the proposed project;
3) An analysis of reasonable alternatives to the project and mitigation measures to avoid or reduce any significant or potentially significant adverse environmental impacts; and
4) An environmental analysis of the reasonably foreseeable methods of compliance. The environmental analysis shall include, at a minimum, all of the following:
    a) An identification of the reasonably foreseeable methods of compliance with the project;

[2] CEQA provides that certain regulatory programs of state agencies may be certified by the Secretary for Natural Resources as being exempt from the requirements for preparing Environmental Impact Reports (EIR), Negative Declarations, and Initial Studies if the Secretary finds that the program meets certain criteria. A certified program remains subject to other provisions in CEQA such as the policy of avoiding significant adverse effects on the environment where feasible. The Secretary has certified the State Water Resource Control Board regulatory program for adoption or approval of standards, rules, regulations, or plans to be used in the Basin/208 Planning program for the protection, maintenance, and enhancement of water quality in California as an exempt certified state regulatory program (Pub. Res. Code § 21080.5; Cal. Code Regs., tit.14, § 15251, subd. (g)).

b) An analysis of any reasonably foreseeable significant adverse environmental impacts associated with those methods of compliance;
c) An analysis of reasonably foreseeable alternative methods of compliance that would have less significant adverse environmental impacts; and,
d) An analysis of reasonably foreseeable mitigation measures that would minimize any unavoidable significant adverse environmental impacts of the reasonably foreseeable methods of compliance.

In the preparation of this Final Staff Report, the State Water Board utilizes numerical ranges or averages to assess the potential environmental impacts over a broad range of geographic areas within the state covering all nine regional water board jurisdictions. Per the direction of CEQA and the State Water Board regulations, however, the analysis contained in this Final Staff Report does not engage in speculation or conjecture and the environmental analysis does not attempt to provide a site-specific project level analysis of the methods of compliance (which CEQA may otherwise require of those agencies who are responsible for complying with the plan or policy when they determine the manner in which they comply). The analysis does take into account a reasonable range of environmental, economic, and technical factors, population and geographic areas, and specific sites. (Pub Res Code § 21159; 14 CCR § 15144, 15145; 23 CCR § 3777(c)). Responses to comments and consequent revisions to the information in the Draft Staff Report will be subsequently presented in a Final Staff Report for consideration by the State Water Board. After the State Water Board has certified the document as adequate, the title of the document becomes the Final Staff Report.

1.2 Regulatory Framework

In 1969, the Porter-Cologne Water Quality Control Act (Porter-Cologne) (California Water Code (Wat. Code § 13000 et seq.) was adopted as the principal law governing water quality in California. Porter-Cologne institutes a comprehensive program to protect the quality and "beneficial uses" (or "designated uses" under federal parlance) of the state's water bodies. Beneficial uses include, but are not limited to, "domestic, municipal, agricultural, and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves" (Wat. Code § 13050, subd. (f)). Regulatory protection of beneficial uses is carried out, in part, through water quality objectives established in each regional water quality control plan (basin plan) (Wat. Code § 13241). Under Porter-Cologne, the regional water quality control boards (regional water boards) adopt basin plans in which they designate the beneficial uses of the waters of the region and establish water quality objectives to protect those beneficial uses. Basin plans are required to include a plan of implementation to ensure that waters achieve the water quality objectives.

As proposed, the Trash Amendments would apply to all surface waters of the state, including: ocean waters, enclosed bays and estuaries, and inland surface waters. "Waters of the state" are defined under Porter-Cologne as any surface water or groundwater, including saline waters, within the boundaries of the state (Wat. Code § 13050(e)). Under California state law, territorial boundaries extend three nautical miles

beyond the outermost islands, reefs, and rocks and include all waters between the islands and the coast (Cal. Gov. Code § 170).

In 1972, Congress enacted the federal Clean Water Act (CWA) with the goal to "restore and maintain the chemical, physical, and biological integrity of the Nation's waters" (33 U.S. Code § 1251(a)). The CWA directs states, with oversight by the U.S. Environmental Protection Agency (U.S. EPA), to adopt water quality standards to protect the public health and welfare, enhance the quality of water, and serve the purposes of the CWA. Ultimately, states must provide comprehensive protection of their waters through the application of water quality standards. State standards must include: (1) designated uses for all water bodies within their jurisdictions, and (2) water quality criteria (referred to as objectives under California law) sufficient to protect the most sensitive of the uses. The CWA established the NPDES Permit Program to regulate point source discharges of pollutants to waters of the United States (33 U.S. Code § 1342). In California, the Water Boards issue and administer NPDES permits under a program approved by the U.S. EPA (Wat. Code § 13377), and in conjunction with the requirements of Porter-Cologne.

NPDES permits are required to contain effluent limitations reflecting pollution reduction achievable through technological means, as well as more stringent limitations necessary to ensure that receiving waters meet state water quality standards (33 U.S. Code § 1311(b)(1)(A)-(C)). Section 303, subdivision (c)(2)(B) of the CWA requires states to adopt water quality criteria for all priority pollutants established in section 307(a). As part of its efforts to comply with section 303, subdivision (c)(2)(B), the State Water Board adopted two statewide plans in accordance with Water Code section 13170: the Water Quality Control Plan for Ocean Waters of California (Ocean Plan) in 1972 and the Enclosed Bays and Estuaries Plan in 2008. These statewide plans supersede basin plans to the extent that any conflict exists (Wat. Code § 13170).

The CWA and Porter-Cologne direct the Water Boards to regulate the discharge of pollutants into waters of the United States and waters of the State. Trash is considered a pollutant and where runoff and storm water transport trash into these waters, it is considered discharge of waste subject to Water Board authority.

1.3 Effect on Existing Basin Plans, Trash-Related TMDLs and Permits

Antidegradation

Any relaxation of water quality standards that may occur as a result of the final Trash Amendments must comply with federal and state antidegradation policies, which require the protection of all existing beneficial uses (40 CFR § 131.12, State Water Board Resolution No. 68-16). If the initial water quality exceeds that which is necessary to protect every beneficial use, the water quality can be lowered, as long as certain criteria are met. Dischargers are not allowed to degrade water bodies to levels below that which is necessary to protect existing beneficial uses. The antidegradation analysis for the final Trash Amendments is found in Section 9.

Basin Plans

Following adoption by the State Water Board, the final Trash Amendments would supersede basin plans to the extent that any conflict exists (Wat. Code § 13170).

TMDLs

The final Trash Amendments would apply to all surface waters in the state, with the exception of those waters with the jurisdiction of the Los Angeles Water Board that have trash TMDLs in effect prior to the Trash Amendments. As the fifteen trash TMDLs in the Los Angeles Region have more stringent provisions than the final Trash Amendments, the final Trash Amendments would not result in a degradation of water quality standards in those waters. While the final Trash Amendments do not apply to existing trash TMDLs in the Los Angeles Region, the final Trash Amendments direct the Los Angeles Water Board to reconsider the scope of its trash TMDLs within one year of the Trash Amendments' effective date and focus its permittees' trash control efforts on high trash generation areas rather than all areas within each permittee's jurisdiction. The reconsideration would occur for all existing trash TMDLs, except for the Los Angeles River Watershed and Ballona Creek Trash TMDLs, because those two TMDLs are approaching final compliance deadlines of September 30, 2016 and September 30, 2015, respectively.

Permits

The final Trash Amendments would require permitting authorities to re-open, re-issue, or newly adopt NPDES permits for Municipal Separate Storm Sewer System (MS4) Phase I permittees, MS4 Phase II permittees, and California Department of Transportation (Caltrans) permittees, as well as Industrial Storm Water General Permit (IGP) and Construction General Permit (CGP) permittees, to incorporate the prohibition of discharge and implementation requirements of the final Trash Amendments within those permits. Until such permits are amended, the final Trash Amendments would not apply to dischargers covered under those permits.

A Water Board could, however, adopt storm water NPDES permits with stricter trash-discharge provisions, such as broadening the scope of regulated land uses.

1.4 Beneficial Uses Impacted by Trash

The final Trash Amendments are directed toward achieving the highest water quality consistent with maximum benefit to the people of the state. Beneficial uses, as defined by Porter-Cologne section 13050, are the uses of surface water and groundwater that may be protected against water quality degradation. The Water Boards are charged with protecting all beneficial uses from pollution and nuisance that may occur as a result of waste discharges in the region. Beneficial uses of surface waters, ground waters, marshes, and wetlands serve as a basis for establishing water quality objectives and discharge prohibitions to attain these goals and are defined in the basin plans for each regional water board and the Ocean Plan.

There are many beneficial uses in California that can be affected by trash. This section discusses the impacts of trash on beneficial uses associated with aquatic life and public health.

Trash is a threat to aquatic habitat and life as soon as it enters state waters. Mammals, turtles, birds, fish, and crustaceans are threatened following the ingestion of or entanglement by trash (Moore et al. 2001, U.S. EPA 2002). Ingestion and

entanglement can be fatal for freshwater, estuarine, and marine life. Similarly, habitat alteration and degradation due to trash can make natural habitats unsuitable for spawning, migration, and preservation of aquatic life. These negative effects of trash to aquatic life can impact twelve beneficial uses. A summary of specific impacts associated with each aquatic life beneficial use is presented in Table 13, Appendix A.

Trash in state waters can impact humans by means of jeopardizing public health and safety and posing harm and hindrance in recreational, navigational, and commercial activities. Trash can also affect the traditional and cultural rights of indigenous people or subsistence fishers to waters of the state. Specific impacts associated with each public health beneficial use is presented in Table 14, Appendix A.

1.5 Trash in the Environment

The presence of trash in surface waters, especially coastal and marine waters, is a serious issue in California. Trash discarded on land is frequently transported through storm drains and to waterways, shorelines, the seafloor, and the ocean. Statewide and local studies have documented the presence of trash in state waters and the accumulation of land-based trash in the ocean. Street and storm drain trash studies conducted in regions across California have provided insight into the composition and quantity of trash that flows from urban streets into the storm drain system and out to adjacent waters.

Trash in state waters is related to the direct and indirect activities of inhabitants inland, along coastal shorelines, and offshore (NOAA 2008a). A major source of trash is either intentionally or accidentally improperly discarded waste, thrown or deposited on land and in water bodies. If trash occurs on land, it is commonly transported to nearby water bodies by wind and/or rain or dry weather runoff. The five primary sources and transport mechanisms for trash to reach state waters are:

1) Littering by the public on or adjacent to waterways;
2) Storm events draining watersheds and carrying trash originating from littering, inadequate waste handling or illegal dumping via the storm drain system to receiving waters;
3) Wind-blown trash, also originating from littering, inadequate waste handling or illegal dumping;
4) Illegal dumping into or adjacent to water bodies, and;
5) Direct disposal (overboard disposal and/or dumping) of trash into water bodies from vessels involved in commercial, military, fishing or recreational activities.

Studies show that trash is predominantly generated on land and then transported to a receiving water body. The main transport pathway of trash to receiving water bodies is through storm water transport. Several studies have been conducted to determine the sources of land-based trash generation and the rates of trash generation areas. The land areas evaluated in these studies typically included the following: high density residential, low density residential, commercial services, industrial, public facilities, education institutions, military institution, transportation, utilities, mixed urban, open space, agriculture, water, and recreation land uses (City of Los Angeles 2002, County of

Los Angeles Department of Public Works 2004a; 2004b, City of Cupertino 2012, City of San Jose 2012, EOA, Inc. 2012a; 2012b).

Additional details about the composition of trash, the transport of transport of trash in the environmental, and trash assessment studies can be found in Appendix A.

1.6 Current Efforts to Address Concerns Related to Trash in California Waters

Regulations and policies are currently implemented in California to address trash in state waters. These efforts are discussed in the following sections and in greater detail in Appendix A.

State Laws and Local Ordinances

Numerous statewide laws and local ordinances have been adopted in California to address trash. For instance, California prohibits littering where such litter "creates a public health and safety hazard, a public nuisance, or a fire hazard" (Penal Code § 374.4). The California Vehicle Code provides that no one may throw or trash, including cigarettes onto highways and adjacent areas (§ 23111 and 23112).

California is the leader in implementing local ordinances with goals of reducing trash, specifically plastics. At least 65 jurisdictions have either banned expanded polystyrene foam food containers completely or have prohibited use by government agencies or at public events (Clean Water Action 2011b). In 2006, the City of San Francisco passed a ban on single-use carryout bags in grocery stores and pharmacies. Since then, at least 72 local jurisdictions have adopted city and county ordinances for single-use carryout bags (Environment California Research and Policy Center 2011). Statewide, several attempts have been made to pass single-use plastic bag ban bills over the past several years, including Assembly Bill (AB) 1998 in 2010 and Senate Bill (SB) 405 in 2013, although none have been passed in the State Legislature (West Coast Governors' Alliance on Ocean Health 2013).

On September 30, 2014, Governor Edmund G. Brown Jr. signed the nation's first statewide ban on single-use plastic bags—Senate Bill 270 (Sen. Padilla) (2014 Stat. Ch. 850) (adding Chapter 5.3 to Part 3 of Division 30 of the Public Resources Code). Senate Bill 270 aligns state law with the ordinances passed by local governments in California to reduce plastic waste. The new law prohibits grocery stores and pharmacies that have a specified amount of sales in dollars or retail floor space from providing single-use carry-out plastic bags as of July 1, 2015, and enacts the same ban for convenience stores and liquor stores on or after the following year. The legislation prohibits stores from selling or distributing a recycled paper bag or compostable bags at the point of sale for at a cost of less than $0.10.

No Existing Trash-Specific Water Quality Objectives

Each regional water board has adopted narrative objective(s) for pollutants in its basin plan. These narrative objectives refer to trash-related pollutants and other pollutants such as foam and sediment in general terms (i.e., floatable, suspended, and settleable material), but do not specifically refer to trash as a specific pollutant. The Ocean Plan also has similar floatable, suspended, and settleable material objectives, but no specific mention of trash as a pollutant.

Current NPDES Permits and Existing Trash TMDLs

The CWA establishes the NPDES permit as the primary mechanism for achieving water quality standards in navigable waters. NPDES permits are issued to point source dischargers and include effluent and receiving water limitations. Existing NPDES permits, such as Phase I, Phase II, and Caltrans, have some existing requirements for trash reduction in the form of institutional controls, such as street sweeping and educational programs (Gordon and Zamist 2003). These existing requirements can be applicable to multiple types of urban storm water pollutants, including trash.

For those waters that do not attain water quality standards even after NPDES permits are issued to point sources with the effluent limitations described above, the CWA requires states to adopt TMDLs for the pollutants causing the impairment in a water body. TMDLs are designed to restore water quality by controlling the pollutants that cause or contribute to such impairments.

The presence of trash in California waters has resulted in a number of waters listed as impaired on the CWA section 303(d) list of Water Quality Limited Segments over the past several listing cycles. According to California's 2008-2010 section 303(d) list of impaired waters, there are 73 listings due to trash in California waters. Although listings occur in four regions (San Francisco Bay, Los Angeles, Colorado River Basin, and San Diego), TMDLs have only been developed to date in the Los Angeles Region and the Colorado River Basin Region. In the Colorado River Basin, a TMDL for trash was adopted for the New River (at the international boundary) that included a numeric target of zero trash (Colorado River Basin Water Board 2006). In the Los Angeles Region, fifteen TMDLs were adopted for trash and debris by either the Los Angeles Water Board or U.S. EPA: San Gabriel River East Fork, Ballona Creek, Los Angeles River Watershed, Revolon Slough, and Beardsley Wash, Ventura River Estuary, Malibu Creek Watershed, Lake Elizabeth, Munz Lake, Lake Hughes, Legg Lake, Machado Lake, Santa Monica Bay Nearshore and Offshore, Peck Road Park Lake, Echo Park Lake, and Lincoln Park Lake (Table 16; Los Angeles Water Board 2000; 2004; 2007a; 2007b; 2007c; 2007d; 2007e; 2007f; 2008g; 2010, U.S. EPA 2012a).

The Los Angeles Water Board's trash and debris TMDLs set the numeric target for trash in the applicable water bodies to zero, as derived from the water quality objective in the basin plans. The TMDLs have all also defined trash to be "man-made litter," as defined by the California Government Code (§ 68055.1(g)). Implementation plans vary slightly but are mostly based on phased percent reduction goals that can be achieved through discharge permits, best management practices (BMPs), and structural controls.

The San Francisco Bay Water Board uses provisions in the San Francisco Bay Municipal Regional Stormwater Permit (MRP) to address trash in the 27 303(d) listed water bodies in the Region (Order No. R2-2009-0074). The San Francisco Bay MRP applies to 76 large, medium and small municipalities and flood control agencies in the San Francisco Bay Region. The San Francisco Bay MRP prohibits the discharge of "rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas." The trash-related receiving water limitations identified in the San Francisco Bay MRP do not place numeric targets on trash but uses

narrative language to prohibit trash discharges. The San Francisco Bay MRP requires that permittees reduce trash from their storm sewer systems by 40 percent by July 1, 2014. The San Francisco Bay MRP permittees are developing and implementing a Short-Term Trash Load Reduction Plan to attain the 40 percent (City of Cupertino 2012, City of San Jose 2012).

State Policy Efforts

In response to the increasing problem of trash within California, particularly plastic trash, policymakers have initiated efforts such as the California Ocean Protection Council's Resolution on Reducing and Preventing Marine Debris (2007) and subsequent Implementation Strategy for Reducing Marine Litter (2008). These policies respectively proposed targeted reductions of trash within a set timeline, and prioritize state efforts for source reduction of the "worst offenders" of trash, such as cigarette butts, plastic bottle caps, plastic bags, and polystyrene. In 2013, the West Coast Governor's Alliance on Ocean Health introduced a Marine Debris Strategy. The Strategy provides a toolbox of key actions that may be implemented collaboratively or individually by western states at its discretion and allows for the successful achievement of target milestones through various reduction methods.

1.7 Current Trash Cleanup Costs

A report, commissioned by U.S. EPA Region 9, estimated that West Coast communities (California, Oregon, and Washington) are spending approximately $13 per resident per year to combat and clean up trash that would otherwise end up as marine debris. The report conservatively suggested that West Coast coastal communities are spending more than $520 million to combat trash and marine debris. Cost information was sought for six different trash management activities: beach and waterway cleanup, street sweeping, installation of storm water capture devices, storm drain cleaning and maintenance, manual cleanup of trash, and public anti-trash campaigns. Data was collected from 90 different communities ranging in size from 200 to over four million residents (Stickel et al. 2012). A follow-up study conducted by the Natural Resources Defense Council and Kier Associates focused on the cost of current trash abatement activities for 95 California communities. The study found that California communities annually spend approximately $428 million ($10.5 per resident) to reduce trash and prevent trash from entering state waters. The study found that the average annual reported per capita cost ranged from $8.94 for large communities to $18.33 for small communities (fewer than 15,000 people) with the largest of communities (over 250,000 people) averaging $11.24 (Stickel et al. 2013).

2 PROJECT DESCRIPTION

The Water Board's regulations for implementation of CEQA require the SED to include a brief description of the project (23 CCR 3777(b)(1)). The following section: (1) describes the final Trash Amendments; (2) provides an overview of the objectives of the Plan; and (3) contains non-exclusive lists of: (a) the agencies that are expected to use this SED in their decision making and permits, (b) other approvals required to implement the project, and (c) related environmental review and consultation requirements required by federal, state, or local laws, regulations, or policies.

The complete texts of the final Trash Amendments are included in this Final Staff Report as Appendix D for the Ocean Plan and Appendix E for the ISWEBE Plan.

2.1 Trash Amendments' Description and Project Objective[3]

The State Water Board proposes to adopt the Trash Amendments into both the Ocean Plan and the ISWEBE Plan. The provisions proposed in the Trash Amendments include six elements: (1) water quality objective, (2) applicability, (3) prohibition of discharge, (4) implementation provisions, (5) time schedule, and (6) monitoring and reporting requirements. The proposed provisions would apply to all surface waters of the state, with the exception of those waters within the jurisdiction of the Los Angeles Water Board with trash or debris TMDLs that are in effect prior to the effective date of the Trash Amendments.

The State Water Board's project objective for the final Trash Amendments is to address the impacts of trash to the surface waters in California (with the exception of those waters within the jurisdiction of the Los Angeles Water Board with trash or debris TMDLs that are in effect prior to the effective date of the final Trash Amendments) through development of a statewide plan to control trash. The project objective for the final Trash Amendments is to provide statewide consistency for the Water Boards' regulatory approach to protect aquatic life and public health beneficial uses, and reduce environmental issues associated with trash in state waters, while focusing limited resources on high trash generating areas.

A central element of the final Trash Amendments is a land-use based compliance approach to focus trash controls to the areas with high trash generation rates. Within this land-use based approach, a dual alternative compliance Track approach is proposed for permitted storm water dischargers (i.e., MS4 Phase I, MS4 Phase II, Caltrans, IGP, and CGP) to implement a prohibition of discharge for trash. Table 1 outlines the proposed dual alternative compliance Tracks for permitted storm water dischargers.

[3] The State CEQA Guidelines state that a project description should include "a statement of the objectives sought by the proposed project..[And] should include the underlying purpose of the project" (14 CCR 15124(b)).

Table 1. Overview of Proposed Compliance Tracks for NPDES Storm Water Permits.

	Track 1	Track 2
NPDES Storm Water Permit	MS4 Phase I and II IGP/CGP*	MS4 Phase I and II Caltrans IGP/CGP*
Plan of Implementation	Install, operate and maintain full capture systems in storm drains that capture runoff from one or more of the priority land uses/facility/site.	Implement a plan with a combination of full capture systems, multi-benefit projects, institutional controls, and/or other treatment controls to achieve full capture system equivalency.
Time Schedule	10 years from first implementing permit but no later than 15 years from the effective date of the Trash Amendments.**	10 years from first implementing permit but no later than 15 years from the effective date of the Trash Amendments.**
Monitoring and Reporting	Demonstrate installation, operation, and maintenance of full capture systems and provide mapped location and drainage area served by full capture systems.***	Develop and implement set of monitoring objectives that demonstrate effectiveness of the selected combination of controls and compliance with full capture system equivalency.***

* IGP/CGP permittees would first demonstrate inability to comply with the outright prohibition of discharge of trash.

** Where a permitting authority makes a determination that a specific land use or location generates a substantial amount of trash, the permitting authority has the discretion to determine a time schedule with a maximum of ten years. IGP/CGP permittees would demonstrate full compliance with deadlines contained in the first implementing permit.

*** No trash monitoring requirements for IGP/CGP, however, IGP/CGP permittees would be required to report trash controls.

2.2 Water Quality Objective

To provide consistency statewide with a water quality objective, the final Trash Amendments would establish the following narrative water quality objectives for the Ocean Plan and the ISWEBE Plan.

The narrative water quality objective for the Ocean Plan would be: Trash shall not be present in ocean waters, along shorelines or adjacent areas in amounts that adversely affect beneficial uses or cause nuisance.

The narrative water quality objective for the ISWEBE Plan would be: Trash shall not be present in inland surface waters, enclosed bays, estuaries, and along shorelines or adjacent areas in amounts that adversely affect beneficial uses or cause nuisance.

2.3 Prohibition of Discharge

The Trash Amendments propose to implement the water quality objective for trash through a conditional prohibition of discharge of trash directly into waters of the state or where trash may ultimately be deposited into waters of the state. The prohibition of discharge applies to both permitted and non-permitted dischargers. Dischargers with NPDES permits would comply with the prohibition as outlined with the plan of implementation when such implementation plan is incorporated into the dischargers' NPDES permits. The final Trash Amendments clarify that dischargers with non-NPDES WDRs or waivers of WDRs that contain specific requirements for the control of trash shall be determined to be in compliance with the prohibition of discharge if the dischargers are in full compliance with such requirements. Under the original language, a discharger subject to an existing non-NPDES WDR or waiver of WDR could have been potentially in compliance with the requirements of the WDR, or Waiver of WDR, yet simultaneously out of compliance with prohibition of discharge included in the Draft Trash Amendments. Non-permitted dischargers must comply with the prohibition of discharge or be subject to direct enforcement action.

In addition, the prohibition of discharge specifically applies to the discharge to surface waters of the state of preproduction plastic by all manufacturers and transporters of preproduction plastics and manufacturers that use preproduction plastics in the manufacture of other products, or the deposition of preproduction plastic where it may be discharged into surface waters of the State. To ensure that the Trash Amendments do not interfere with existing permits requirements, the proposed Final Trash Amendments have been clarified to state that for dischargers subject to NPDES permits for discharges associated with industrial activity (e.g., IGP), those permittees would continue to comply with the "Preproduction Plastic Debris Program" under Water Code section 13367(a) and the requirements in the IGP (Order No. 2014-0057-DWQ) to comply with the prohibition concerning preproduction plastics.

2.4 Plan of Implementation

2.4.1 Permitted Storm Water Dischargers

One of the main transport mechanisms of trash to receiving waters is through the storm water system. The final Trash Amendments therefore focus on trash discharge reduction by requiring that NPDES storm water permits, specifically the MS4 Phase I and Phase II Permits, Caltrans Permit, the CGP, and the IGP, contain provisions that require permittees to comply with the prohibition of discharge. These provisions focus on trash control in the locations with high trash generation rates, in order to maximize the value of limited resources spent on addressing the discharge of trash into state waters.

MS4 Phase I and Phase II Permits

Municipalities are a source of trash generation, especially in areas with urban land uses and large population densities. MS4 Phase I and Phase II NPDES permits, which regulate discharges of storm water from MS4 systems throughout the state, have existing requirements for trash reduction in the form of institutional controls such as street sweeping and educational programs. Even with these existing provisions,

municipalities, however, continue to be significant dischargers of trash to waters of the state.

Under the final Trash Amendments, MS4 Phase I and Phase II NPDES permittees with regulatory authority over land uses can comply with the prohibition of discharge of trash under a dual alternative compliance approach or "Tracks". The Track requirements would be inserted into NPDES permits. Both Tracks have permittees focus their trash control efforts on priority land uses (i.e., those land uses that studies have shown generate significant sources of trash) (City of Los Angeles 2002, County of Los Angeles Department of Public Works 2004a; 2004b, City and County of San Francisco 2007, Moore et al. 2011, City of Cupertino 2012, City of San Jose 2012, EOA, Inc. 2012a). The final Trash Amendments define priority land uses as land uses that are actually developed (i.e., not simply zoned) as high density residential, industrial, commercial, mixed urban, and public transportation stations[4]. In addition, the final Trash Amendments provide that an MS4 may request that its permitting authority approve an equivalent alternative land use (i.e., an alternative to the land uses listed above) if that MS4 has land use(s) within its jurisdiction that generate trash at rates that are equivalent to or greater than one or more of the priority land uses listed This alternative option would help MS4s and their permitting authorities focus on controlling trash in each MS4's highest trash generating areas. The intent of this prioritization of land uses is to allow MS4s to allocate trash-control resources to the developed areas that generate the highest sources of trash.

Under Track 1, a permittee would install, operate and maintain full capture systems[5] for storm drains that capture runoff from priority land uses in their respective jurisdictions. Under Track 2, a permittee would develop and implement a plan that uses any combination of controls, such as full capture systems, other treatment controls (e.g., partial capture devices and green infrastructure and low impact development controls (LID)), institutional controls, and/or multi-benefit projects[6] to achieve the same performance results as Track 1 would achieve, referred to as, and defined as "full

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[4] The final Trash Amendments specifically define each of these five regulated land uses for purposes of implementation of the water quality objective and the prohibition of discharge; so, these definitions may differ substantially from an MS4's own local definition of those land uses in its ordinances, general plan, etc.

[5] Full capture systems for storm drains are defined in the final Trash Amendments as treatment controls (either a single device or a series of devices) that traps all particles that are 5 mm or greater, and has a design treatment capacity that is either: a) of not less than the peak flow rate, Q, resulting from a one-year, one-hour, storm in the subdrainage area, or b) appropriately sized to, and designed to carry at least the same flows as, the corresponding storm drain. Examples of full capture systems are described in greater detail in Section 5.2 of this document.

[6] Multi-benefit projects are treatment control projects that achieve any of the benefits set forth in Section 10562, subdivision (d) of Division 6 of the Water Code (the Watershed, Clean Beaches, and Water Quality Act). These projects could be designed to infiltrate, recharge or store storm water for beneficial reuse, to develop or enhance habitat and open space through storm water management, and/or reduce storm water runoff volume while removing the transport of trash. Multi-benefit projects can be implemented between contiguous permittees within a watershed for increased effectiveness and cost-sharing to reduce trash and improve storm water.

capture system equivalency".[7] Due to particular site conditions, types of trash, and the available resources for maintenance and operation within a municipality, the combination of full capture systems, multi-benefit projects, other treatment controls, and institutional controls used to comply with the prohibition of discharge will vary by permittee. However, it is the State Water Board's expectation that full capture systems should be preferentially selected by a permittee in executing the implementation plan to control the discharge of trash and achieve compliance with full capture system equivalency so long as such installation is not cost prohibitive.

MS4 storm water permittees that opt to comply under Track 2 would have to submit implementation plans to their permitting authority, which is the Water Board that issues the permit. The implementation plans must: (a) describe the combination of controls selected by each MS4, and the rationale for the selection, (b) describe how the combination of selected controls is designed to achieve full capture system equivalency, and (c) how the full capture system equivalency will be demonstrated. The implementation plans are subject to the approval by the permitting authority. The intention for the implementation plans is to assist in long term plan efforts and provide specifics on the trash controls effort to be incorporated into the implementing permit.

Non-Traditional Small MS4s or Other Land Uses or Areas within an MS4

The final Trash Amendments allow for the Water Boards to determine that at the local or regional level, areas outside of the scope of the priority land uses within an MS4 may generate substantial amounts of trash. Possible areas may include locations such parks, stadia, schools, campuses, and roads leading to landfills. Some Non-Traditional Small MS4s[8] maybe outside or lack jurisdictional authority over priority land uses. After reaching that determination in consultation with the applicable MS4, the appropriate Water Board may require the MS4 to adopt Track 1 or Track 2 control measures over such land uses or locations. The proposed final Trash Amendments have been modified to more accurately reflect this intent.

California Department of Transportation

Caltrans designs and operates California's state highway system. Caltrans' operation of this linear transportation system requires that it have its own MS4 permit distinct from the MS4 permits for Phase I and Phase II municipalities with regulatory authority over land uses. For example, the locations of high trash generating areas within Caltrans' jurisdiction are different than the priority land uses within municipalities' jurisdictions. Based on information from Caltrans' trash studies (Caltrans 2000, Caltrans 2004), coordination with Caltrans, Adopt-A-Highway program, and Keep California Beautiful program (Mid Atlantic Solid Waste Consultants 2009), the final Trash Amendments focus Caltrans' compliance efforts on the significant trash generating areas within the state's linear transportation system. Significant trash generating areas may include

[7] See section 2.4.1 for Full Capture System Equivalency discussion.

[8] Federal and State operated facilities that can include universities, prisons, hospitals, and military bases (e.g., State Army National Guard barracks, parks and office building complexes).

areas such as: (1) highway on- and off- ramps in high-density residential, commercial, mixed urban, and industrial land uses; (2) rest areas and park-and-rides; and (3) state highways in commercial and industrial land uses. Additionally, the final Trash Amendments give Caltrans the opportunity to identify other significant trash generating areas (i.e., mainline highway segments) by conducting pilot studies and/or surveys.

To comply with the prohibition of discharge of trash, Caltrans must comply with requirements in all significant trash generating areas, similar to Track 2 for MS4 Phase I and II permittees, by installing, operating, and maintaining any combination of full capture systems, multi-benefit projects, other treatment controls, and/or institutional controls. Caltrans must demonstrate that such combination of controls achieves full capture system equivalency. Furthermore, in areas where Caltrans' operations overlap with the jurisdiction of an MS4 Phase I or II permittee with regulatory authority over priority land uses, the final Trash Amendments direct the applicable parties to coordinate efforts to install, operate, and maintain treatment and institutional controls.

Similar to MS4 Phase I and Phase II permittees, the final Trash Amendments require Caltrans to submit an implementation plan that: (a) describes the specific locations of its significant trash generating areas, (b) the combination of controls selected and the rationale for the selection, and (c) how the combination of controls will achieve full capture system equivalency.

Industrial and Construction Permittees

Under the final Trash Amendments, dischargers with industrial or construction NPDES permits (e.g., IGP or CGP) would be required to eliminate trash from all storm water discharges and authorized non-storm water discharges. This outright prohibition includes discharges associated with the site or facility, as well as any additional space such as a parking lot. If the industrial or construction permittee, however, demonstrates to the Water Board that it is unable to comply with the outright prohibition, then the permittee, through the discretion of the Water Board, may require the discharger to comply with one of two options. Under the first option, the permittee would install, operate, and maintain full capture systems for storm drains that service the facility or site. As a second option, the permittee could develop and execute an implementation plan that committed to any combination of controls, such as full capture systems, other treatment controls (e.g. partial capture devices and green infrastructure and low impact development controls), institutional controls, and/or multi-benefit projects to achieve full capture system equivalency. As specified in Section 2.3, IGP permittees would continue to comply with the preproduction plastic provisions as specified by the "Preproduction Plastic Debris Program" under Water Code section 13367(a) and the requirements in the IGP (Order No. 2014-0057-DWQ).

Full Capture System Equivalency

The following entities must establish full capture system equivalency: (1) MS4 Phase I and Phase II permittees that elect Track 2, (2) Caltrans, and (3) IGP permittees that elect implementation provisions similar to Track 2. The final Trash Amendments define full capture system equivalency as:

> [T]he trash load that would be reduced if full capture systems were installed, operated, and maintained for all storm drains that capture runoff from the relevant areas of land (priority land uses, significant trash generating areas, facilities or sites regulated by NPDES permits for discharges of storm water associated with industrial activity, or specific land uses or areas that generate substantial amounts of trash, as applicable). The full capture system equivalency is a trash load reduction target that the permittee quantifies by using an approach, and technically acceptable and defensible assumptions and methods for applying the approach, subject to the approval of permitting authority.

During the public participation process for the Trash Amendments, many commenters requested clarification as to how Track 1 equivalency could be determined. While the permittee is responsible for determining the trash load reduction target, the proposed final Trash Amendments provide two examples of approaches that a permittee could use to determine full capture system equivalency: a trash capture rate approach and a reference approach. Other approaches may be more appropriate for any individual permittee's situation. The two methods identified in the amendment include:

1) Trash Capture Rate Approach. Directly measure or otherwise determine the amount of Trash captured by full capture systems for representative samples of all similar types of land uses, facilities, or areas within the relevant areas of land over time to identify specific trash capture rates. Apply each specific trash capture rate across all similar types of land uses, facilities, or areas to determine full capture system equivalency. Trash capture rates may be determined either through a pilot study or literature review. Full capture systems selected to evaluate trash capture rates may cover entire types of land uses, facilities, or areas, or a representative subset of types of land uses, facilities, or areas. With this approach, full capture system equivalency is the sum of the products of each type of land use, facility, or area multiplied by trash capture rates for that type of land use, facility, or area.

2) Reference Approach. Determine the amount of trash in a reference receiving water in a reference watershed where full capture systems have been installed for all storm drains that capture runoff from all relevant areas of land. The reference watershed must be comprised of similar types and extent of sources of trash and land uses (including priority land uses and all other land uses), facilities, or areas as the permittee's watershed. With this approach, full capture system equivalency would be demonstrated when the amount of trash in the receiving water is equivalent to the amount of trash in the reference receiving water.

As an example, an MS4 Phase I or Phase II permittee could determine trash capture rates for representative types of priority land uses where full capture devices had already been installed (e.g. for high density residential, commercial, industrial, mixed urban, and transportation station land uses). The trash capture rate should be

expressed as an amount of trash captured per time per area (e.g., pounds of trash per day per acre). The permittee could determine these trash capture rates by directly measuring the amount of trash collected by full capture systems over a defined period of time, such as 6 months, in each of the representative priority land use types. The representative land use types could be either the entire land use or a subset of a land use. The permittee could also utilize trash capture rates for similar land uses in other jurisdictions that have conducted trash capture rate studies, such as through a trash or debris TMDL.

Once the permittee has determined representative trash capture rates, those representative trash capture rates are applied to all similar priority land uses, where for instance the trash capture rate for high density residential is multiplied by the total area of all high density residential land uses in the permittee's jurisdiction. The full capture system equivalency would be determined by summing the trash capture loads for all priority land uses. The trash reduction target should be expressed as the amount of trash captured per time, e.g., pounds of trash per day or tons of trash per year.

The Trash Capture Rate Approach is focused on quantifying the amount of trash capture in particular land uses or location. Alternatively, the Reference Approach is focused on the condition of the receiving water by assessing and comparing the trash conditions of a reference receiving water with the receiving water from the permittee's jurisdiction. The permittee determines the amount of trash in a reference receiving water within a reference watershed where full capture systems have been installed for all storm drains that capture runoff from all relevant areas of land (e.g., priority land uses, significant trash generating areas, or facilities or sites). This means the reference watershed must be comprised of similar types and extent of land uses (including priority land uses and all other land uses), facilities, or areas as the permittee's watershed. The Reference Approach would be best executed using a reference receiving water that has a fully or nearly full implemented trash or debris TMDL.

Within the scope of the Trash Amendments, full capture system equivalency must be established after the permittee elects Track 2 or implementation provisions similar to Track 2 prior to implementation of trash controls. The details of how the selected controls are designed to achieve full capture system equivalency and how full capture system equivalency will be demonstrated are to be included in the permittee's implementation plan. The implementation plan is subject to the approval of the permitting authority. Therefore, the permitting authority has the discretion to require changes to the quantification of full capture system equivalency. As trash controls are implemented, the focus of monitoring program is to assess and monitor the progress towards achievement of the full capture system equivalency, and thus the prohibition of discharge.

2.4.2 Nonpoint Source Dischargers

Under the final Trash Amendments, nonpoint source dischargers subject to WDRs or waivers of WDRs, and not covered under an NPDES permit, required, at the discretion of the Water Board, to implement any appropriate trash controls in areas or facilities that generate substantial amounts of trash (e.g., high usage campgrounds, picnic areas, or

beach recreation areas). Trash control requirements for such nonpoint dischargers would be discharger specific, varying from treatment controls to institutional controls.

2.5 Time Schedule

Compliance with the water quality objective and plan for implementing the prohibition of discharge would be demonstrated by permittees in accordance with a time schedule set forth in the final Trash Amendments. The time schedule would be contingent on the effective date of the first implementing permit (whether such permit is modified, re-issued, or newly adopted). MS4 Phase I and II permittees with regulatory authority over land uses complying under Track 1 or Track 2 would have ten years from the effective date of the implementing permit to demonstrate full compliance with Track 1 or Track 2, as the case may be.

For MS4 Phase I and Phase II permittees that are newly designated as part of an existing MS4 it may not be feasible to expect compliance within ten years from the effective date of the first implementing permit (e.g., where designation occurs nine years after the first implementing permit). To address this, the final Trash Amendments have been clarified so that for MS4 Phase I and Phase II permittees that are designated after the effective date of the Trash Amendments, full compliance must be demonstrated within ten years of the effective date of the designation.

Several of the time schedule provisions in the proposed final Trash Amendments do not apply to MS4 permittees subject to the San Francisco Bay MRP or the East Contra Costa Municipal Storm Water Permit, because those permits already require control requirements substantially equivalent to Track 2. As a result, those MS4 permittees need not elect whether they will proceed with Track 1 or Track 2. Additionally, many of those MS4 permittees have already submitted a Short-Term Trash Load Reduction Plan and Long-Term Trash Load Reduction Plan that may be equivalent to the implementation plan required by the Trash Amendments. In order to reduce duplicative efforts, the Trash Amendments' requirement that MS4 permittees submit implementation plans does not apply to a San Francisco Bay MRP or the East Contra Costa Municipal Storm Water Permit, because those permits already require control requirements substantially equivalent to Track 2." "In order to reduce duplicative effort, the Trash Amendments' requirement that MS4 permittees submit implementation plans does not apply to a San Francisco Bay MRP or an East Contra Costa permittee if the San Francisco Bay Water Board or the Central Valley Water Board determines that the Short-Term Trash Load Reduction Plan and Long-Term Trash Load Reduction Plan for that permittee are equivalent to the implementation plan required by the Trash Amendments. Additionally, the pertinent permitting authority for the aforementioned permits may establish an earlier full compliance deadline than the ten-year compliance schedule specified for Track 2.

For Non-Traditional Small MS4s permittees or other land uses or areas within an MS4 that determined by the Water Boards to generate substantial amounts of trash and require trash controls, the Water Boards has the discretion to determine the time schedule for compliance with a maximum allotment of ten years from the determination. The determined time schedules for these areas should be relative to the size of the area and type of trash controls.

Caltrans, too, would have ten years from the effective date of its implementing permit to demonstrate compliance. For MS4 Phase I and II permittees with regulatory authority over land uses and Caltrans, in no case would their final compliance date be later than fifteen years from the effective date of the final Trash Amendments. Within the ten-year compliance periods discussed above, the Water Board can set interim compliance milestones within a specific permit. These interim milestones could be set, for example, as a percent reduction or percent installation per year.

Industrial and construction permittees would need to demonstrate full compliance within the deadlines specified in their respective implementing permits. Such deadlines may not exceed the terms of the first implementing permits (whether such permits are modified, re-issued or newly adopted).

Reaching full compliance with the prohibition of discharge would require planning efforts on the part of MS4 Phase I, MS4 Phase II, and Caltrans permittees. To assist in effective planning, within 18 months of the effective date of the final Trash Amendments the applicable Water Board would issue a Water Code section 13267 or 13383 order to its MS4 Phase I and MS4 Phase II permittees requesting notification within three months of each permittees' elected compliance track (i.e., either Track 1 or Track 2). If a permittee elects to comply under Track 2, then such a permittee needs to submit an implementation plan to the applicable Water Board within 18 months of receiving the 13267 or 13383 order.

To assist Caltrans with its planning efforts, the State Water Board would issue a Water Code section 13267 or 13383 order within 18 months of the effective date of the final Trash Amendments requesting an implementation plan.

~~2.6~~ Time Extension for Achieving Full Compliance

The proposed draft Trash Amendments provided a time extension to MS4 Phase I and II permittees with regulatory authority over land uses for each regulatory source control adopted by a MS4 Phase I or II permittee. Each regulatory source control adopted by a permittee could provide such permittee with a one-year time extension to achieve final compliance with either Track 1 or Track 2. The time extension option was proposed to receive public input on the potential advantages and disadvantages to this approach.

However, subsequent to the State Water Board's public workshop and the public hearing on the proposed Trash Amendments, Senate Bill 270 (2014 Stats. Ch. 850) was enacted. That new law enacts a state-wide plastic bag carry-out ban pertaining to grocery stores and pharmacies that have a specified amount of sales in dollars or retail floor space, which goes into effect July 1, 2015, and imposes the same ban on convenience stores and liquor stores a year later. The new law will implement a product ban, which was generally the type of regulatory source control contemplated by the State Water Board and discussed with the public with regard to consideration of the time extension option. Essentially, enactment of Senate Bill 270 removed the need for regulatory source controls, particularly product bans that would reduce trash, in the proposed Trash Amendments. As a result, the final Trash Amendments omit "regulatory source controls" from a method to comply with Track 2 and omit any corresponding allowance of time extensions.

2.7 Monitoring and Reporting Requirements

Under the final Trash Amendments, the Water Boards would require monitoring and reporting requirements (with monitoring objectives) in MS4 Phase I, MS4 Phase II, and Caltrans permits to ensure adequate trash control. The requirements in the final Trash Amendments represent the minimum requirements to be included in such permits.

The proposed monitoring requirements vary among NPDES storm water permits and tailored to the type of compliance option and permittee. For example, MS4 permittees complying under Track 1 (by installing, maintaining, and operating a network of full capture systems in the priority land uses) would not have minimum monitoring requirements. Instead, permittees would need to provide an annual report to the applicable Water Board demonstrating installation, operation, and maintenance of full capture systems. The annual report would include a Geographic Information System (GIS) based map depicting the locations of each installed full capture system and the drainage area that serves each full capture system. The reporting requirements could be included into annual reports requested by the Water Board.

MS4 permittees complying under Track 2, on the other hand, do have minimum monitoring requirements. They would develop and implement annual monitoring that demonstrates the effectiveness of the selected combination of treatment and institutional controls and compliance with full capture system equivalency. Such permittees would be required to submit a monitoring report to the applicable Water Board on an annual basis. The monitoring reports must include a GIS map depicting the locations and drainage area served by each treatment control, institutional control, and/or multi-benefit project. In addition to the GIS map, the annual monitoring report should consider a number of questions designed to demonstrate the effectiveness of the selected controls and compliance with full capture system equivalency. Using a questions-based approach provides flexibility to the permit writers to select the most relevant monitoring techniques and expectations for their respective permits.

The final Trash Amendments would require the Caltrans permit to contain monitoring requirements that Caltrans develop and implement annual monitoring plans that demonstrate the effectiveness of the selected combination of treatment and institutional controls and compliance with full capture system equivalency. The annual monitoring reports would be provided to the State Water Board and the reports must include a GIS map with the locations of each of the treatment controls and institutional controls. In addition to the GIS map, each annual monitoring report should consider a number of questions designed to demonstrate the effectiveness of the selected controls and compliance with full capture system equivalency.

The IGP and CGP are statewide permits that regulate discharges of storm water and authorized non-storm water discharges associated with very specific industrial activities. These permits apply to thousands of projects with diverse features and characteristics between facilities and sites. As such, prescribing appropriate and consistent trash monitoring and reporting requirements for all permittees poses significant challenges. While the final Trash Amendments do not contain trash monitoring requirements for IGP and CGP permits, permittees could, however, be required to report the measures used to either (1) achieve the outright prohibition or (2) achieve equivalent trash control

through alternative methods. The reporting would occur in reissuances or through regional water board actions aimed at adding monitoring and requirements to permittees. Additional trash monitoring and reporting can be required through existing authorities in the California Water Code, and in some cases directly through language in the IGP and CGP.

2.8 Full Capture System Certification

At present, the Los Angeles Water Board oversees a full capture system certification process (Bishop 2004, 2005, 2007, Dickerson 2004, Smith 2007, Unger 2011). In addition, the San Francisco Water Board evaluated effectiveness of full capture systems listed in Appendix I of the Bay Area-wide Trash Capture Demonstration Project (Demonstration Project), Final Project Report (San Francisco Estuary Partnership 2014). For statewide consistency, the State Water Board would take responsibility for the certification process for new full capture systems. The process for the certification would follow a similar process established by the Los Angeles Water Board (Yang 2004). Prior to installation, the full capture systems must be certified by the Executive Director, or designee, of the State Water Board. Uncertified systems will not satisfy the Trash Amendments. To request certification, the permittee would submit a certification request letter, including supporting documentation, to the State Water Board's Executive Director. The Executive Director or designee will issue a written response either approving or denying the proposed certification. However, to ensure efficient use of resources and prevent municipalities from having to remove properly functioning capture systems, full capture systems previously certified by the Los Angeles Water Board or identified by the Demonstration Project would be considered certified for use by permittees.

2.9 Reasonably Foreseeable Methods of Compliance

The State Water Board's SED for the proposed project is required to include an analysis of the reasonably foreseeable methods of compliance with the project (see 23 CCR 3777; Pub. Res Code § 21159). Although the State Water Board is not required to conduct a site-specific project level analysis of the methods of compliance (23 CCR 3777(c); Pub. Res Code § 21159(d)), a general description of the reasonably foreseeable methods of compliance is contained in Section 5 of the Final Staff Report.

2.10 Location and Boundaries of the Proposed Project

The State CEQA Guidelines require identification of "the precise location and boundaries of the proposed project [to be] shown on a detailed map" (14 CCR 15124(d)). The location of the State Water Board's proposed project to adopt the Trash Amendments is all surface waters of the State, with the exception of waters within the jurisdiction of the Los Angeles Water Board for which trash TMDLs are in effect prior to the effective date of the Trash Amendments. This necessarily includes the geographies of the nine regional water boards within California, as set forth in the Environmental Setting section and the maps located therein (Section 3) of the Final Staff Report.

2.11 Agencies Expected to use this Staff Report in their Decision Making and Permits

The State CEQA Guidelines require that the project description include, among other things, "a statement briefly describing the intended uses of the EIR" (14 CCR 15124(d)). The State Water Board will use this Final Staff Report in determining whether to adopt the final Trash Amendments. A Water Board may use the information contained within this Final Staff Report for future decision making and/or permitting. Furthermore, in order to achieve the water quality objective, all NPDES permits would contain provisions to implement the final Trash Amendments. Therefore, if the proposed project is approved, the following entities, where they are considered public agencies for purposes of CEQA, may be considered Responsible Agencies and may use the Final SED adopted by the State Water Board in their decision making actions to comply with the final Trash Amendments:

- NPDES permitted storm water dischargers
- Dischargers with WDRS or waivers of WDRs
- Water Boards

2.12 Other Approvals Required to Implement the Trash Amendments

Except as may be required by other environmental review and consultation requirements as described below, no other agency approvals are expected to be required to implement the final Trash Amendments. However, governing bodies of NPDES permittees may determine that separate approval actions are necessary to formally approve the approach they would take to comply with permits that implement the final Trash Amendments (e.g., whether to comply under Track 1 or Track 2). Beyond analyzing the reasonably foreseeable methods of compliance, the Final Staff Report is not required to, and therefore does not analyze the detail related to the project specific actions that might be implemented by any particular permittee as a result of the State Water Board's proposed project (see 23 CCR 3777(c); Pub. Res Code § 21159(d)).

After adoption by the State Water Board, the Trash Amendments must be submitted to the California Office of Administrative Law for review and approval. Because the Trash Amendments include the adoption of a new water quality standard, they must also be approved by U.S. EPA.

2.13 Environmental Review and Consultation Requirements

As described in other portions of the Final Staff Report, depending on the location, size, and particular compliance method, reasonably foreseeable methods of compliance could involve impacts to specific environmental resources that may trigger related environmental review and consultation requirements required by federal, state, or local laws, regulations, or policies. Since the Final Staff Report does not conduct a project-level analysis of the reasonably foreseeable methods of compliance, it is not possible to determine the specific environmental review and consultation requirements required by federal, state, or local laws, regulations, or policies (nor the particular magnitude of any specific environmental impact). Compliance with any specific environmental review and

consultations would need to be conducted by the MS4s or NPDES permittees complying with the provisions in their permits that incorporate the requirements of the final Trash Amendments.

2.14 Public Process

Initial Scoping Meetings

In July 2007, the first scoping meeting was held in San Francisco to provide opportunity for public comment on several proposed Ocean Plan projects, including trash in ocean waters. Oral and written comments were received, but development of a trash project was delayed due to shifting resources to other priority plans and policies.

A subsequent scoping meeting was conducted to provide an additional forum for public comment on the preparation of the Draft Staff Report for breadth of a Statewide Policy for Trash Control in Waters of the State. State Water Board staff held scoping meetings on October 7, 2010, at Central Valley Water Quality Control Board Headquarters in Rancho Cordova, California, and on October 14, 2010, at Inland Empire Utility Agency Headquarters in Chino, California. Comments were provided by stakeholders regarding the scope and content of the environmental information required by federal and state regulations. Additionally, information was submitted on the range of actions, alternatives, mitigation measures, and possible significant effects to be analyzed within this document. Since that time, the scope of the project has transition from a statewide policy to amendments to statewide water quality control plans.

On March 15, 2011, in Resolution 2011-0013, the State Water Board adopted the Ocean Plan Triennial Review Workplan for the period 2011-2013. In the Triennial Review Workplan, the State Water Board made the regulation of plastic debris and other trash a very high priority.

Public Advisory Group

As part of the scoping process and in response to the Scoping Meeting, State Water Board staff convened a Public Advisory Group to assist with the initial development of the Trash Amendments. The Public Advisory Group consisted of a diverse group of stakeholders representing municipalities, Caltrans, industry, and environmental groups. The Public Advisory Group included:

- Sean Bothwell, California Coastkeeper Alliance
- Geoff Brosseau, The California Stormwater Quality Association
- Miriam Gordon, Clean Water Action
- Gary Hildebrand, Los Angeles County
- Kirsten James, Heal the Bay
- Scott McGowen, Caltrans
- Charles Moore, Algalita Marine Research Institute
- Tom Reeves, City of Monterey
- Tim Shestek, American Chemistry Council
- Leslie Tamminen, Seventh Generation Advisors

The Public Advisory Group held six meetings closed to the public to discuss the proposed Trash Amendments (Table 2). At these meetings, the Public Advisory Group

provided comments and feedback to the development of the proposed Trash Amendments and the Draft Staff Report.

Table 2. Public Advisory Group.

Date	Location
March 6, 2013	CalEPA Bldg, Sacramento
August 13, 2012	CalEPA Bldg, Sacramento
May 22, 2012	CalEPA Bldg, Sacramento
October 12 & 13, 2011	Cabrillo Aquarium, San Pedro
August 30, 2011	CalEPA Bldg, Sacramento
July 26, 2011	CalEPA Bldg, Sacramento

Focused Stakeholder Outreach Meetings

In March, April, and May 2013, State Water Board staff held fourteen focused meetings with stakeholders from industry, municipal governments, environmental interest groups, and staff from the San Francisco Water Board, Los Angeles Water Board, Caltrans, and CalRecycle (Table 3). The objective of the meetings was to provide an overview of the development of the proposed Trash Amendments and to receive feedback on key issues before the public release of the Draft Staff Report for the proposed Trash Amendments from focused sets of stakeholders. Selected meeting participants were provided an issue paper that provided an overview of the fundamentals of the proposed Trash Amendments and five key unresolved options to discuss regarding the content of the proposed Trash Amendments. The five unresolved options included:

1) Options to address the existing trash TMDLs and the San Francisco Bay Region Municipal Regional Storm Water Permit.
2) Options regarding the level of specificity to include in the Track 2 monitoring plan requirements.
3) Options for full capture system definition.
4) Options for incentivizing regulatory source controls.
5) Considerations regarding preproduction plastics.

Table 3. Focused Stakeholder Meetings.

Stakeholder Group	Meeting Date and Location
Caltrans	3/13/13 Sacramento, CA
Industrial Permittees	4/3/13 Sacramento, CA
Environmental Groups	4/3/13 Sacramento, CA
Los Angeles Water Board	4/5/13 Los Angeles, CA
MS4 Permittees	4/8/13 Sacramento, CA
MS4 Permittees	4/10/13 Santa Rosa, CA
MS4 Permittees	4/15/13 San Jose, CA
MS4 Permittees	4/16/13 San Luis Obispo, CA
MS4 Permittees	4/19/13 Santa Clarita, CA
MS4 Permittees	4/22/13 Costa Mesa, CA
CalRecycle	5/15/13 Sacramento, CA
Industrial Permittees	5/17/13 Riverside, CA
San Francisco Bay & Los Angeles Water Board MS4 Permittees	5/24/13 Sacramento, CA
San Francisco Bay Water Board	5/24/13 Sacramento, CA

Public Workshop and Public Hearing

On June 10, 2014, the State Water Board provided the Draft Staff Report, including the Draft SED for the proposed Trash Amendments to the public and public with an accompanying notice of the dates the State Water Board would hold a public workshop and a public hearing.

On July 16, 2014, State Water Board held a public workshop at the CalEPA Headquarters Building in Sacramento. The purpose of the public workshop was to provide information and answer questions from the public on the proposed Trash Amendments; no action was taken by the State Water Board. At the public workshop, State Water Board staff presented an overview of the proposed Trash Amendments. The staff presentation was followed by three presentations from PAG members: 1) Algalita Marine Research Institute, California Coastkeeper Alliance, Heal the Bay, and Seventh Generation Advisors, 2) American Chemistry Council, and 3) CASQA. In addition to presentations, fourteen groups provided public comment.

The State Water Board held a public hearing on the proposed Trash Amendments on August 5, 2014 at the CalEPA Headquarters Building in Sacramento, the date of which coincided with the close of the written comment period. The purpose of the public hearing was to receive oral comments and testimony on the proposed Trash Amendments, Draft Staff Report, including the Draft SED. Participants were given an opportunity to supplement their written comments with oral statements. No action was taken by the State Water Board. At the public hearing, there was a staff presentation and twenty-three groups provided public comment. At the close of the comment period at noon on August 5th, a total of seventy-six written comment letters were received. The State Water Board shall develop complete written response to the written comments timely received within the August 5th deadline.

2.15 Project Contact

Primary Contact:

Dr. Maria de la Paz Carpio-Obeso, Ocean Standards Unit Chief

Office Phone: (916) 341-5858

Email: MarielaPaz.Carpio-Obeso@waterboards.ca.gov

Secondary Contact:

Johanna Weston, Ocean Standards Unit Environmental Scientist

Office Phone: (916) 327-8117

Email: Johanna.Weston@waterboards.ca.gov

3 ENVIRONMENTAL SETTING[9]

A variety of environmental conditions exist in California. For water quality management, section 13200 of Porter-Cologne divides the state into nine different hydrologic regions. Brief descriptions of the regions and the water bodies addressed by this Final Staff Report are presented below. The information provided in this section is extracted from the ten basin plans created by each of the nine regional water boards. In addition to a description of each region, the land coverage of each region is addressed. This analysis provides an estimate of the area across California where NPDES permittees, specifically land uses for MS4 Phase I and MS4 Phase II permittees, with the exception of waters with existing trash and debris TMDLs within the jurisdiction of the Los Angeles Water Board, would have to comply with the prohibition of discharge for trash and the implementation provisions.

3.1 Trash in California

Throughout California, trash is found in streams, rivers, lakes, estuaries, beaches, and the ocean. The continued presence of trash in state waters is shown through data from the California Coastal Commission and Ocean Conservancy organized Coastal Cleanup Day. Since 1986, volunteers have collected trash from beaches, inland waterways, coastal waters, and underwater. Volunteers have removed approximately 690,322 pieces of trash from up to 2,023 miles of Coastal Cleanup sites. The top ten items collected from 1989-2012, which represented nearly 90 percent of the items removed, were: (1) cigarette butts; (2) bags (paper and plastic); (3) food wrappers and containers; (4) caps and lids; (5) cups, plates, forks, knives, and spoons; (6) straws and stirrers; (7) glass beverage bottles; (8) plastic beverage bottles; (9) beverage cans; and (10) building materials. The snapshot of the trash collected from Coastal Cleanup Day provides a clear baseline of trash pollution throughout the surface waters in California.

To address trash pollution, municipalities across California spend about half a billion dollars each year to combat, clean up, and prevent trash from entering state waters (Stickel et. al 2013). There are six main trash-control strategies employed by a municipality: waterway and beach cleanup, street sweeping, installation of full capture devices, storm drain cleaning and maintenance, manual cleanup of trash, and public education.

While municipalities employ at least a minimal amount of trash management, there are several regions with comparatively more extensive management strategies. In the Los Angeles and San Francisco Bay regions, municipalities have extensive trash control measures in response to 303(d) listed water bodies for trash and debris. The Los Angeles Water Board has adopted fifteen TMDLs with a numeric target of zero trash.

[9] CEQA directs that the environmental setting normally be used as the baseline for determining significant impacts of a proposed project (Cal. Code Regs., tit.14, §15125, subd. (a)). This section presents a broad overview of the environmental setting for the state of California related to the proposed final Trash Amendments. The section presenting the impact analysis in this Final Staff Report, including SED will identify, where relevant, any specific setting information relevant to the detailed assessment of environmental impacts of the proposed action.

While the San Francisco Bay MRP applies trash provisions to 76 municipalities to address the 27 303(d) listed water bodies in the region. Caltrans has multiple trash management strategies such as installation of gross separation systems, street sweeping, manual collection of trash with the Adopt-A-Highway Program, and public education with Don't Trash California. The CGP (2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ) prohibits the discharge of any debris from construction sites and encourages the uses of more environmentally safe, biodegradable materials on construction sites. Facilities enrolled under the IGP must comply with the "Preproduction Plastic Debris Program" (Wat. Code § 13367(a)) by following the BMPs in the manufacturing, handling, and transporting of preproduction plastics.

The presence of trash and efforts to address trash in California are described in further detail in Appendix A.

3.2 Developed Land by Land Cover and Regional Water Board

The final Trash Amendments focus on areas with high trash generation rates, i.e., priority land uses for MS4 Phase I and Phase II permittees and significant trash generating areas for Caltrans. There is no existing data on the location of priority land uses are. A GIS analysis was used to determine the possible geographic scope of the final Trash Amendments. Land cover data within census designated places and regional water board boundaries were used to provide an estimate the area covered under the final Trash Amendments. These estimates do not represent exact locations for trash controls, but provide an approximate area. The U.S. Census Bureau uses census designated places to delineate settled concentrations of population that are identifiable by name but are not legal designations incorporated under the laws of the state. Census designated places are delineated cooperatively by state and local officials and the Census Bureau before each Decennial Census. The 2012 Census Designated Places boundary (the legal boundary designation as of January 1, 2012) shapefile can be accessed at: http://www.census.gov/geo/maps-data/data/tiger-line.html. The 2012 California Census Designated Place category identified 1517 cities, with a total area of 9,621,423 acres (Figure 1).

Since counties do not have a uniform classification of land cover codes or divisions, urban land cover data was extracted from USGS Multi-Resolution Land Characteristics Consortium Land Cover Data 2006. The data can be accessed at: http://www.mrlc.gov/nlcd2006.php. To estimate the area covered under the final Trash Amendments, Land Use/Land Cover categories for developed low intensity, medium intensity, and high intensity were identified:

- Land Use (LU) 22 or "Developed, Low Intensity". This is defined as developed low intensity includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20-49 percent of total cover. These areas most commonly include single-family housing units.

- Land Use (LU) 23 or “Developed, Medium Intensity”. This is defined as developed medium intensity includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50-79 percent of the total cover. These areas most commonly include single-family housing units.

- Land Use (LU) 24 is “Developed, High Intensity”. This is defined as developed high intensity includes highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80-100 percent total cover.

Although there was a lack of statewide consistency in land use planning and GIS data from individual municipalities, “Developed, High Intensity” was assumed to be analogous proxy to the priority land uses of the final Trash Amendments: high density residential, industrial, commercial, mixed urban, and public transportation stations. A representative estimate for Caltrans’ significant trash generating areas was not included in the estimate. Additionally, the priority land uses does not include low density residential, as represented by “Developed, Low Intensity”.

The number of acres for the three developed land cover classes was calculated for each regional water board (Figure 2,

Table 4). Distribution of land cover classes varies by regional water board. The Central Valley Water Board has the most total acreage, but a very low percentage of Central Valley Region total area is highly developed

(2.38 percent). Higher coverage of developed land is generally seen in the southern coastal regions. The Los Angeles Water Board has the most acres of high intensity developed area (4.09 percent), while the Santa Ana Water Board has the highest number of total developed acres (28.74 percent) (

Table 5). The number of acres for the three classes was also calculated within census designated place boundaries (

Table 5). As with the total regional water board area, distribution of land cover classes with census designated places varies by a regional water board. When only considering areas with concentrated populations (i.e., within census designated places), Los Angeles Water Board has the most developed acres as well as the highest percentage of medium intensity, high intensity, and total developed land, followed closely by Santa Ana Water Board (Table 6). As previously noted, many of the priority land uses with the Los Angeles Water Board have waste load allocations for trash or debris TMDLs, and thus not applicable to the final Trash Amendments.

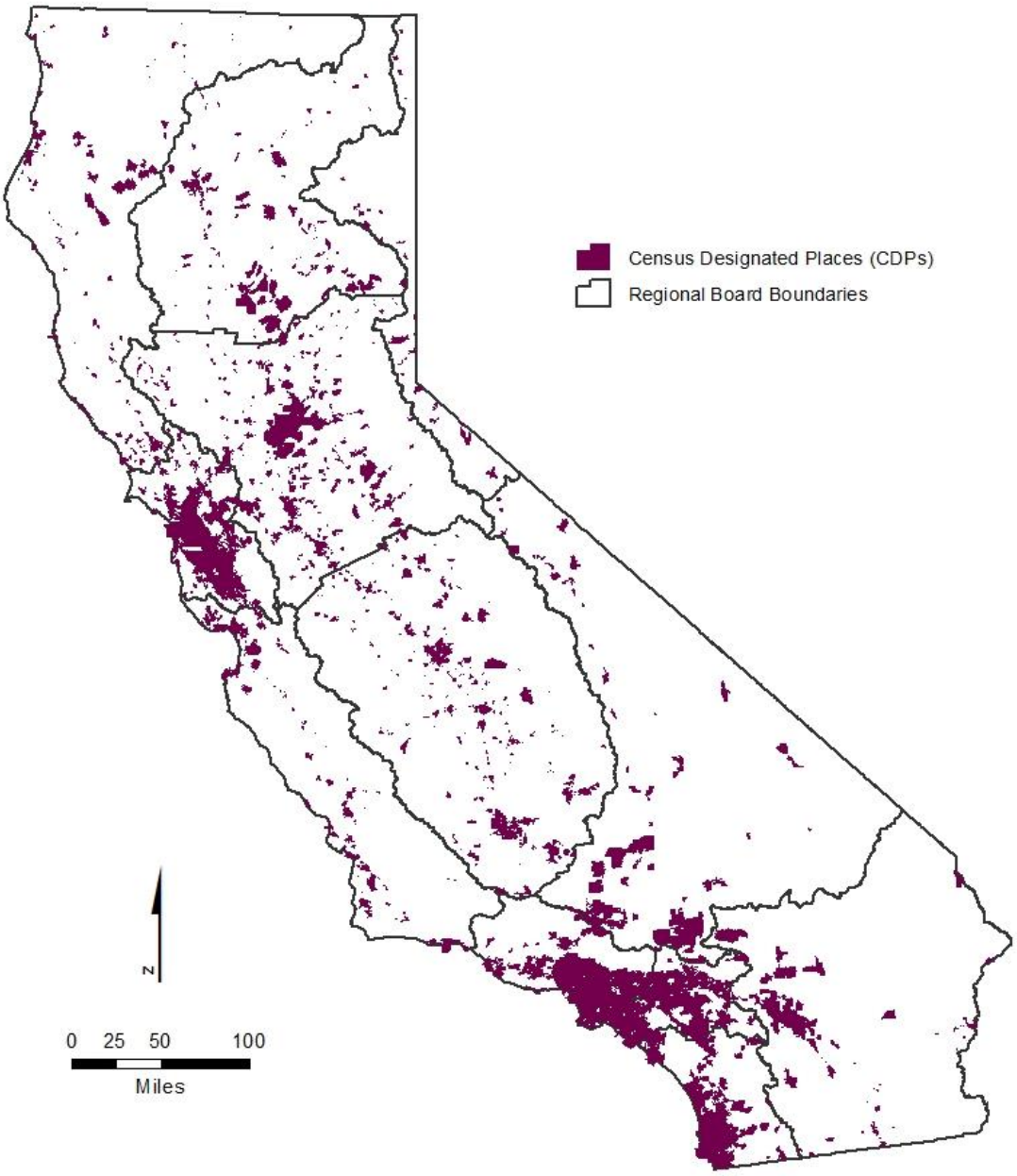


Figure 1. 2012 California Census Designated Places.

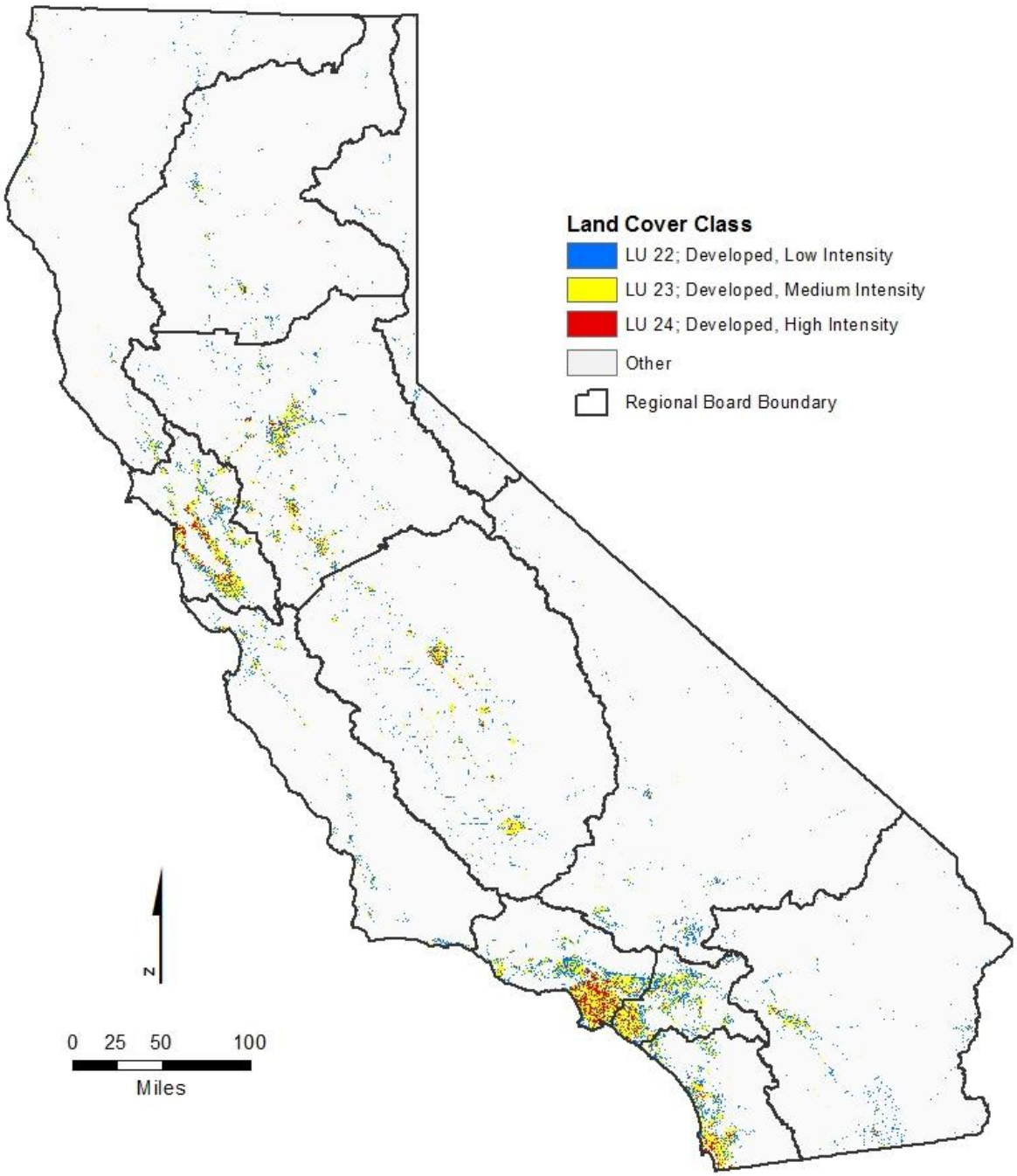


Figure 2. Developed Land Coverage by Regional Water Boards.

Table 4. Acres of Developed Land by Land Cover and Regional Water Board.

Regional Water Board	Developed, Low Intensity (acres)	Developed, Medium Intensity (acres)	Developed High Intensity (acres)	Other (acres)	Total (acres)
North Coast	53,897	28,435	3,362	12,355,869	12,441,564
San Francisco Bay	189,894	283,806	79,220	2,339,394	2,892,314
Central Coast	96,760	65,716	7,371	7,183,662	7,353,509
Los Angeles	234,649	369,182	116,470	2,127,311	2,847,612
Central Valley	422,468	394,517	88,186	37,075,180	37,980,350
Lahontan	124,387	38,374	5,517	20,818,762	20,987,040
Colorado River	119,633	56,414	6,829	12,528,939	12,711,815
Santa Ana	216,149	256,567	42,048	1,276,620	1,791,384
San Diego	153,175	196,314	41,780	2,092,315	2,483,584
Total (acres)	1,611,012	1,689,325	390,782	97,798,052	101,489,172

Table 5. Percent of Regional Water Board Designated as Developed Land by Land Cover Type.

Regional Water Board	Developed, Low Intensity (%)	Developed, Medium Intensity (%)	Developed High Intensity (%)	Total Developed (%)
North Coast	0.43%	0.23%	0.03%	0.69%
San Francisco Bay	6.57%	9.81%	2.74%	19.12%
Central Coast	1.32%	0.89%	0.10%	2.31%
Los Angeles	8.24%	12.96%	4.09%	25.29%
Central Valley	1.11%	1.04%	0.23%	2.38%
Lahontan	0.59%	0.18%	0.03%	0.80%
Colorado River	0.94%	0.44%	0.05%	1.44%
Santa Ana	12.07%	14.32%	2.35%	28.74%
San Diego	6.17%	7.90%	1.68%	15.75%

Table 6. Percent of Census Designated Places as Developed Land by Land Cover Type and Regional Water Board.

Regional Board	Developed, Low Intensity (%)	Developed, Medium Intensity (%)	Developed High Intensity (%)	Total Developed (%)
1	5.60%	4.67%	0.51%	10.78%
2	14.35%	23.98%	6.48%	44.82%
3	12.90%	11.77%	1.39%	26.06%
4	18.88%	30.55%	9.39%	58.82%
5R	4.13%	2.75%	0.65%	7.53%
5S	11.68%	14.66%	3.51%	29.85%
5F	7.78%	13.78%	2.58%	24.14%
5 All	8.50%	11.33%	2.48%	22.31%
6SLT	8.26%	1.92%	0.55%	10.73%
6V	7.06%	2.89%	0.35%	10.30%
6 All	7.22%	2.76%	0.38%	10.35%
7	8.37%	6.94%	0.85%	16.16%
8	20.58%	25.12%	3.87%	49.57%
9	15.84%	23.43%	5.21%	44.48%

3.3 Permitted Storm Water Dischargers in California

The final Trash Amendments includes implementation provisions for permitted storm water dischargers, specifically MS4 Phase I and II, Caltrans, IGP, and CGP permittees. In 2012-2013 Annual Performance Report[10], the Water Boards reported16,996 Storm Water facilities regulated under the Storm Water Construction, Storm Water Industrial and Storm Water Municipal Permits. The number of facilities and municipalities, separated by regional water board, are presented in Table 7.

[10] The California Water Boards' Annual Performance Report - Fiscal Year 2012-13 released on September 2013. http://www.waterboards.ca.gov/about_us/performance_report_1213/regulate/21200_npdes_sw_facilities.shtml

Table 7. Facilities Regulated Under the California Water Board's Storm Water Program.

Regional Water Board	Construction General Permittees	Industrial General Permittees	Municipal Storm Water Permittees (Phase I and II)	Total
North Coast	179	337	14	538
San Francisco Bay	1,069	1,316	109	2,494
Central Coast	457	401	45	903
Los Angeles	1,193	2,683	100	3,976
Central Valley	1,614	1,745	95	3,454
Lahontan	379	230	10	619
Colorado River	253	172	19	444
Santa Ana	1,136	1,583	62	2,781
San Diego	924	784	79	1,787
Total	7,204	9,251	532	16,996

3.4 North Coast Region

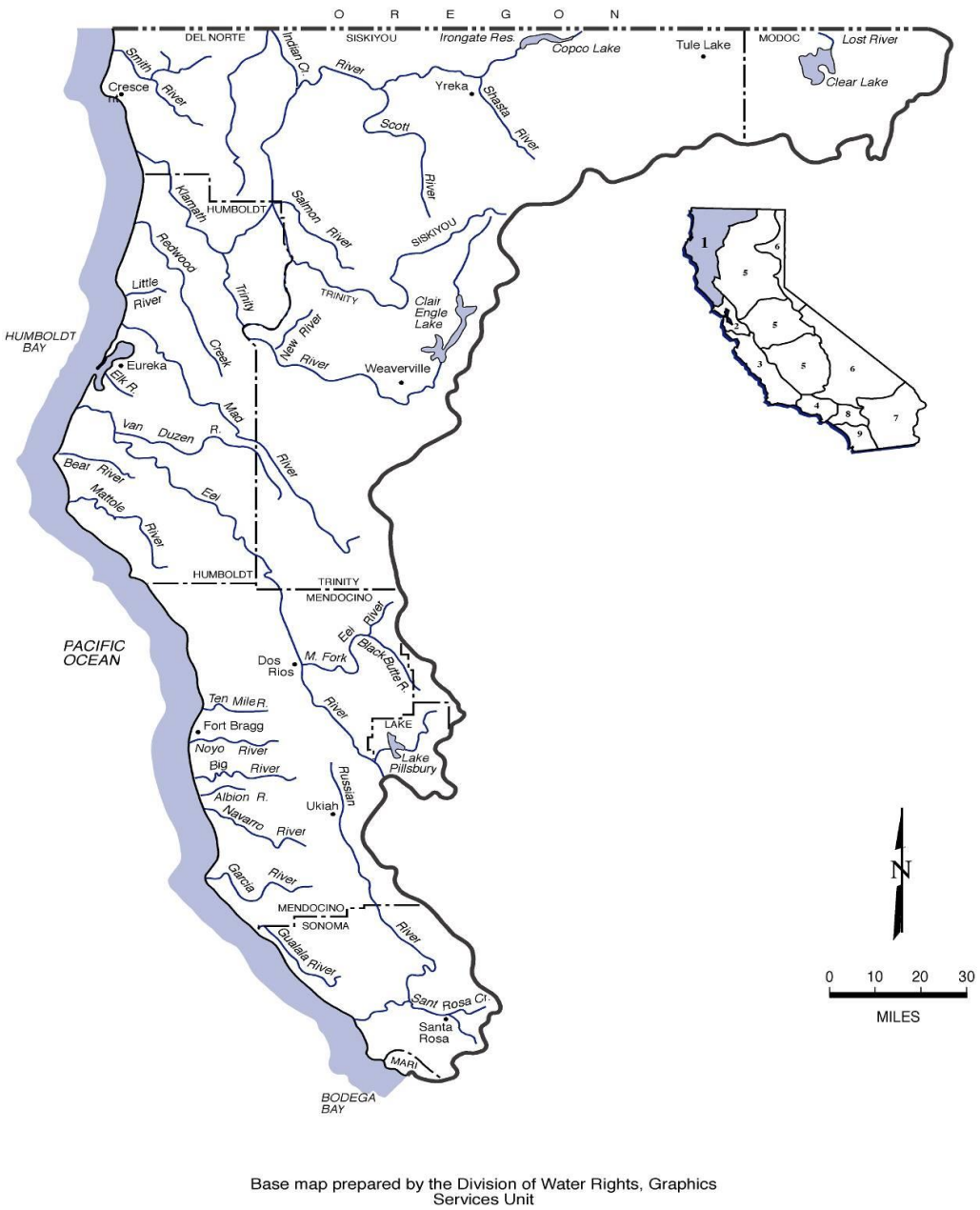
The North Coast Region comprises all watershed basins, including Lower Klamath Lake and Lost River Basins, draining into the Pacific Ocean from the California-Oregon State line southern boundary and includes the watershed of the Estero de San Antonio and Stemple Creek in Marin and Sonoma Counties (Figure 3, Figure 4). Two natural drainage basins, the Klamath River Basin and the North Coastal Basin, divide the region. The region covers all of Del Norte, Humboldt, Trinity, and Mendocino Counties, major portions of Siskiyou and Sonoma Counties, and small portions of Glenn, Lake, and Marin Counties. It encompasses a total area of approximately 19,390 square miles, including 340 miles of coastline and remote wilderness areas, as well as urbanized and agricultural areas.

Beginning at the Smith River in northern Del Norte County and heading south to the Estero de San Antonio in northern Marin County, the region encompasses a large number of major river estuaries. Other North Coast streams and rivers with significant estuaries include the Klamath River, Redwood Creek, Little River, Mad River, Eel River, Noyo River, Navarro River, Elk Creek, Gualala River, Russian River, and Salmon Creek (this creek mouth also forms a lagoon). Northern Humboldt County coastal lagoons include Big Lagoon and Stone Lagoon. The two largest enclosed bays in the North Coast Region are Humboldt Bay and Arcata Bay (both in Humboldt County). Another enclosed bay, Bodega Bay, is located in Sonoma County near the southern border of the region. Distinct temperature zones characterize the North Coast Region. Precipitation is greater than for any other part of California, and damaging floods are a fairly frequent hazard. Ample precipitation in combination with the mild climate found over most of the North Coast Region has provided a wealth of fish, wildlife, and scenic resources. The numerous streams and rivers of the region contain anadromous fish and the reservoirs, although few in number, support both cold and warm water fish.

Tidelands and marshes are extremely important to many species of waterfowl and shore birds, both for feeding and nesting. Cultivated land and pasturelands also provide supplemental food for many birds, including small pheasant populations. Tideland areas along the north coast provide important habitat for marine invertebrates and nursery areas for forage fish, game fish, and crustaceans. Offshore coastal rocks are used by many species of seabirds as nesting areas.

Major land uses in the region are tourism and recreation; logging and timber milling; aggregate mining; commercial and sport fisheries; sheep, beef and dairy production; and vineyards and wineries. Approximately two percent of California's total population resides in the North Coast region. The largest urban centers are Eureka in Humboldt County and Santa Rosa in Sonoma County.

Eight Areas of Special Biological Significance (ASBS) are located in the North Coast Region: Jughandle Cove (#1), Del Mar Landing (#2), Gerstle Cove (#3), Bodega (#4), Saunders Reef (#5), Trinidad Head (#6), King Range (#7), and Redwoods National Park (#8).



Base map prepared by the Division of Water Rights, Graphics Services Unit

Figure 3. North Coast Region Hydrologic Basin.

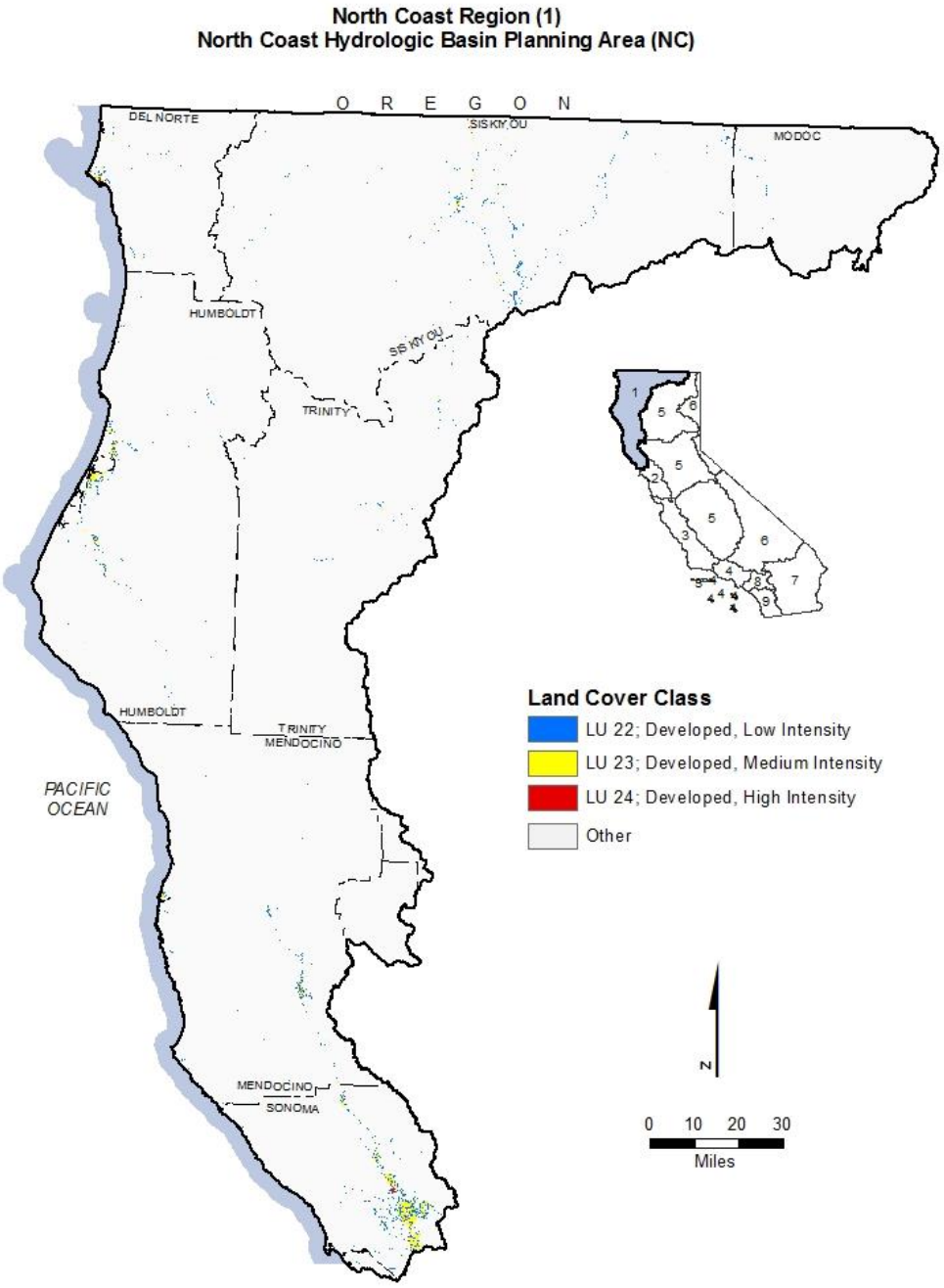


Figure 4. North Coast Region Developed Land Coverage.

3.5 San Francisco Region

The San Francisco Bay Region comprises San Francisco Bay, Suisun Bay beginning at the Sacramento River, and San Joaquin River westerly, from a line which passes between Collinsville and Montezuma Island (Figure 5, Figure 6). The region's boundary follows the borders common to Sacramento and Solano counties, and Sacramento and Contra Costa counties west of the Markely Canyon watershed in Contra Costa County. All basins west of the boundary and all basins draining into the Pacific Ocean between

the southern boundary of the North Coast Region and the southern boundary of the watershed of Pescadero Creek in San Mateo and Santa Cruz counties are included in the region.

The region comprises most of the San Francisco Estuary to the mouth of the Sacramento-San Joaquin Delta. The San Francisco Estuary conveys the waters of the Sacramento and San Joaquin Rivers to the Pacific Ocean. Located on the central coast of California, the San Francisco Bay system functions as the only drainage outlet for waters of the Central Valley. The region includes the fourth largest metropolitan area in the United States, including all or major portions of Alameda, Contra Costa, Marin, Napa, San Francisco, San Mateo, Santa Clara, Solano, and Sonoma counties.

The San Francisco Water Board has jurisdiction over the part of the San Francisco Estuary, which includes all of the San Francisco Bay segments extending east to the Delta (Winter Island near Pittsburg). Within each section of the San Francisco Bay system lie deepwater areas that are adjacent to large expanses of very shallow water. Salinity levels range from hypersaline to fresh water and water temperature varies widely. The San Francisco Bay system's deepwater channels, tidelands, marshlands, fresh water streams, and rivers provide a wide variety of habitats within the Region. Coastal embayments including Tomales Bay and Bolinas Lagoon are also located in this Region.

The Sacramento and San Joaquin Rivers enter the San Francisco Bay system through the Delta at the eastern end of Suisun Bay and contribute almost all of the fresh water inflow into the Bay. Many smaller rivers and streams also convey fresh water to the Bay system. The rate and timing of these fresh water flows influence the physical, chemical and biological conditions in the Bay. Flows in the region are highly seasonal, with more than 90 percent of the annual runoff occurring during the winter rainy season between November and April.

The San Francisco Estuary is made up of many different types of aquatic habitats that support a great diversity of organisms. Suisun Marsh in Suisun Bay is the largest brackish water marsh in the United States. San Pablo Bay is a shallow embayment strongly influenced by runoff from the Sacramento and San Joaquin Rivers. The Central Bay is the portion of the Bay most influenced by oceanic conditions. The South Bay, with less freshwater inflow than the other portions of the Bay, acts more like a tidal lagoon. Together these areas sustain rich communities of aquatic life and serve as important wintering sites for migrating waterfowl and spawning areas for anadromous fish.

Six ASBS are located in the San Francisco Bay Region: James V. Fitzgerald (#9), Farallon Islands (#10), Duxbury Reef (#11), Point Reyes Headlands (#12), Double Point (#13), and Bird Rock (#14).

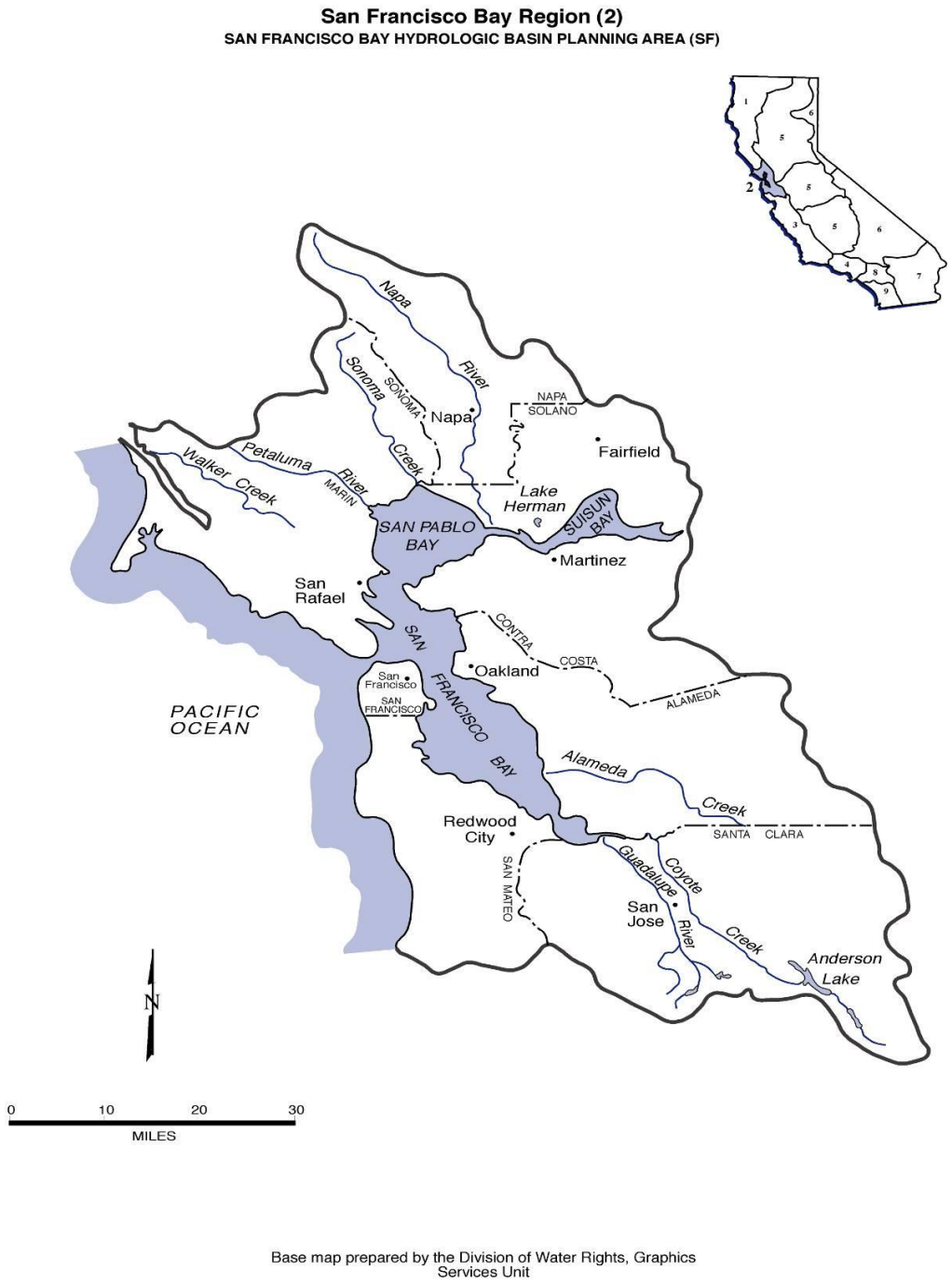


Figure 5. San Francisco Bay Region Hydrologic Basin.

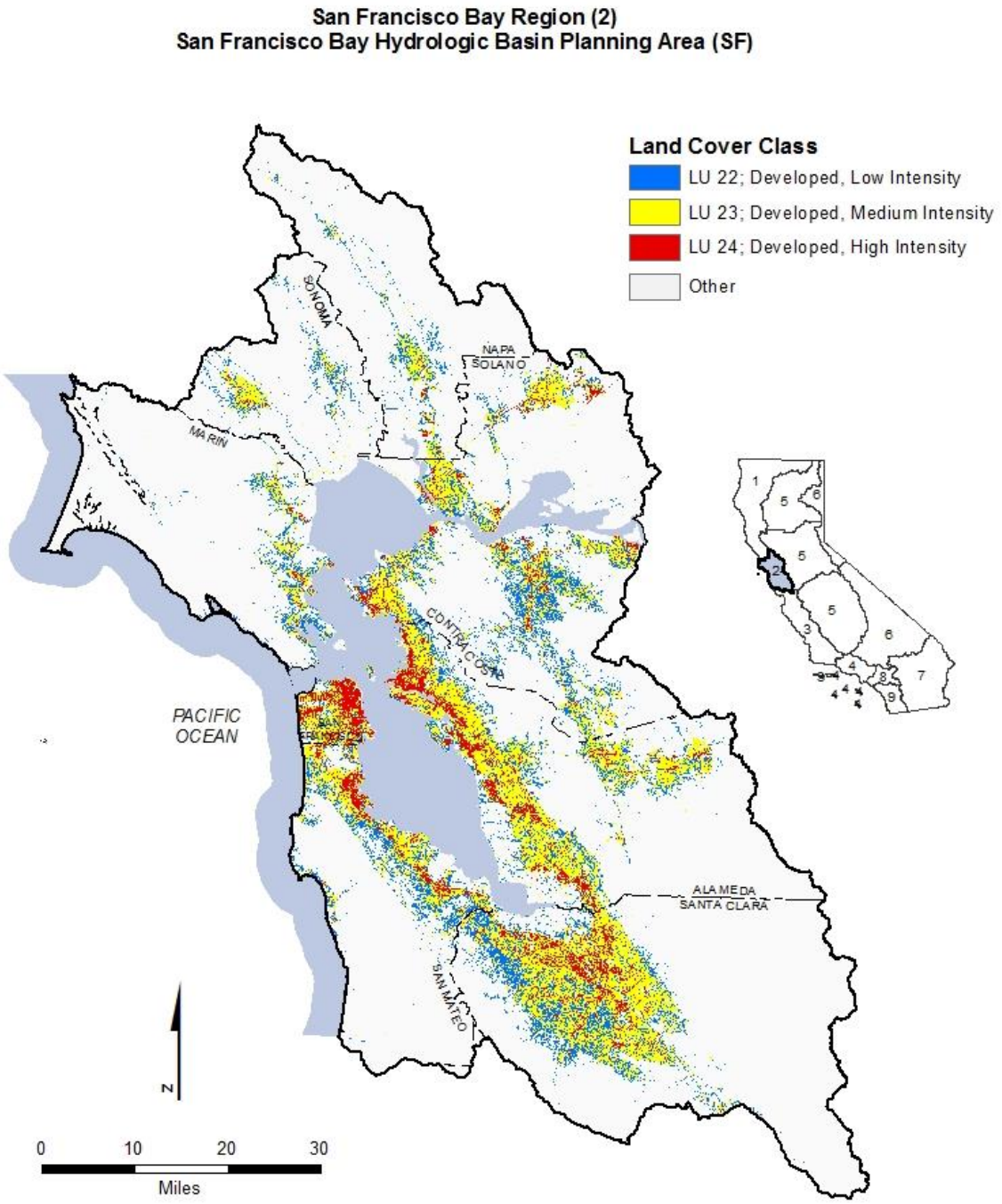


Figure 6. San Francisco Bay Region Developed Land Coverage.

3.6 Central Coast Region

The Central Coast Region comprises all basins (including Carrizo Plain in San Luis Obispo and Kern Counties) draining into the Pacific Ocean from the southern boundary of the Pescadero Creek watershed in San Mateo and Santa Cruz Counties; to the southeastern boundary of the Rincon Creek watershed, located in western Ventura County (Figure 7, Figure 8). The region extends over a 300-mile long by 40-mile wide section of the state's central coast. Its geographic area encompasses all of Santa Cruz, San Benito, Monterey, San Luis Obispo, and Santa Barbara Counties as well as the southern one-third of Santa Clara County, and small portions of San Mateo, Kern, and Ventura Counties. Included in the region are urban areas such as the Monterey Peninsula and the Santa Barbara coastal plain; prime agricultural lands such as the Salinas, Santa Maria, and Lompoc Valleys; National Forest lands; extremely wet areas such as the Santa Cruz Mountains; and arid areas such as the Carrizo Plain.

Water bodies in the Central Coast Region are varied. Enclosed bays and harbors in the region include Morro Bay, Elkhorn Slough, Tembladero Slough, Santa Cruz Harbor, Moss Landing Harbor, San Luis Harbor, and Santa Barbara Harbor. Several small estuaries also characterize the region, including the Santa Maria River Estuary, San Lorenzo River Estuary, Big Sur River Estuary, and many others. Major rivers, streams, and lakes include San Lorenzo River, Santa Cruz River, San Benito River, Pajaro River, Salinas River, Santa Maria River, Cuyama River, Estrella River and Santa Ynez River, San Antonio Reservoir, Nacimiento Reservoir, Twitchel Reservoir, and Cuchuma Reservoir.

Located in the Central Coast Region are 7 ASBS: Año Nuevo (#15); Pacific Grove (#19); Carmel Bay (#34); Point Lobos (#16); Julia Pfeiffer Burns (#18); San Miguel, Santa Rosa, and Santa Cruz Islands (#17); and Salmon Creek Coast (#20).

The land use activities in the basin have been primarily agrarian. While agriculture and related food processing activities are major industries in the region, land uses also include oil production, tourism, and manufacturing. Total population of the region is estimated at 1.22 million people.

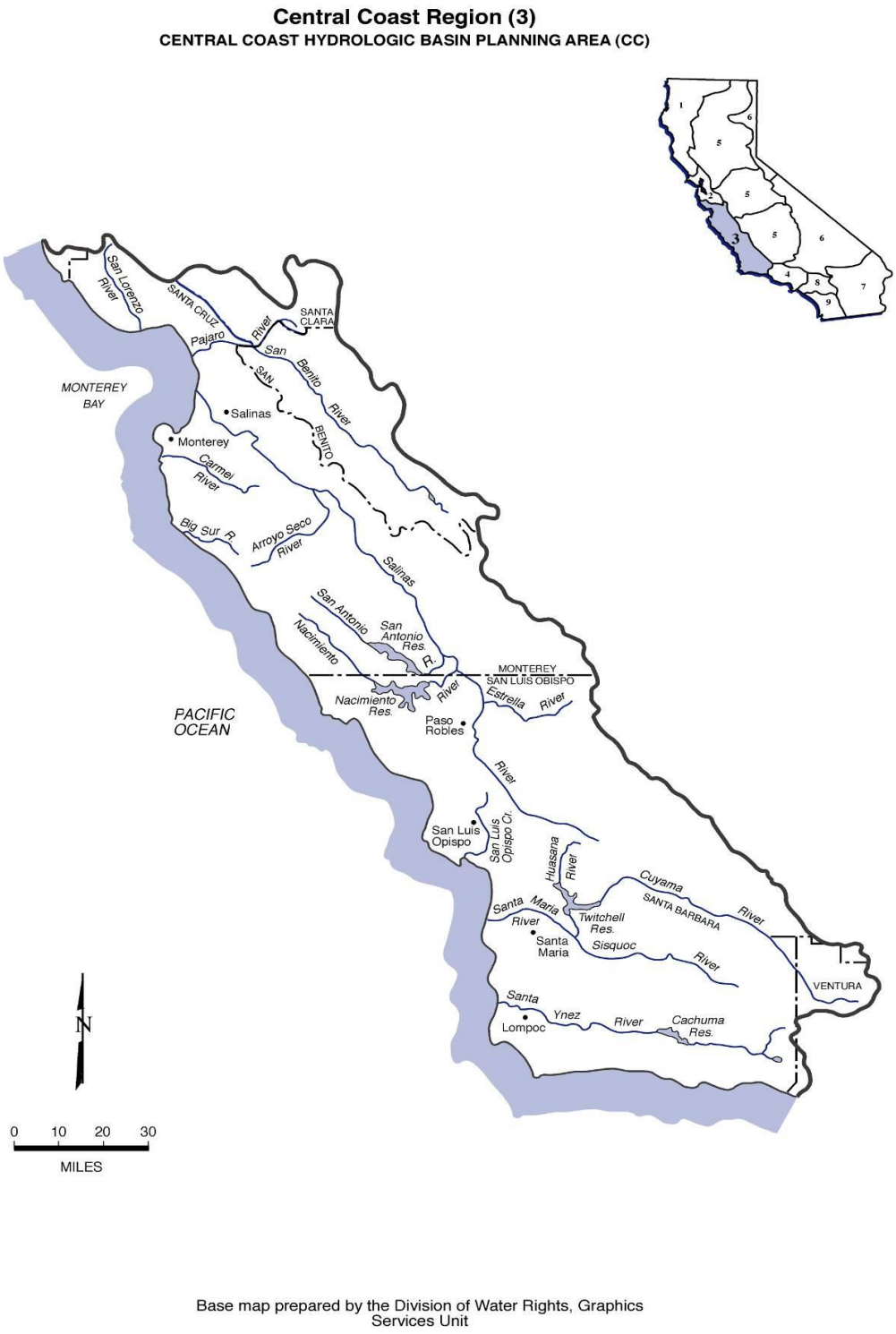


Figure 7. Central Coast Region Hydrologic Basin.

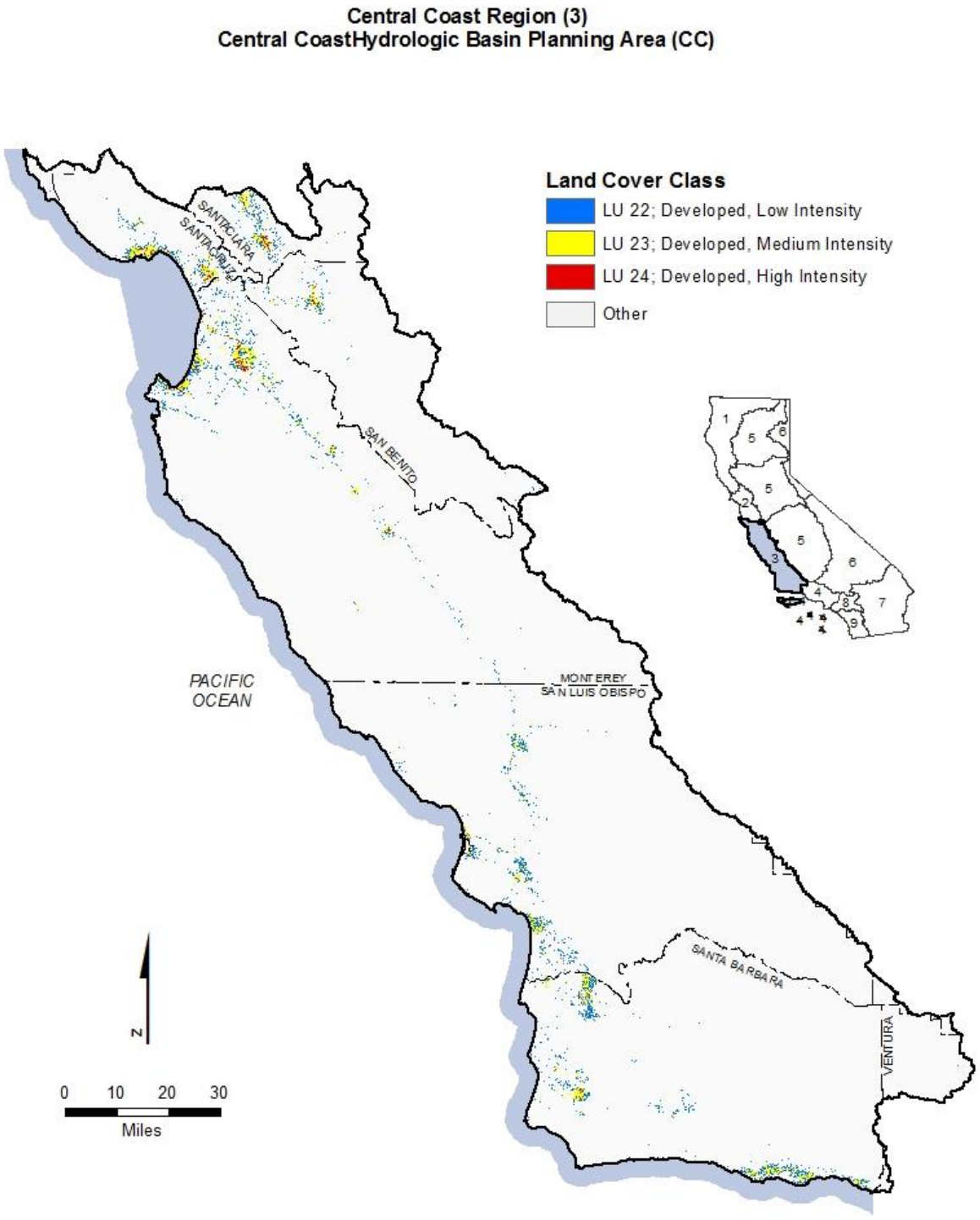


Figure 8. Central Coast Region Developed Land Coverage.

3.7 Los Angeles Region

The Los Angeles Region comprises all basins draining into the Pacific Ocean between the southeastern boundary of the watershed of Rincon Creek, located in western Ventura County, and a line which coincides with the southeastern boundary of Los Angeles County, from the Pacific Ocean to San Antonio Peak, and follows the divide, between the San Gabriel River and Lytle Creek drainages to the divide between Sheep Creek and San Gabriel River drainages (Figure 9, Figure 10).

The region encompasses all coastal drainages flowing into the Pacific Ocean between Rincon Point (on the coast of western Ventura County) and the eastern Los Angeles County line, as well as the drainages of five coastal islands (Anacapa, San Nicolas, Santa Barbara, Santa Catalina and San Clemente). In addition, the region includes all coastal waters within three miles of the continental and island coastlines. Two large deepwater harbors (Los Angeles and Long Beach Harbors) and one smaller deepwater harbor (Port Hueneme) are contained in the region. There are small craft marinas within the harbors, as well as tank farms, naval facilities, fish processing plants, boatyards, and container terminals. Several small-craft marinas also exist along the coast (Marina del Ray, King Harbor, and Ventura Harbor); these contain boatyards, other small businesses and dense residential development.

Several large, primarily concrete-lined rivers (Los Angeles River and San Gabriel River) lead to unlined tidal prisms which are influenced by marine waters. Salinity may be greatly reduced following rains since these rivers drain large urban areas composed of mostly impermeable surfaces. Some of these tidal prisms receive a considerable amount of freshwater throughout the year from publicly owned treatment works discharging tertiary-treated effluent. Lagoons are located at the mouths of other rivers draining relatively undeveloped areas (Mugu Lagoon, Malibu Lagoon, Ventura River Estuary, and Santa Clara River Estuary). There are also a few isolated coastal brackish water bodies receiving runoff from agricultural or residential areas.

Santa Monica Bay, which includes the Palos Verdes Shelf, dominates a large portion of the open coastal water bodies in the region. Eight ASBS are located in the Los Angeles Region: San Nicolas Island and Begg Rock (#21), Santa Barbara and Anacapa Islands (#22), San Clemente Island (#23), Laguna Point to Latigo Point (#24), Northwest Santa Catalina Island (#25), Western Santa Catalina Island (#26), Farnsworth Bank (#27), and Southeast Santa Catalina (#28).

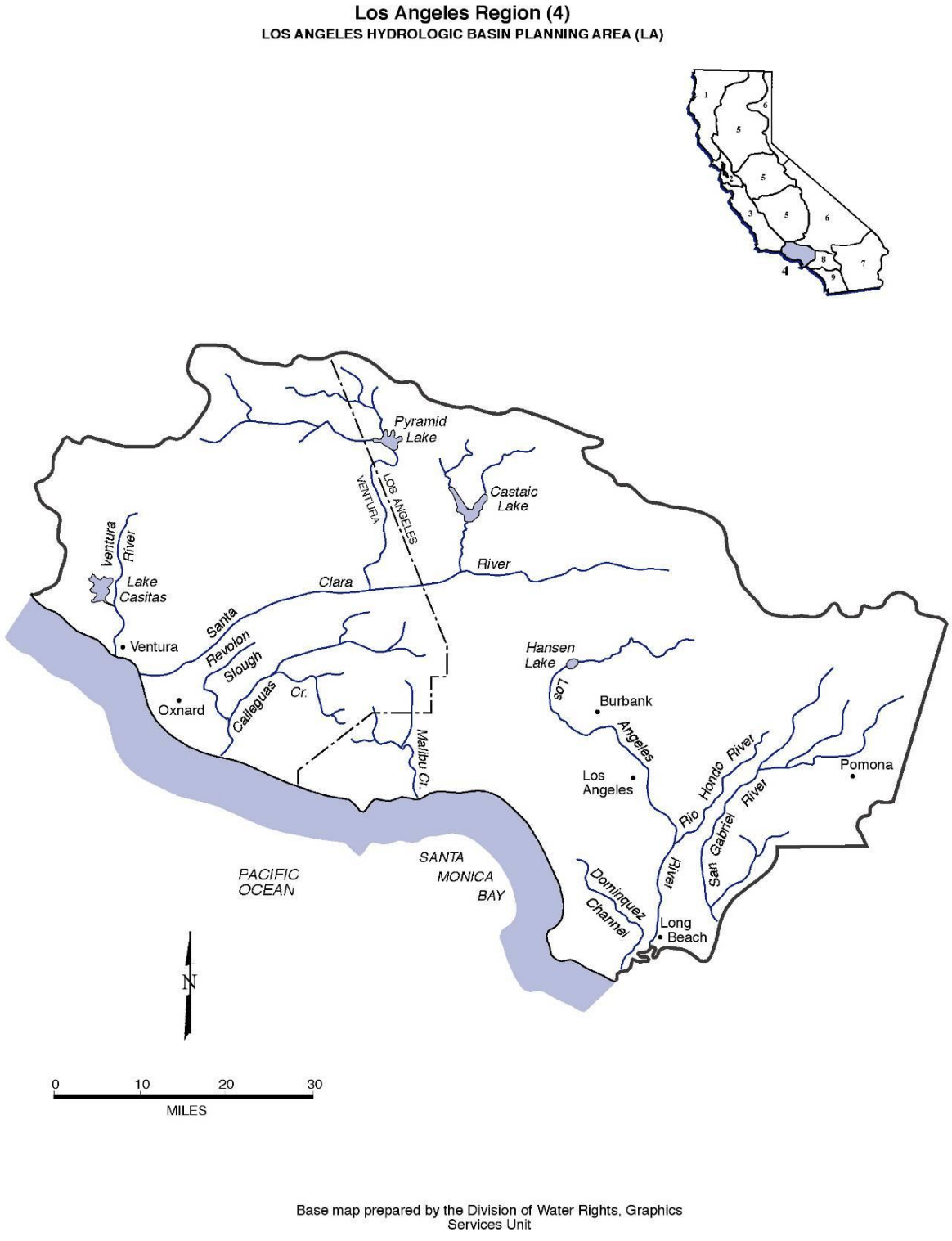


Figure 9. Los Angeles Region Hydrologic Basin.

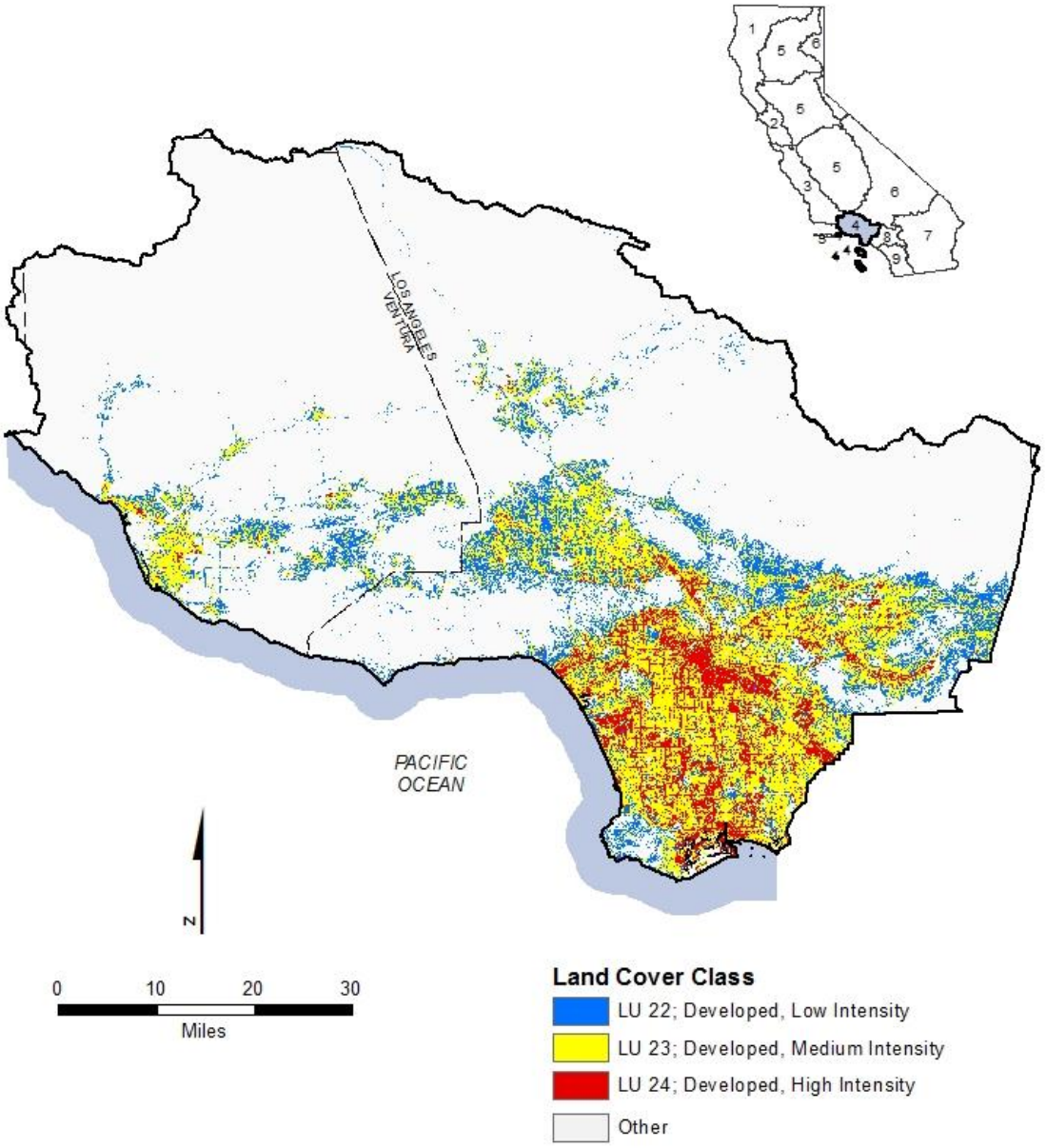


Figure 10. Los Angeles Region Developed Land Coverage.

3.8 Central Valley Region

The Central Valley Region includes approximately 40 percent of the land in California stretching from the Oregon border to the Kern County-Los Angeles County line. The region is divided into three basins. For planning purposes, the Sacramento River and the San Joaquin River Basins are covered under one basin plan, and the Tulare Lake Basin is covered under a separate basin plan.

The Sacramento River Basin covers 27,210 square miles and includes the entire area drained by the Sacramento River (Figure 11, Figure 12). The principal streams are the Sacramento River and its larger tributaries: the Pitt, Feather, Yuba, Bear, and American Rivers to the East; and Cottonwood, Stony, Cache, and Putah Creek to the west. Major reservoirs and lakes include Shasta, Oroville, Folsom, Clear Lake, and Lake Berryessa.

The San Joaquin River Basin covers 15,880 square miles and includes the entire area drained by the San Joaquin River (Figure 13, Figure 14). Principal streams in the basin are the San Joaquin River and its larger tributaries: the Consumnes, Mokelumne, Calaveras, Stanislaus, Tuolumne, Merced, Chowchilla, and Fresno Rivers. Major reservoirs and lakes include Pardee, New Hogan, Millerton, McClure, Don Pedro, and New Melones.

The Tulare Lake Basin covers approximately 16,406 square miles and comprises the drainage area of the San Joaquin Valley south of the San Joaquin River (Figure 15, Figure 16). The planning boundary between the San Joaquin River Basin and the Tulare Lake Basin is defined by the northern boundary of Little Pinoche Creek basin eastward along the channel of the San Joaquin River to Millerton Lake in the Sierra Nevada foothills, and then along the southern boundary of the San Joaquin River drainage basin. Main Rivers within the basin include the King, Kaweah, Tule, and Kern Rivers, which drain to the west face of the Sierra Nevada Mountains. Imported surface water supplies enter the basin through the San Luis Drain-California Aqueduct System, Friant-Kern Channel, and the Delta Mendota Canal.

The two northern most basins are bound by the crests of the Sierra Nevada on the east and the Coast Range and Klamath Mountains on the west. They extend about 400 miles from the California-Oregon border southward to the headwaters of the San Joaquin River. These two river basins cover about one fourth of the total area of the state and over 30 percent of the state's irrigable land. The Sacramento and San Joaquin Rivers furnish roughly 50 percent of the state's water supply. Surface water from the two drainage basins meets and forms the Delta, which ultimately drains into the San Francisco Bay.

The Delta is a maze of river channels and diked islands covering roughly 1,150 square miles, including 78 square miles of water area. Two major water projects located in the South Delta, the Federal Central Valley Project and the State Water Project, deliver water from the Delta to Southern California, the San Joaquin Valley, Tulare Lake Basin, the San Francisco Bay Area, as well as within the Delta boundaries.

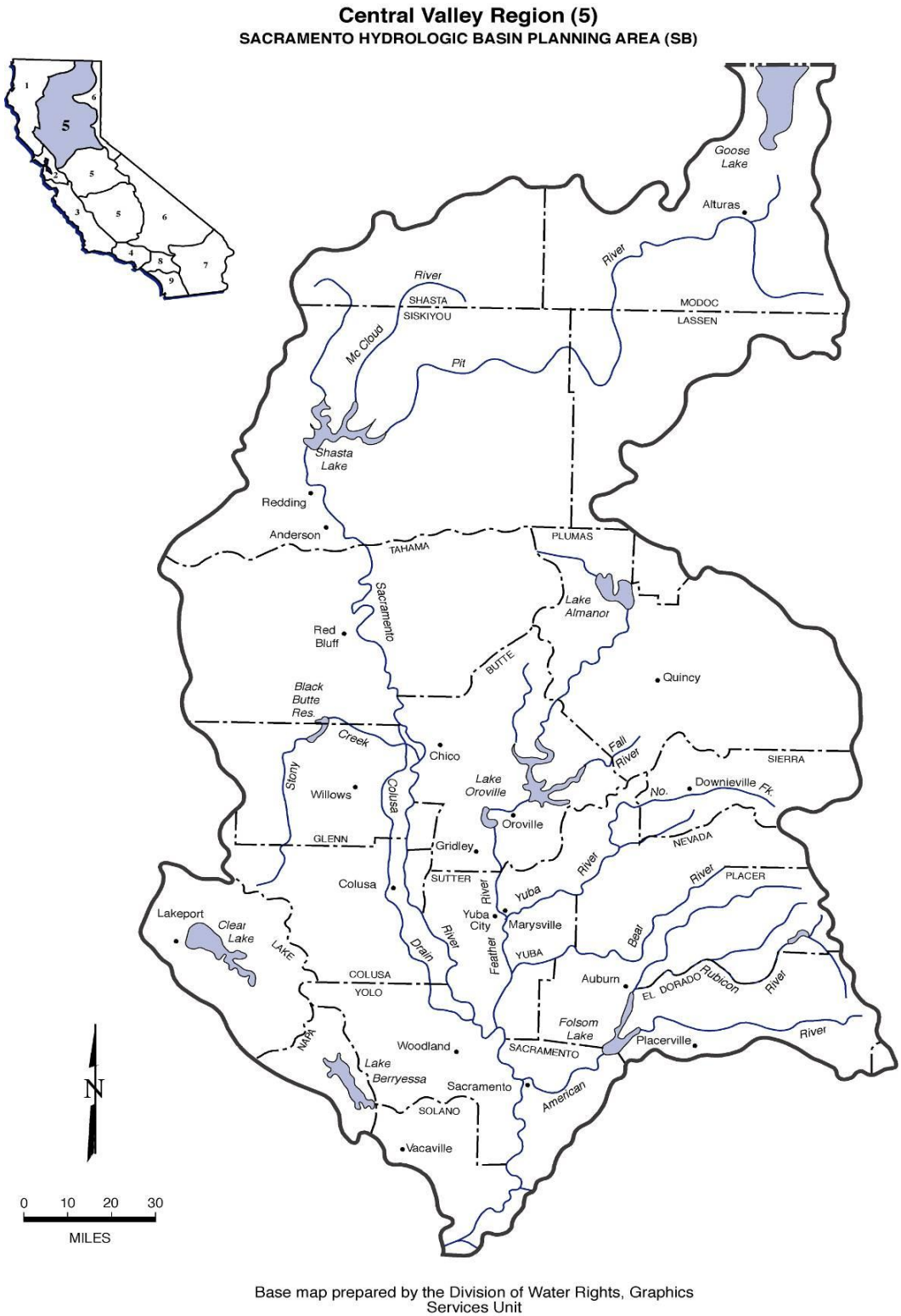


Figure 11. Central Valley Region, Sacramento Region Hydrologic Basin.

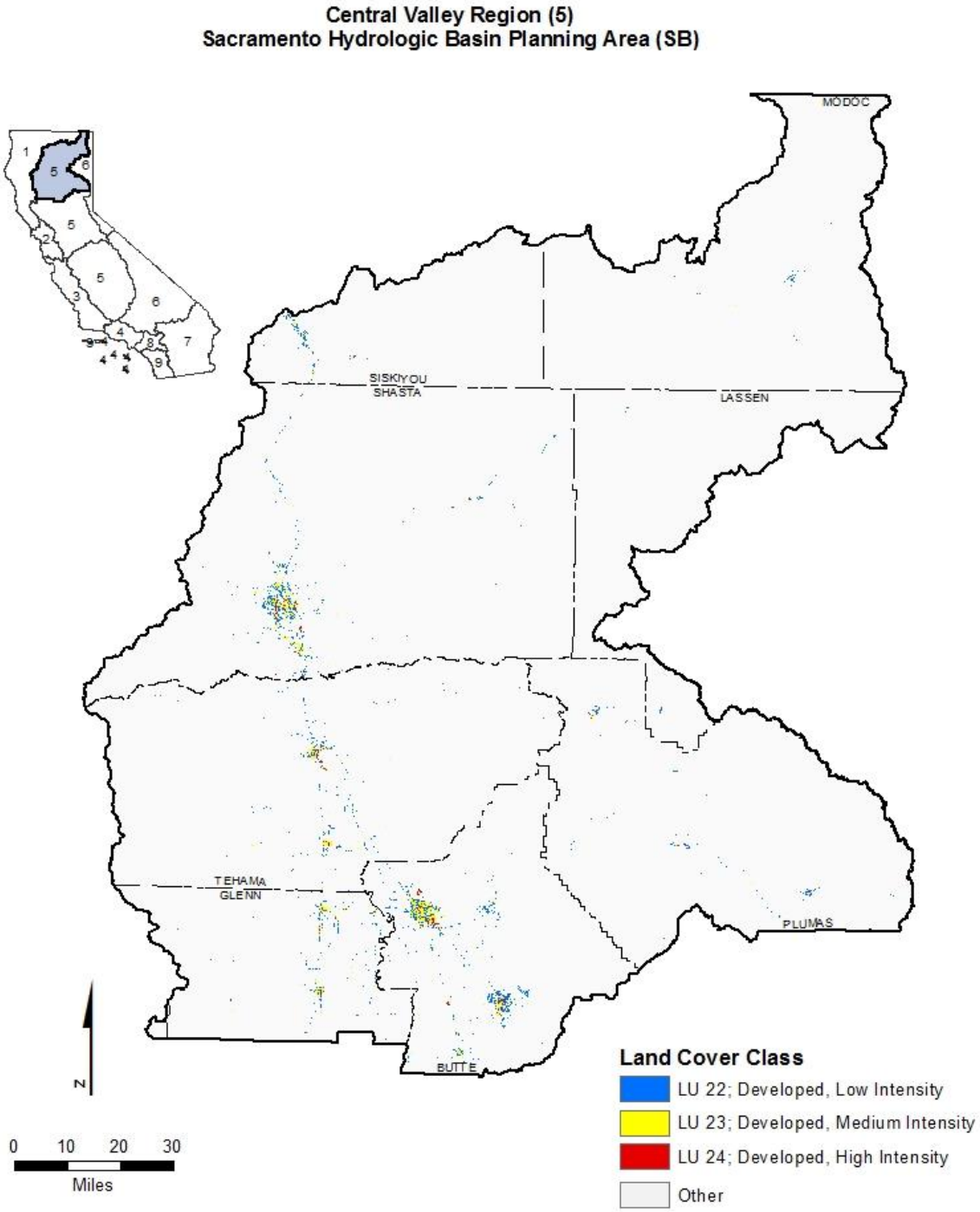
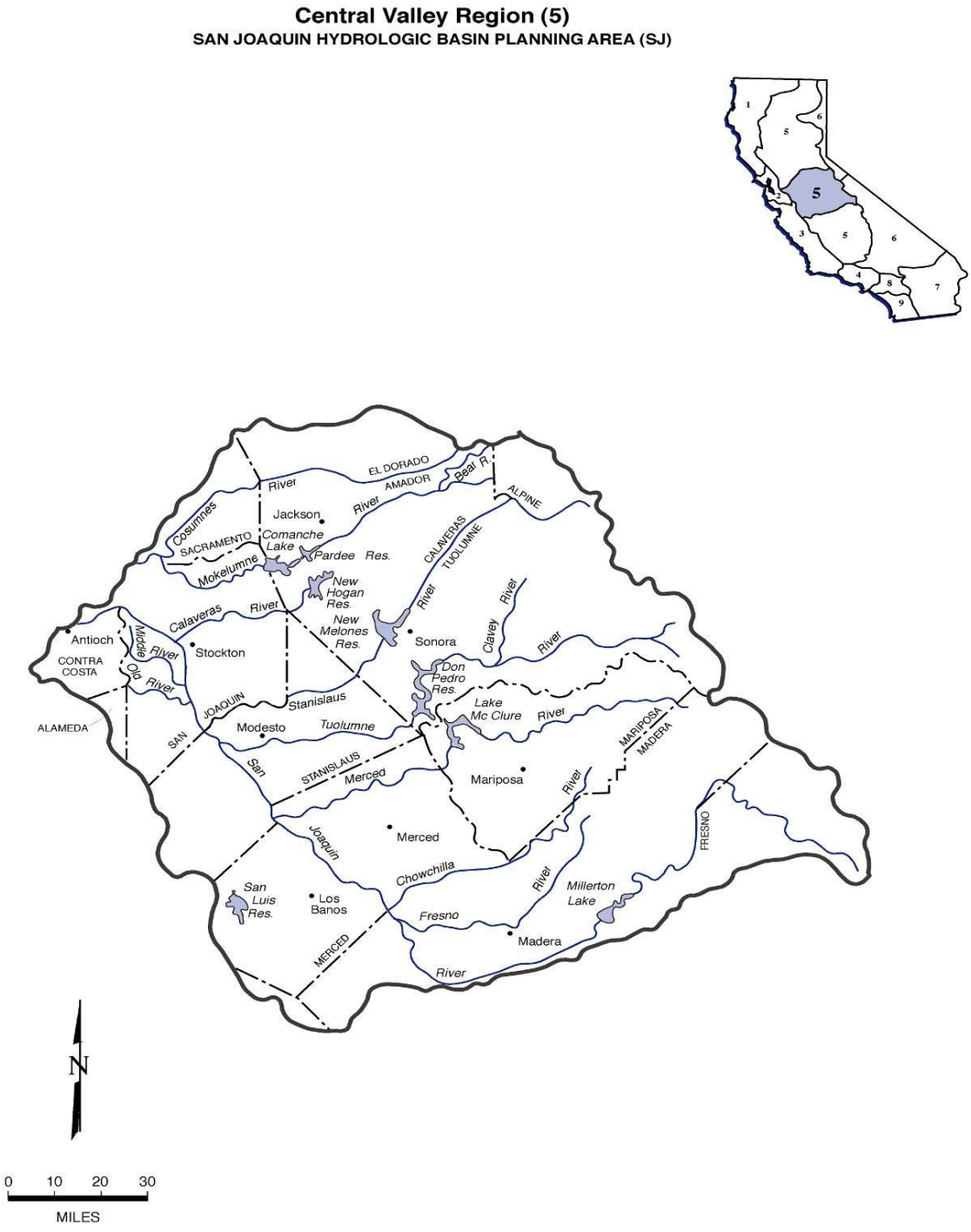


Figure 12. Central Valley Region, Sacramento Region Developed Land Coverage.



Base map prepared by the Division of Water Rights, Graphics Services Unit

Figure 13. Central Valley Region, San Joaquin Hydrologic Basin.

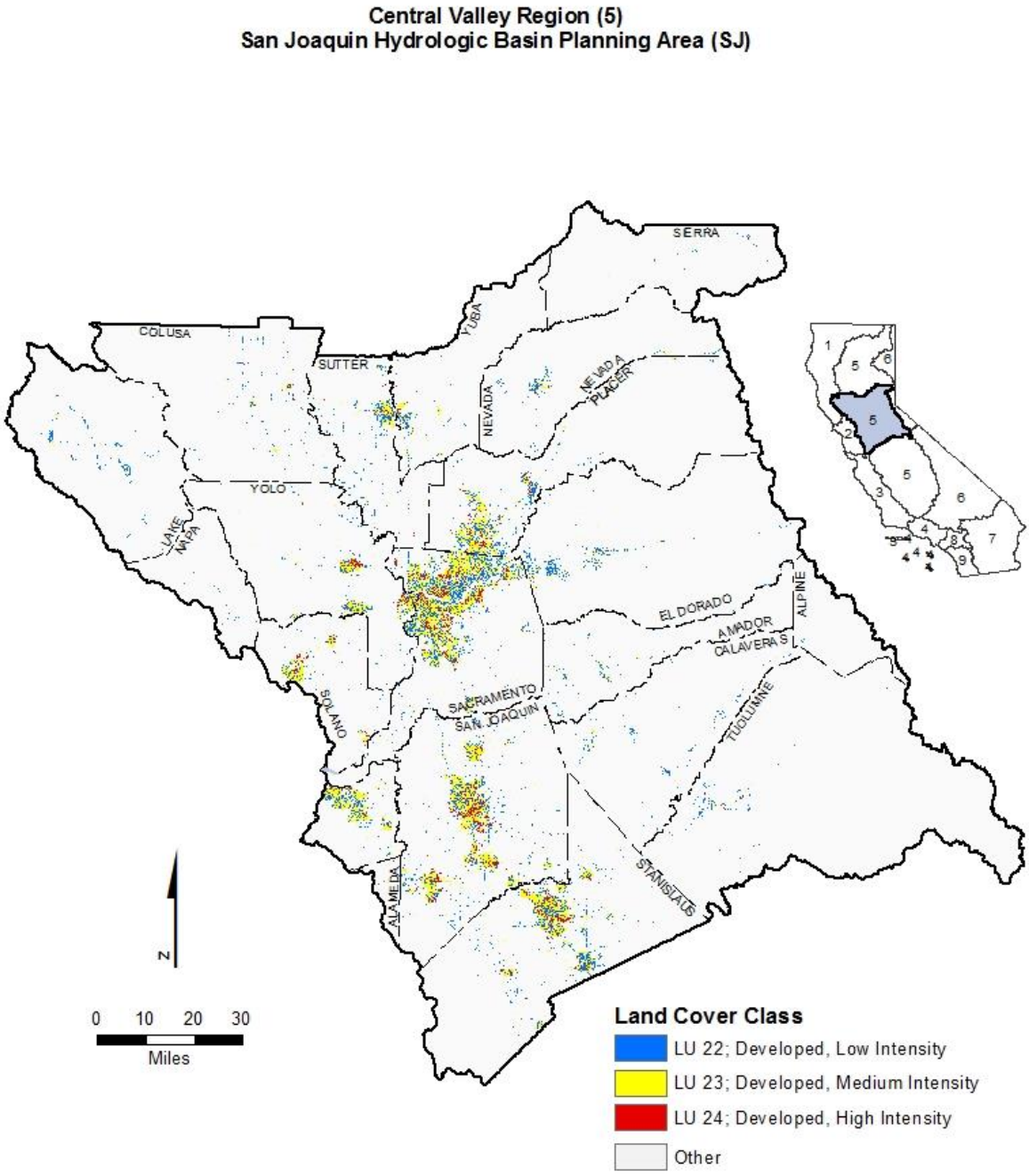


Figure 14. Central Valley Region, San Joaquin Developed Land Coverage.

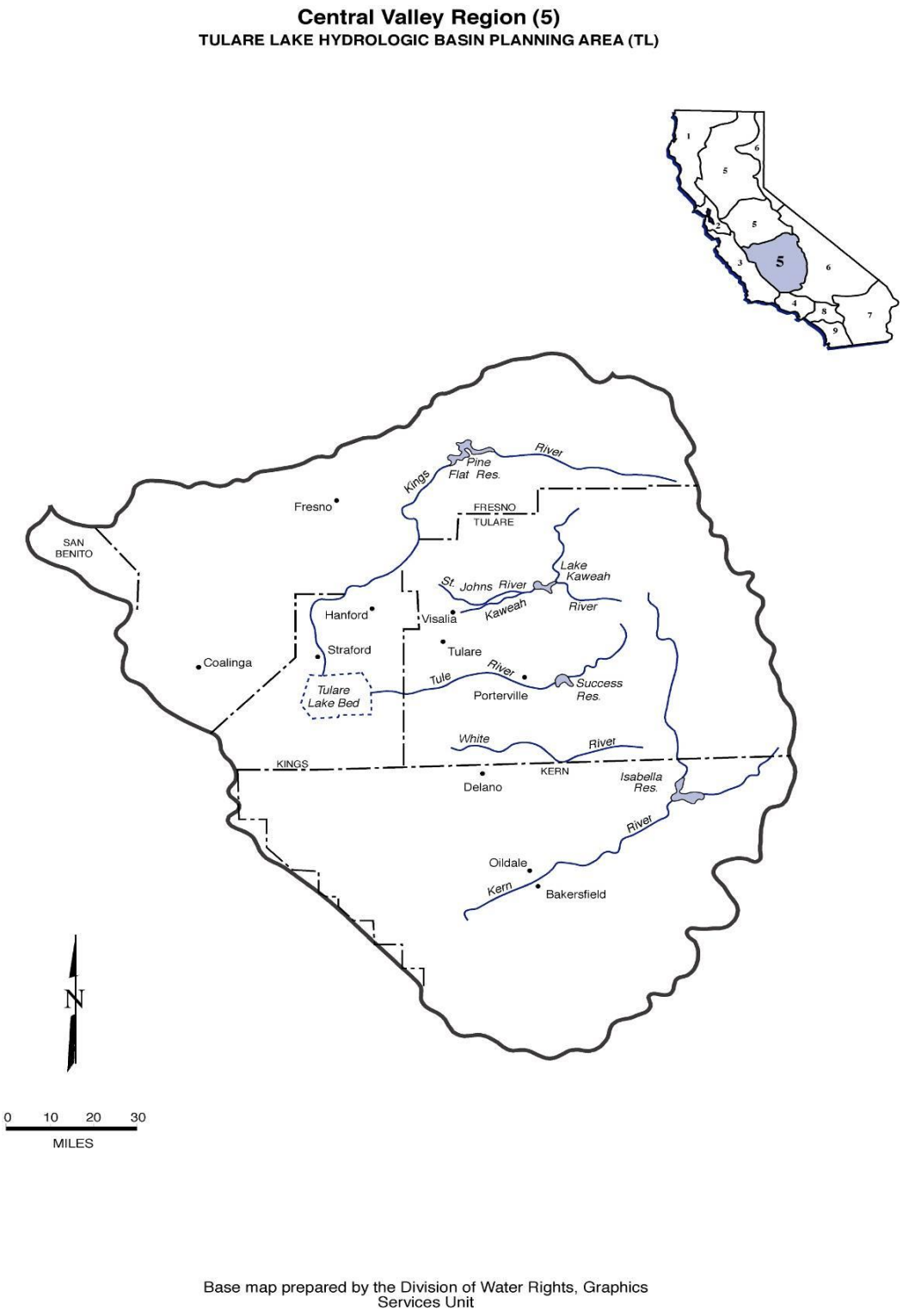


Figure 15. Central Valley Region, Tulare Lake Hydrologic Basin.

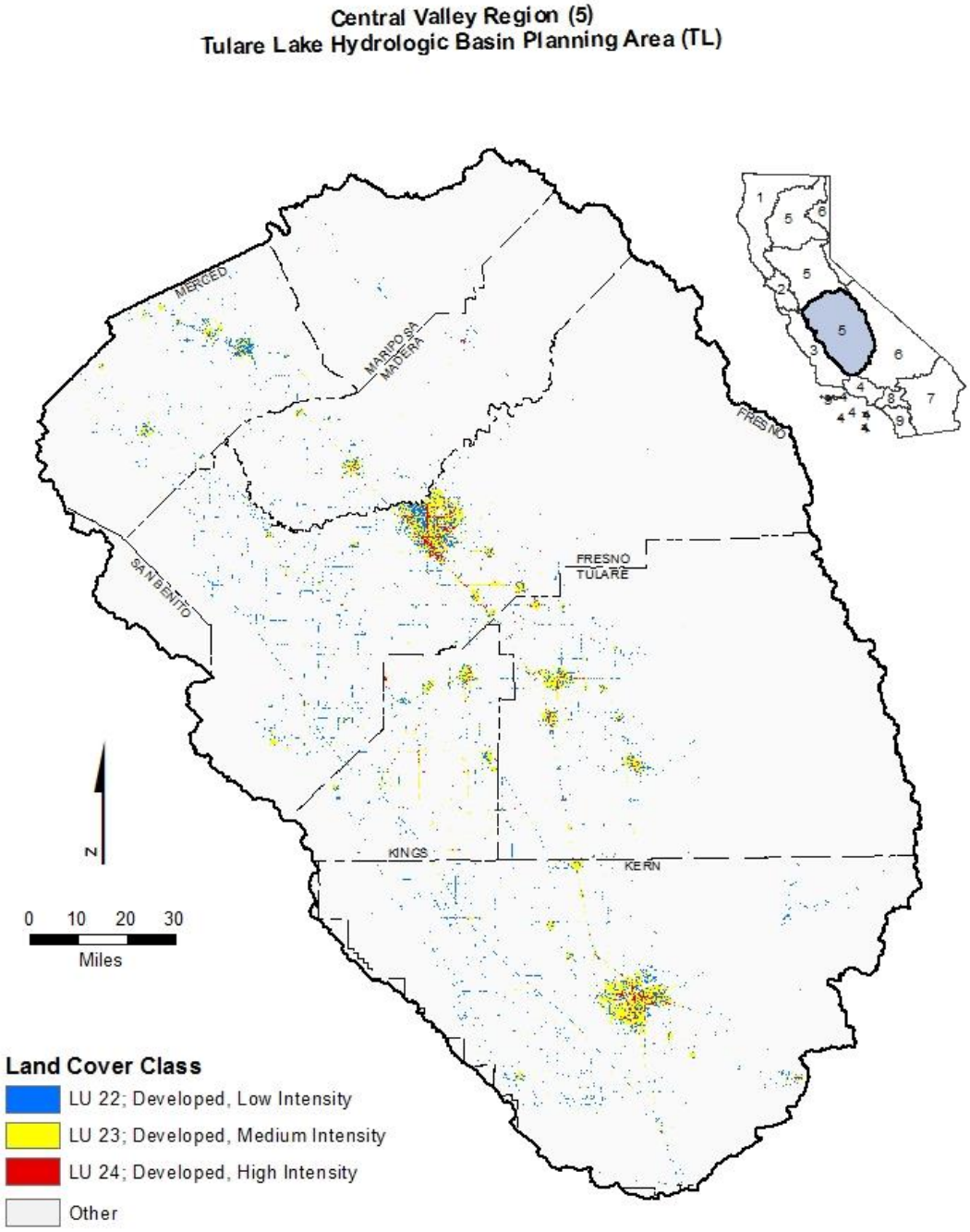


Figure 16. Central Valley Region, Tulare Lake Developed Land Coverage.

3.9 Lahontan Region

The Lahontan Region is divided into North and South Lahontan Basins at the boundary between the Mono Lake and East Walker River watersheds (Figure 17, Figure 18, Figure 19, Figure 20). It is about 570 miles long and has a total area of 33,131 square miles. The Lahontan Region includes the highest (Mount Whitney) and lowest (Death Valley) points in the contiguous United States. The region includes the eastern slopes of the Warner, Sierra Nevada, San Bernardino, Tehachapi and San Gabriel Mountains, and all or part of other ranges including the White, Providence, and Granite Mountains. Topographic depressions include the Madeline Plains, Surprise, Honey Lake, Bridgeport, Owens, Antelope, and Victor Valleys.

The region includes over 700 lakes, 3,170 miles of streams, and 1,581 square miles of groundwater basins. There are 12 major watersheds in the North Lahontan Basin. Among these are the Eagle Lake, Susan River/Honey Lake, Truckee, Carson, and Walker River watersheds. The South Lahontan Basin includes three major surface water systems (the Mono Lake, Owens River, and Mojave River watersheds) and a number of separate closed groundwater basins.

Although annual precipitation amounts can be high (up to 70 inches) at higher elevations, most precipitation in the mountainous areas falls as snow. Desert areas receive relatively little annual precipitation (less than two inches in some locations) but this can be concentrated and lead to flash flooding. The varied topography, soils, and microclimates of the Lahontan Region support a corresponding variety of plant and animal communities. Wetland and riparian plant communities, including marshes, meadows, sphagnum bogs, riparian deciduous forest, and desert washes, are particularly important for wildlife, given the general scarcity of water in the region.

Both developed (e.g., camping, skiing, and day use) and undeveloped (e.g., hiking, fishing) recreation are important land uses in the region. In addition to tourism, other land uses include resource extraction (mining, energy production, and silviculture), agriculture (mostly livestock grazing), and defense-related activities.

Much of the Lahontan Region is in public ownership, with land use controlled by agencies, such as the U.S. Forest Service, National Park Service, and Bureau of Land Management, various branches of the military, the California State Department of Parks and Recreation, and the City of Los Angeles Department of Water and Power. While the permanent resident population (about 500,000 in 1990) of the Region is low, most of it is concentrated in high-density communities in the South Lahontan Basin. In addition, millions of visitors use the Lahontan Region for recreation each year. Rapid population growth has occurred in the Victor and Antelope Valleys, and within commuting distance of Reno, Nevada. Principal communities of the North Lahontan Basin include Susanville, Truckee, Tahoe City, South Lake Tahoe, Markleeville, and Bridgeport. The South Lahontan Basin includes the communities of Mammoth Lakes, Bishop, Ridgecrest, Mojave, Adelanto, Palmdale, Lancaster, Victorville, and Barstow.

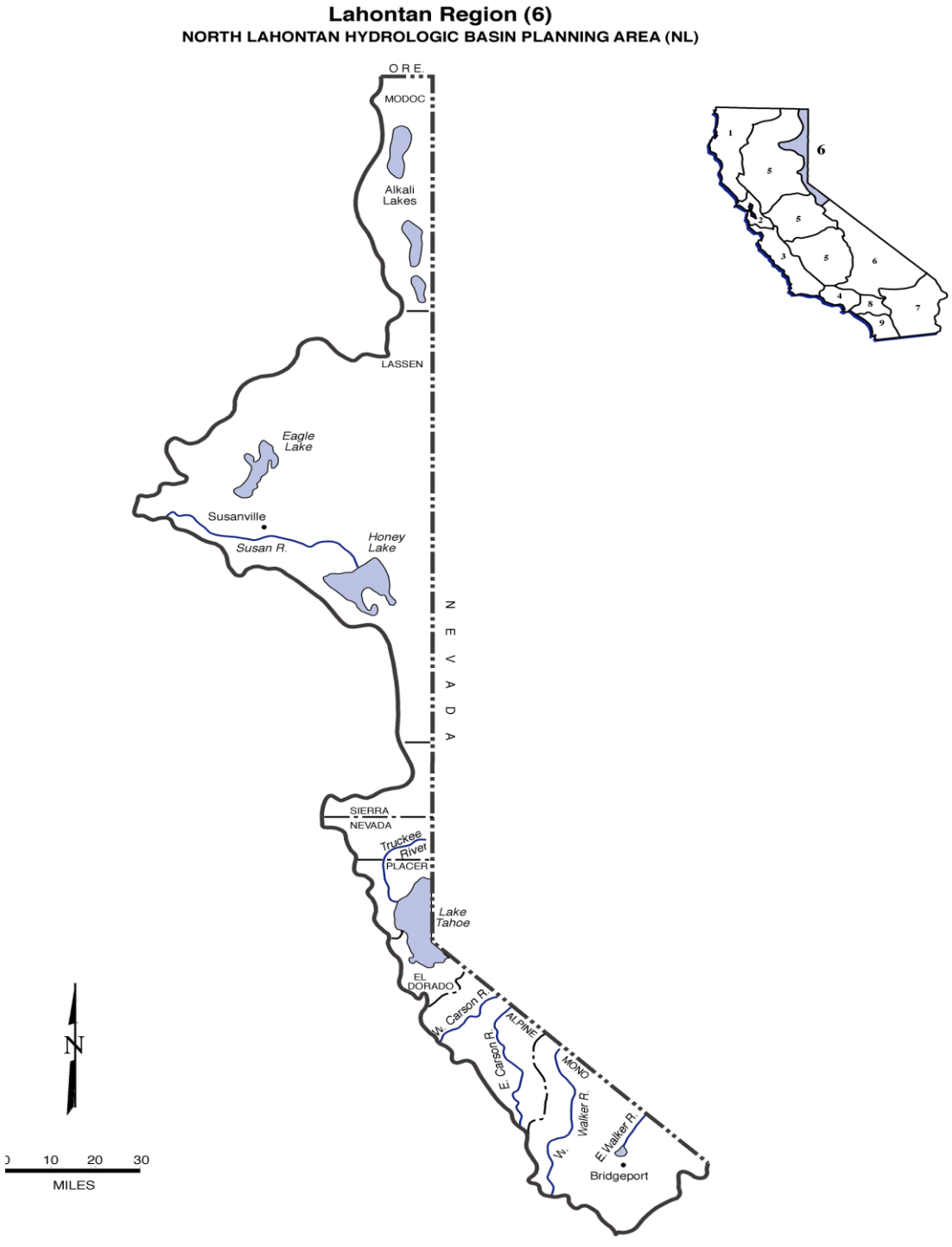


Figure 17. Lahontan Region, North Lahontan Hydrologic Basin.

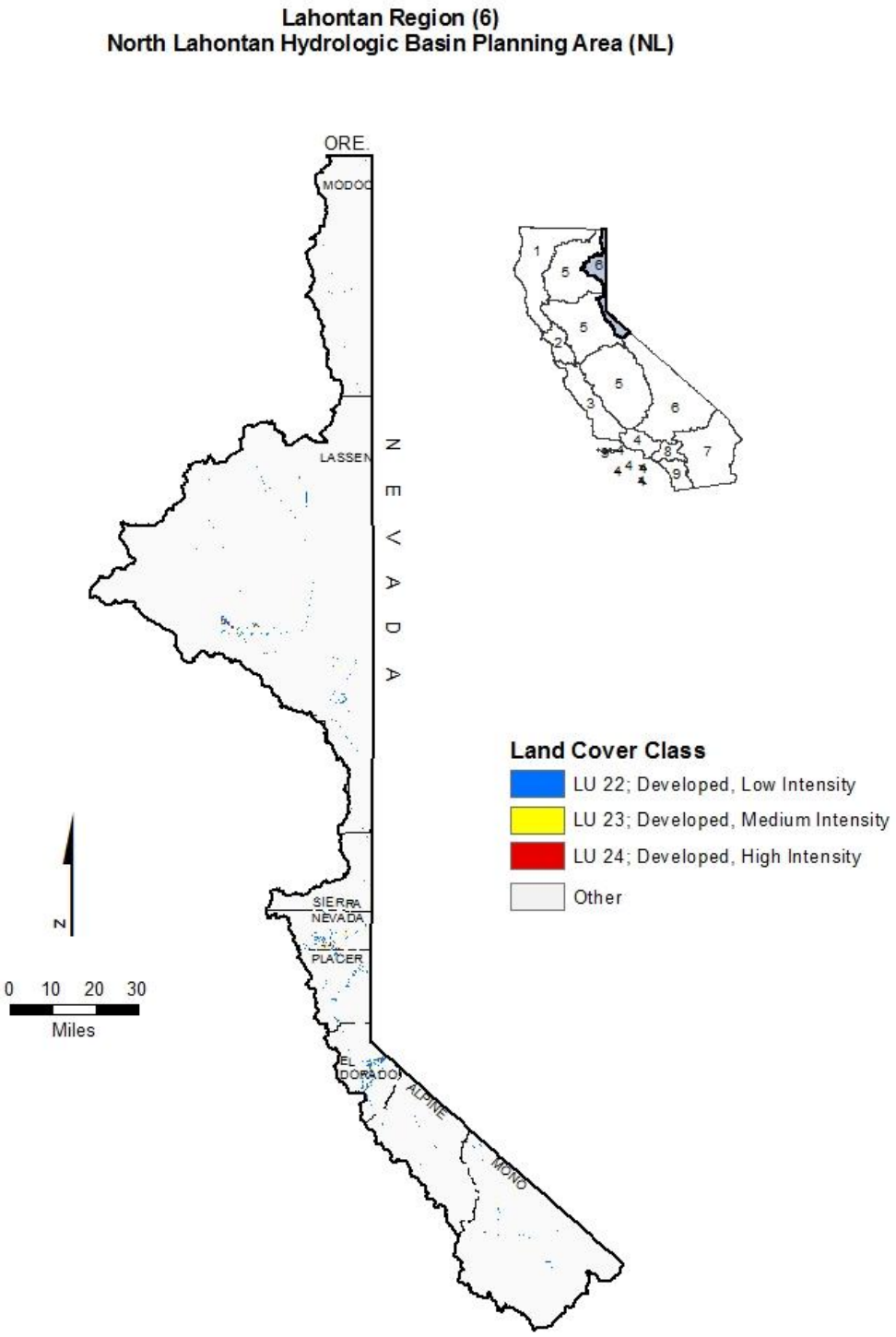


Figure 18. Lahontan Region, North Lahontan Developed Land Coverage.

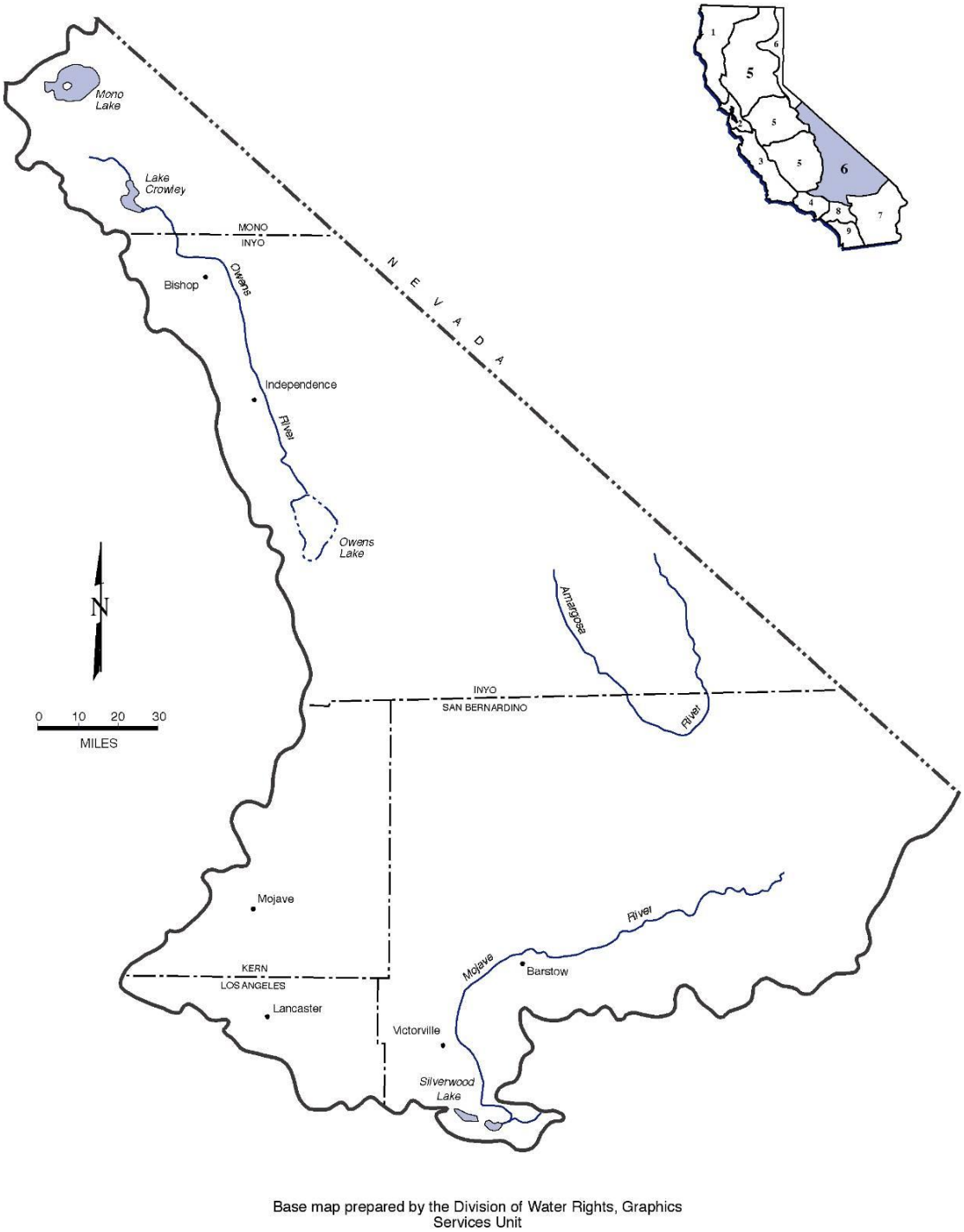


Figure 19. Lahontan Region, South Lahontan Hydrologic Basin.

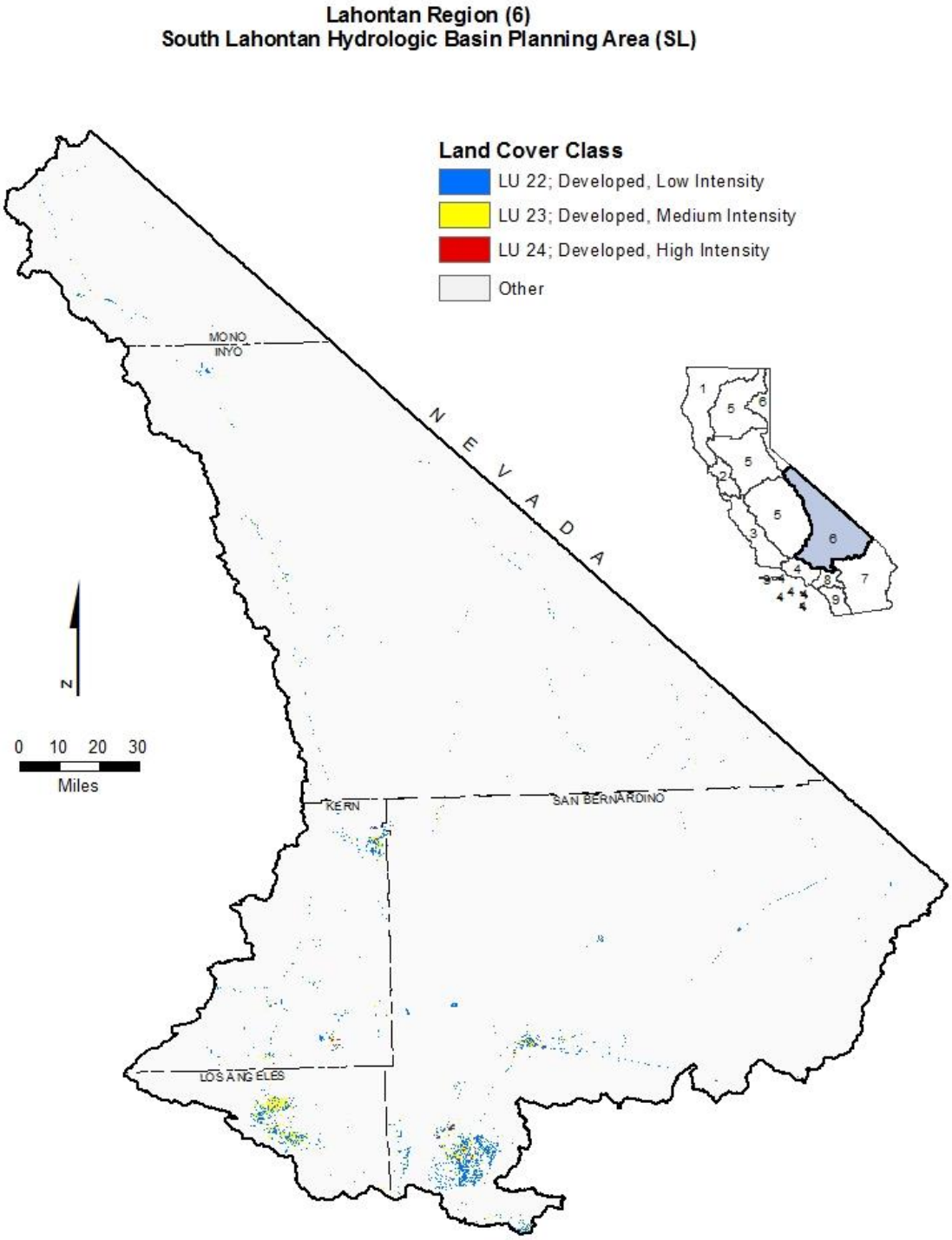


Figure 20. Lahontan Region, South Lahontan Developed Land Coverage.

3.10 Colorado River Basin Region

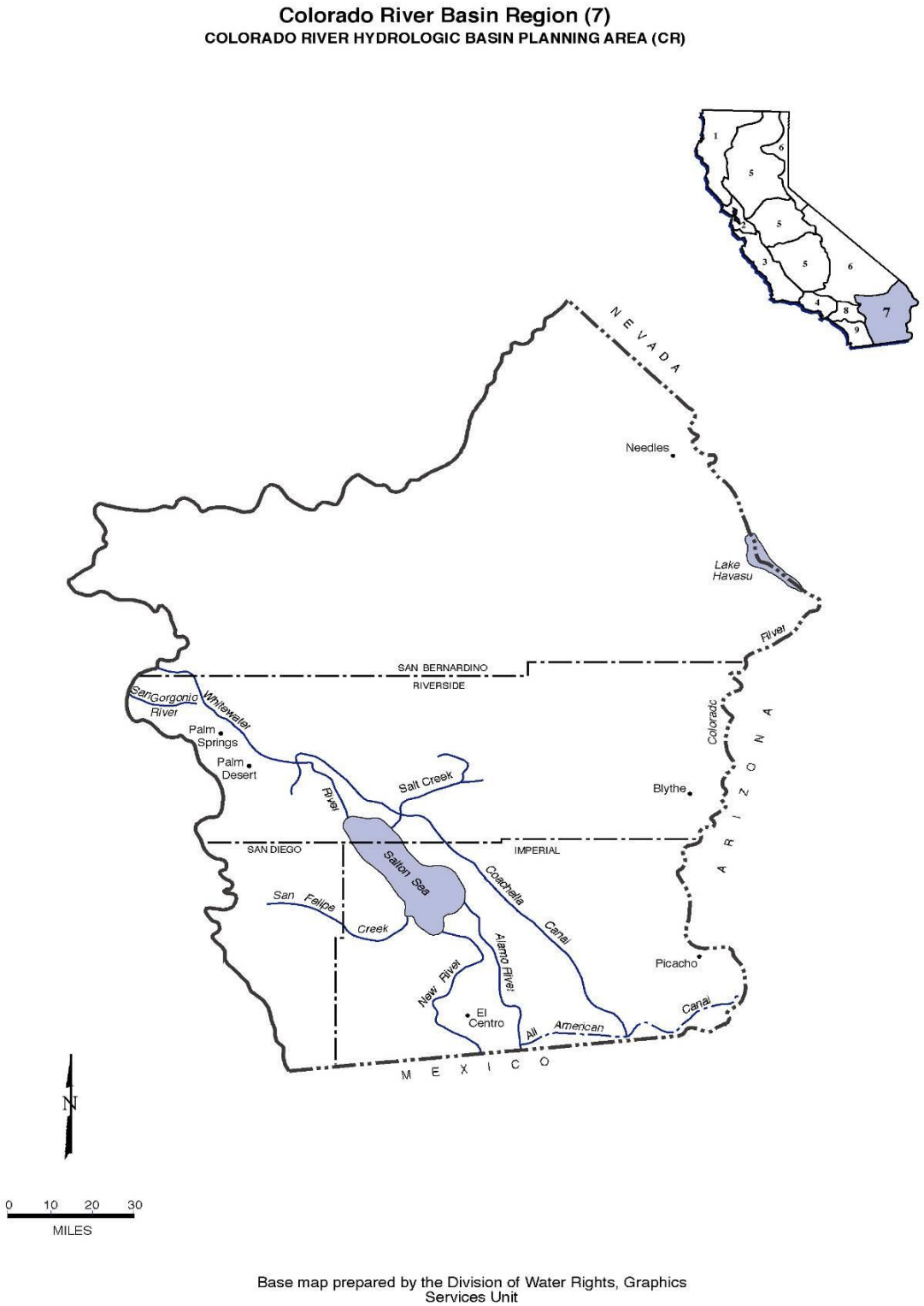
The Colorado River Basin Region covers approximately 13 million acres (20,000 square miles) in the southeastern portion of California (Figure 21, Figure 22). It includes all of Imperial County and portions of San Bernardino, Riverside, and San Diego Counties. It shares a boundary for 40 miles on the northeast with the State of Nevada. The New York, Providence, Granite, Old Dad, Bristol, Rodman, and Ord Mountain ranges border the region to the north, the San Bernardino, San Jacinto, and Laguna Mountain ranges border the region to the west, the Republic of Mexico borders the Region to the south, and the Colorado River and State of Arizona border the region to the east. Geographically the region represents only a small portion of the total Colorado River drainage area, which includes portions of Arizona, Nevada, Utah, Wyoming, Colorado, New Mexico, and Mexico. A significant geographical feature of the region is the Salton Trough, which contains the Salton Sea and the Coachella and Imperial Valleys. The two valleys are separated by the Salton Sea, which covers the lowest area of the depression. The Salton Sea is California's largest inland body of water and provides wildlife habitat and sport fishery.

Much of the agricultural economy and industry of the region is located in the Salton Trough. There are also industries associated with agriculture, such as sugar refining as well as increasing development of geothermal industries. The Salton Sea serves as a drainage reservoir for irrigation return water and storm water from the Coachella Valley, Imperial Valley, and Borrego Valley, and also receives drainage water from the Mexicali Valley in Mexico. Development along California's 230 mile reach of the Colorado River, which flows along the eastern boundary of the Region, include agricultural areas in Palo Verde Valley and Bard Valley, urban centers at Needles, Blythe, and Winterhaven, several transcontinental gas compressor stations, and numerous small recreational communities. Some mining operations are located in the surrounding mountains. Also the Fort Mojave, Chemehuevi, Colorado River, and Yuma Indian Reservations are located along the River.

The region has the driest climate in California. Snow falls in the region's higher elevations, with mean seasonal precipitation ranging from 30 to 40 inches in the upper San Jacinto and San Bernardino Mountains. The lower elevations receive relatively little rainfall. An average of four inches of precipitation occurs along the Colorado River, with much of this coming from late summer thunderstorms moving north from Mexico. Typical mean seasonal precipitation in the desert valleys is 3.6 inches at Indio and 3.2 inches at El Centro. Precipitation over the entire area occurs mostly from November through April, and August through September, but its distribution and intensity are often sporadic. Local thunderstorms may contribute all the average seasonal precipitation at one time or only a trace of precipitation may be recorded at any locale for the entire season.

The region provides habitat for a variety of native and introduced species of wildlife. Animals tolerant of arid conditions, including small rodents, coyotes, foxes, birds, and a variety of reptiles, inhabit large areas within the region. Along the Colorado River and in the higher elevations of the San Bernardino and San Jacinto Mountains, where water is more abundant, and where deer, bighorn sheep, and a diversity of small animals exist. Practically all of the fishes inhabiting the region are introduced species. The Salton Sea

National Wildlife Refuge and state waterfowl management areas are located in or near the Salton Sea. The refuge supports large numbers of waterfowl in addition to other types of birds. Located along the Colorado River are the Havasu, Cibola and Imperial National Wildlife Refuges. The region provides habitat for certain endangered/threatened species of wildlife including desert pupfish, razorback sucker, Yuma clapper rail, black rail, least Bell's vireo, yellow billed cuckoo, desert tortoise, and peninsular bighorn sheep.



Base map prepared by the Division of Water Rights, Graphics Services Unit

Figure 21. Colorado River Region Hydrologic Basin.

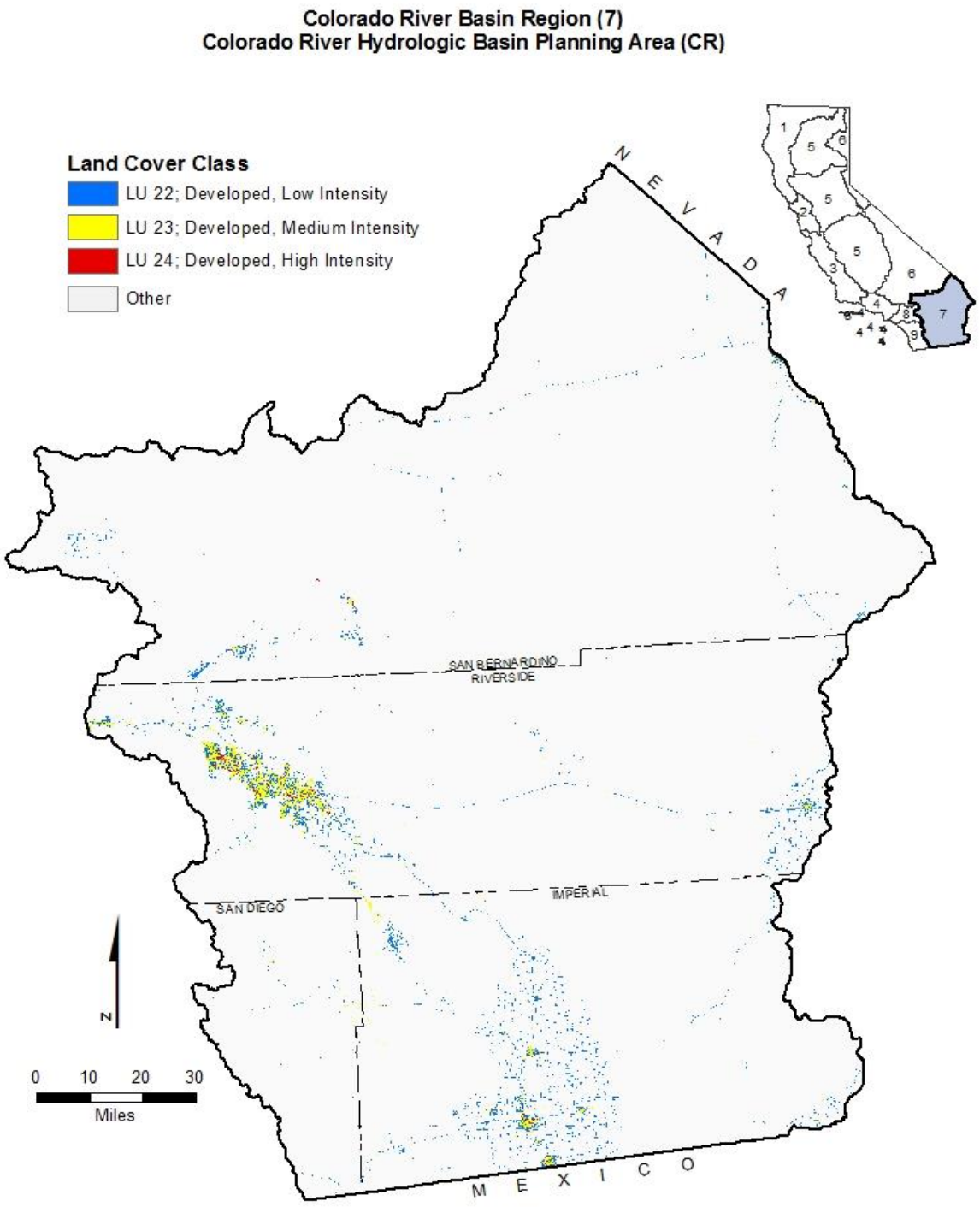


Figure 22. Colorado River Region Developed Land Coverage.

3.11 Santa Ana Region

The Santa Ana Region comprises all basins draining into the Pacific Ocean between the southern boundary of the Los Angeles Region and the drainage divide between Muddy and Moro Canyons, from the ocean to the summit of San Joaquin Hills; along the divide between lands draining into Newport Bay and Laguna Canyon to Niguel Road; along

Niguel Road and Los Aliso Avenue to the divide between Newport Bay and Aliso Creek drainages; and along the divide and the southeastern boundary of the Santa Ana River drainage to the divide between Baldwin Lake and Mojave Desert drainages; to the divide between the Pacific Ocean and Mojave Desert drainages (Figure 23, Figure 24). The Santa Ana Region is the smallest of the nine regions in the state (2,800 square miles) and is located in southern California, roughly between Los Angeles and San Diego. Although small geographically, the region's four million-plus residents (1993 estimate) make it one of the most densely populated regions.

The climate of the Santa Ana Region is generally dry in the summer with mild, wet winters). The average annual rainfall in the region is about 15 inches, most of it occurring between November and March. The enclosed bays in the region include Newport Bay, Bolsa Bay (including Bolsa Chica Marsh), and Anaheim Bay. Principal rivers include Santa Ana, San Jacinto and San Diego. Lakes and reservoirs include Big Bear, Hemet, Mathews, Canyon Lake, Lake Elsinore, Santiago Reservoir, and Perris Reservoir. Two ASBS are located in the Santa Ana Region: Robert E. Badham (#32) and Irvine Coast (also located in the San Diego Region) (#33).

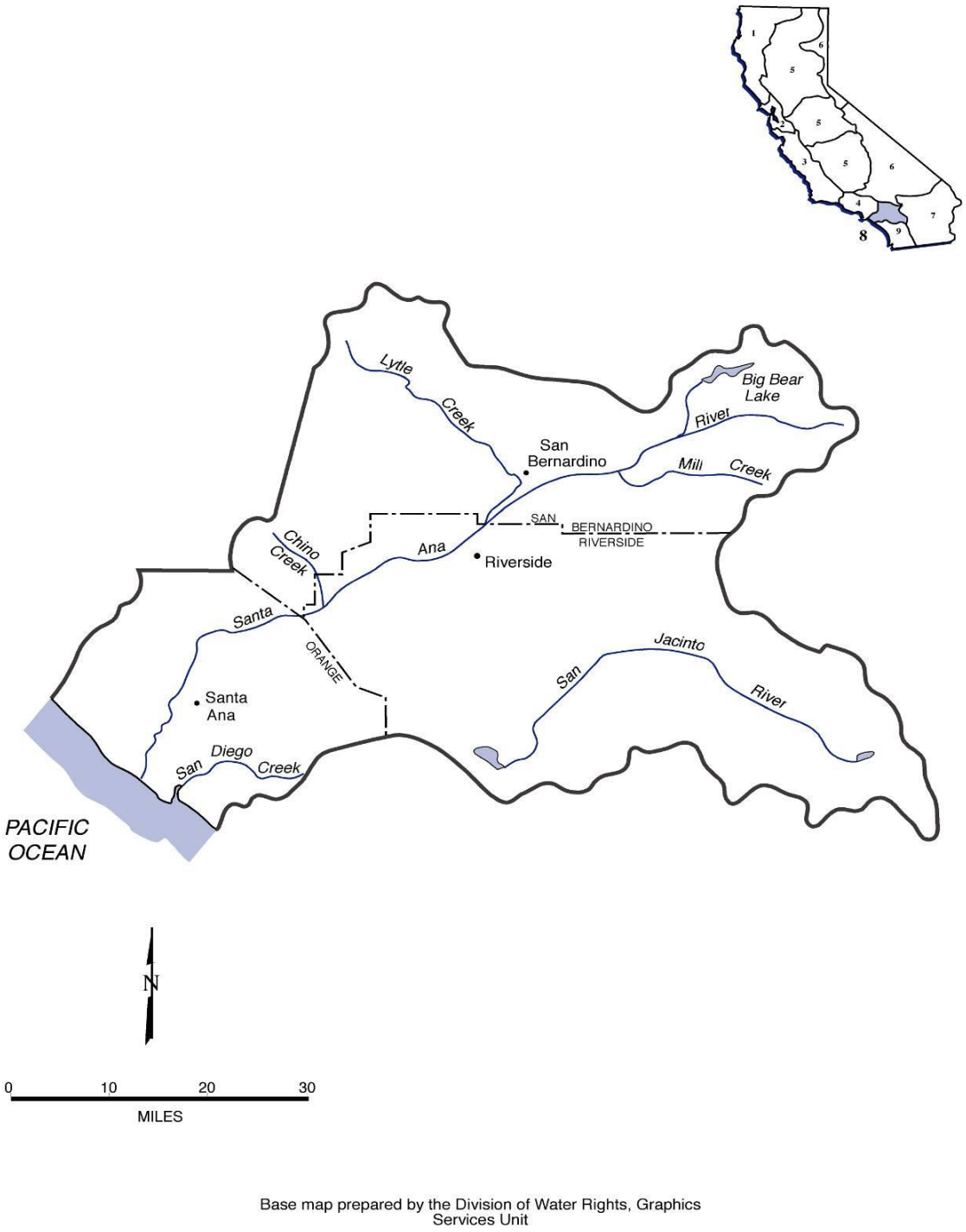


Figure 23. Santa Ana Region Hydrologic Basin.

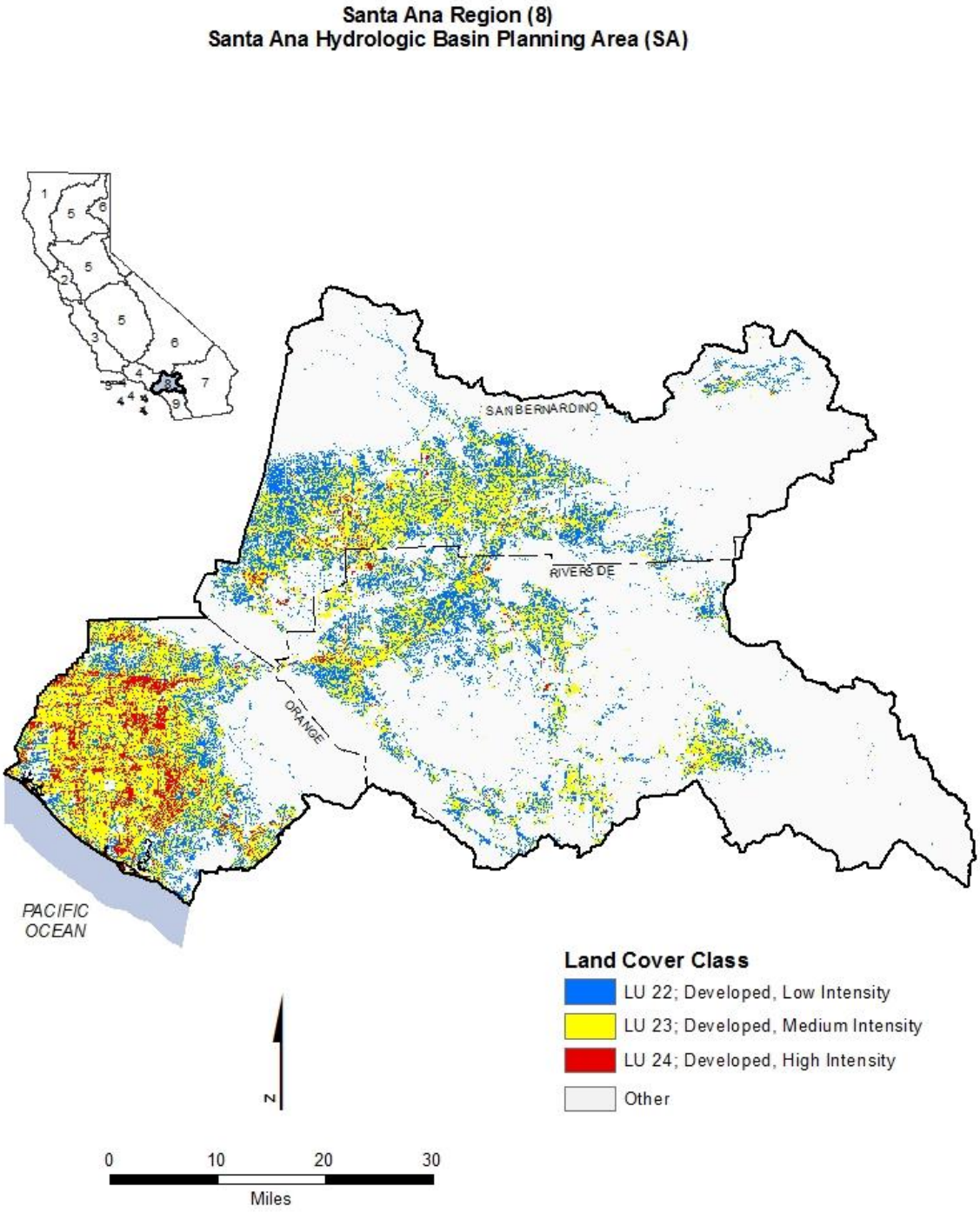


Figure 24. Santa Ana Region Developed Land Coverage.

3.12 San Diego Region

The San Diego Region comprises all basins draining into the Pacific Ocean between the southern boundary of the Santa Ana Region and the California-Mexico boundary (Figure 25, Figure 26). The San Diego Region is located along the coast of the Pacific Ocean from the Mexican border to north of Laguna Beach. The Region is rectangular in shape and extends approximately 80 miles along the coastline and 40 miles east to the crest of the mountains. The Region includes portions of San Diego, Orange, and Riverside Counties. The cities of San Diego, National City, Chula Vista, Coronado, and Imperial Beach surround San Diego Bay in the southern portion of the Region.

The population of the region is heavily concentrated along the coastal strip. Six deep water sewage outfalls and one across the beach from the new border plant at the Tijuana River empty into the ocean. Two harbors, Mission Bay and San Diego Bay, support major recreational and commercial boat traffic. Coastal lagoons are found along the San Diego County coast at the mouths of creeks and rivers.

San Diego Bay is long and narrow, 15 miles in length and approximately one mile across. A deep-water harbor, San Diego Bay has experienced waste discharge from former sewage outfalls, industries, and urban runoff. Up to 9,000 vessels may be moored there. San Diego Bay also hosts four major U.S. Navy bases with approximately 80 surface ships and submarines. Coastal waters include bays, harbors, estuaries, beaches, and open ocean.

Weather patterns are generally dry in the summer with mild, wet winters, with an average rainfall of approximately ten inches per year occurring along the coast.

Deep draft commercial harbors include San Diego Bay and Oceanside Harbor and shallower harbors include Mission Bay and Dana Point Harbor. Tijuana Estuary, Sweetwater Marsh, San Diego River Flood Control Channel, Kendal-Frost Wildlife Reserve, San Dieguito River Estuary, San Elijo Lagoon, Batiquitos Lagoon, Agua Hedionda Lagoon, Buena Vista Lagoon, San Luis Rey Estuary, and Santa Margarita River Estuary are the important estuaries of the region. There are 13 principal stream systems in the region originating in the western highlands and flowing to the Pacific Ocean. From north to south these are Aliso Creek, San Juan Creek, San Mateo Creek, San Onofre Creek, Santa Margarita River, San Luis Ray River, San Marcos Creek, Escondido Creek, San Dieguito River, San Diego River, Sweetwater River, Otay River, and the Tijuana River. Most of these streams are interrupted in character having both perennial and ephemeral components due to the rainfall pattern in the region. Surface water impoundments capture flow from almost all the major stream. Four ASBS are located in the San Diego Region: Irvine Coast (also located in the Santa Ana Region) (#33), La Jolla (#29), Heisler Park (#30), and San Diego-Scripps (#31).

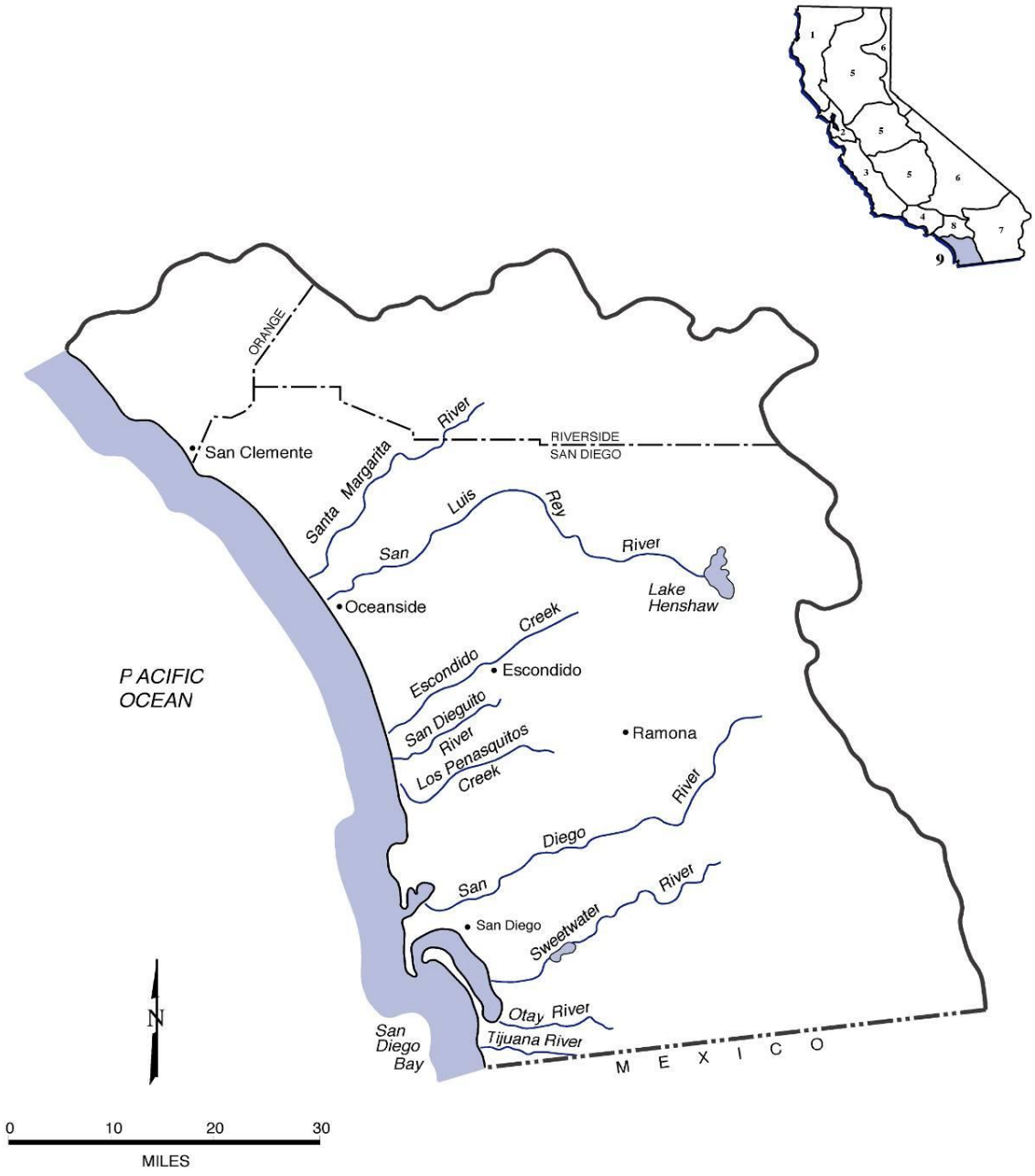


Figure 25. San Diego Region Hydrologic Basin.

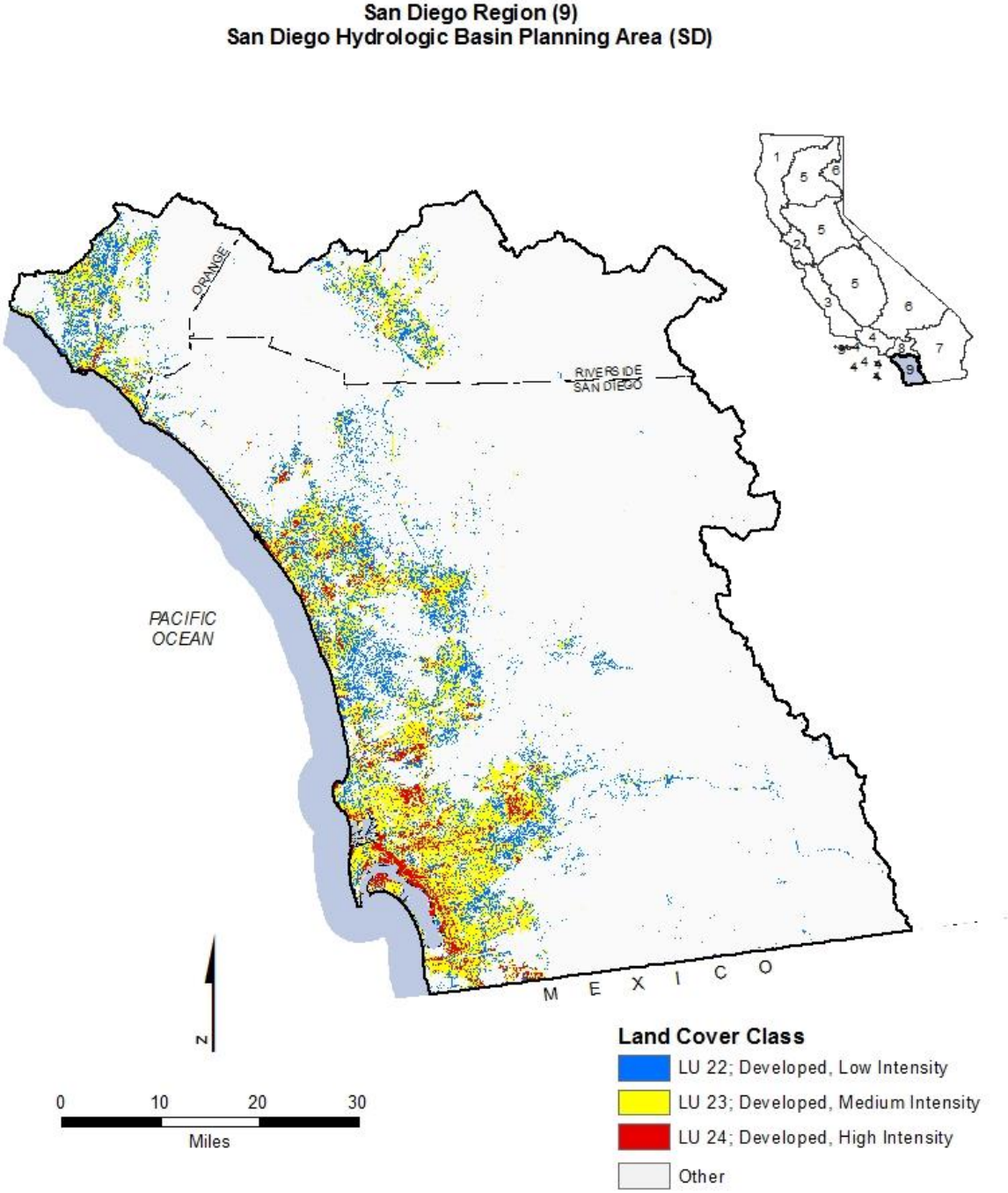


Figure 26. San Diego Region Developed Land Coverage.

4 ANALYSIS OF ISSUES AND CONSIDERATIONS

This section describes the major amendment-related issues identified during the scoping and development process, and provides a discussion of the State Water Board's rationale for the final Trash Amendments as currently proposed in this Final Staff Report. Each issue discussion is organized as follows:

Issue: A brief question framing the issue.

Current Conditions: A description of how the Water Boards currently act on the issue, where applicable.

Considerations: For each issue or topic, at least two considerations are provided. Each consideration is evaluated with respect to the program needs and the appropriate sections within Division 7 of the California Water Code. The considerations presented here also inform the requirement to analyze the reasonable range of alternatives to the project to avoid or reduce any potentially significant adverse environmental impacts, as described in Section 8.

Recommendation: In this section, State Water Board's recommended consideration (or combination of considerations) is identified and proposed for adoption.

4.1 Issue 1: How should the Trash Amendments define "trash"?

Current Conditions:

Waste and litter are currently defined in California law. As defined by the California Water Code, "waste" includes:

> "Sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal." (§ 13050(d))

The California Government Code defines "litter" as:

> "All improperly discarded waste material, including, but not limited to, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials, thrown or deposited on the lands and waters of the state, but not including the properly discarded waste of the primary processing of agriculture, mining, logging, sawmilling, or manufacturing." (§ 68055.1(g))

Considerations:

1. **No Project: No definition.** Each Water Board would define "trash" for itself in its respective basin plans. This option potentially would result in a wide variety of definitions, and result in a failure to achieve statewide consistency. Therefore, this approach is not recommended.

2. **Define "trash" by using Basin Plans, California Government Code, and the California Water Code.** This definition would combine the definitions of "litter" in the California Government Code and "waste" in the California Water Code to include litter, waste, and types of trash including but not limited to plastic, expanded styrene, cigarette butts, wood, glass, cardboard, metal, and green waste. The resulting definition would read as follows:

   Trash *means all improperly discarded solid material from any production, manufacturing, or processing operation including, but not limited to, products, product packaging, or containers constructed of plastic, steel, aluminum, glass, paper, or other synthetic or natural materials.*

   This definition includes smaller trash, such as preproduction plastics and other materials. These small forms of trash have an impact on beneficial uses and should be addressed by the objective. This approach is recommended.

3. **Define "trash" by using the California Government Code and the California Water Code, and include size limitation to definition consistent with current technology.** This definition would combine the definitions of "litter" in the California Government Code, with "waste" in the California Water Code to include litter, waste, and other debris of concern such as plastic, expanded styrene, cigarette butts, wood, cardboard, metal, and green waste. The definition would state that it only applies to trash greater than 5 mm in size, consistent with full capture systems.

   Trash *means all improperly discarded solid material over 5 mm in size from any production, manufacturing, or processing operation including, but not limited to, products, product packaging, or containers constructed of plastic, steel, aluminum, glass, paper, or other synthetic or natural materials.*

   The drawback to including a size limitation is that it does not effectively address smaller trash, such as preproduction plastic and other materials that have an impact on beneficial uses. Therefore this approach is not recommended.

Recommendation: Adopt a definition of "trash" with no size limitation (Consideration 2).

4.2 Issue 2: What type of water quality objective for trash should be considered?

The U.S. EPA must approve objectives in statewide water quality control plans. Once the objectives have been approved, they become federally mandated and enforceable. Water quality objectives can be narrative or numeric with discrete targets. A narrative objective is as enforceable as a numeric objective.

Current Conditions:

Although language varies by each regional water board, in general, the basin plans contain narrative water quality objectives that prohibit the presence of floatable, solid, suspended, and settleable materials in amounts that adversely affect beneficial uses.

There are currently 33 existing narrative objectives in the eleven different water quality control plans that apply to the discharge of trash to state waters.

In addition to the water quality standard, as discussed above, the 303(d) listing methodology defines trash as a "nuisance"[11] and states that water segments may be listed as impaired if there is a "significant nuisance condition compared to reference conditions." The existing trash TMDLs establish numeric targets of zero trash based on the interpretation of the narrative water quality objectives in the Los Angeles and Colorado River Basin Plans. Thus, the water bodies with 303(d) listings for trash are found to lack an assimilative capacity for any amount of trash (Los Angeles Water Board 2000; 2004; 2007a; 2007b; 2007c; 2007d; 2007e; 2007f; 2008g; 2010).

Furthermore, multiple assessment methods, using varying objectives, have been implemented by the Regional Water Boards. Assessment parameters presented in the *Rapid Trash Assessment Method Applied to Waters of the San Francisco Bay Region: Trash Measurements in Streams* included: level of trash, actual number of trash items found, threat to aquatic life, threat to public health, illegal dumping and littering, and accumulation of trash (Surface Water Ambient Monitoring Program 2007).

Considerations:

1. **No Project: No new objective.** The Water Boards would have to continue to rely on existing basin plans and Ocean Plan, which do not contain trash-specific narratives; instead the objectives refer to trash-related pollutants and other pollutants such as foam and sediment in general terms (i.e., floatable, suspended, and settleable material). Similarly, there currently is no water quality objective specifically for trash in the Ocean Plan and ISWEBE Plan. In addition, the existing regional water boards' basin plan narrative objectives lack consistency. Therefore, this approach is not recommended.

2. **Create a statewide numeric water quality objective of "zero trash."** This objective would create a new statewide numeric water quality objective of "zero trash." The numeric objective could be adopted in individual basin plans by regional water boards or by the State Water Board in statewide water quality control plans (i.e., the Ocean Plan and ISWEBE Plan).

   Specifically, this objective would require that all surface waters not contain trash. Effectively, this performance-based numeric objective would result in an absolute

[11] According to California Water Code (§ 13050(m)), nuisance is defined as anything which meets all of the following requirements:

(1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property.

(2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.

(3) Occurs during, or as a result of, the treatment or disposal of wastes.

trash discharge prohibition. Such a discharge prohibition could be implemented in phases to address high trash generating areas first. These areas would be determined by either: (1) state-defined categorical areas or, (2) municipalities or responsible jurisdictions.

A numeric objective of "zero trash" could be an efficient regulatory tool because the measurement of compliance is clearly defined. This option would establish a quantitative objective as a statewide numeric standard. While zero trash is the desirable goal, it may not be a feasible numeric objective. On a feasible level, a single piece of trash found in a water body may or may not constitute impairment, and it may or may not be aesthetically unpleasing. Therefore, this approach is not recommended.

3. **Standardize the existing narrative objectives that vary among the water quality control plans.** Individual regional water boards have existing narrative objectives in their basin plans associated with trash. The standardized narrative objective would reflect the concept that the waters of the state shall be *free from floatable, settleable, and suspended materials.*

   Under this alternative, the State Water Board would adopt an order directing each Regional Water Board to adopt a standardized narrative objective in each basin plan through individual amendments. This would be a complex and resource intensive activity, and there is no guarantee that the narrative objectives ultimately adopted would be consistent from region to region. Therefore, this approach is not recommended.

4. **Establish a new statewide narrative objective specifically for trash in the Ocean Plan and ISWEBE Plan.** This option would create a new statewide narrative objective specifically addressing trash with standardized language in all statewide water quality control plans. The objective would be amended into the Ocean Plan and ISWEBE Plan. Statewide water quality control plans supersede basin plans, thereby eliminating the necessity of adopting a narrative objective in each basin plan. This would make more efficient use of Water Board resources. Therefore, this approach is recommended.

Recommendation: Adopt a statewide narrative water quality objective specifically for trash in the Ocean and ISWEBE Plan (Consideration 4).

4.3 Issue 3: Which surface waters should the Trash Amendments be applicable to?

Current Conditions:

There are 73 listed impairments for trash in California waters. TMDLs have been developed to date in the Los Angeles Region and the Colorado River Basin Region. In the Colorado River Basin, a TMDL for trash was adopted for the New River (at the international boundary) that included a numeric target of zero trash (Colorado River Basin Water Board 2006). In the Los Angeles Region, fifteen TMDLs were adopted for trash and debris by either the Los Angeles Water Board or U.S. EPA (Los Angeles

Water Board 2000; 2004; 2007a; 2007b; 2007c; 2007d; 2007e; 2007f; 2008g; 2010, U.S. EPA 2012a).

Considerations:

1. **No Project.** Water Boards may address trash control through a mixture of regional planning efforts and water body specific TMDLs. Because No Project would not meet the trash objectives to provide a consistent statewide program to address trash in state waters, this approach is not recommended.
2. **Applicable to all surface waters.** In this option, the Trash Amendments would apply to all surface waters covered by the Ocean Plan and the ISWEBE Plan. This would provide statewide consistency for trash control. However, permittees within the Los Angeles Region have made much progress towards compliance with the existing trash and debris TMDLs, so superseding the Los Angeles Water Board's Basin Plan could be counter-productive. Therefore, this approach is not recommended.
3. **Applicable to all surface waters with the exception to those covered by an existing trash and debris TMDL within the jurisdiction of the Los Angeles Water Board.** In this option, the Trash Amendments would apply to all surface waters covered by the Ocean Plan and the ISWEBE Plan with the exception of those covered by an existing trash and debris TMDLs within the Los Angeles Region. The fifteen trash TMDLs in the Los Angeles Region would continue to have more stringent provisions than the final Trash Amendments. This option is not intended to reduce statewide consistency for trash controls, as the Trash Amendments would propose similar set of compliance measures as the trash and debris TMDLs. Instead, the final Trash Amendments would build on lessons learned from the extensive trash control efforts in the Los Angeles Region. However, the final Trash Amendments would direct the Los Angeles Water Board to reconsider the scope of its trash TMDLs within one year of the Trash Amendments' effective date to consider focusing its permittees' trash control efforts on high trash generation areas rather than all areas within each permittee's jurisdiction. The reconsideration would occur for all existing trash TMDLs, except for the Los Angeles River Watershed and Ballona Creek Trash TMDLs, because those two TMDLs are approaching final compliance deadlines of September 30, 2016 and September 30, 2015, respectively. Because this approach creates statewide consistency regarding the concept of trash controls in state water while acknowledging the progress made in the Los Angeles Region, this approach is recommended.

Recommendation: The Trash Amendments should apply to all surface waters in the state with the exception of those waters within the jurisdiction of the Los Angeles Water Board that have existing trash and debris TMDLs. The Los Angeles Water Board should reconsider the scope of all existing trash TMDLs, except for the Los Angeles River Watershed and Ballona Creek Trash TMDLs (Consideration 3).

4.4 Issue 4: What should the scope of a discharge of prohibition for trash, including preproduction plastic[12], be?

Current Conditions:

There is no statewide prohibition of discharge of trash to state waters. Instead, various programs exist in parts of the state to address the elimination of trash from state waters. Region-specific NPDES permits, such as in the San Francisco Bay Region, have existing requirements to minimize trash, and trash and debris TMDLs in the Los Angeles Region have similar implementation measures. Trash control measures can range from structural controls (e.g., partial capture systems and full capture systems) to institutional controls (e.g., increased street sweeping, enforcement of litter laws, and adoption of municipal ordinances prohibiting specific products), and combinations of controls.

Through AB 258, the "Preproduction Plastic Debris Program" became effective in the California Water Code (§ 13367) on January 1, 2008. This tasks the Water Boards to implement a program to control discharges of preproduction plastics from point and nonpoint sources. Preproduction plastic can be improperly discharged during transport, packaging, and processing when proper housekeeping practices are not employed. Once spilled or released into the environment, their small size of 5 mm or less can preclude effective cleanup. In compliance with Water Code section 13367(d), the IGP contains minimum BMPs to regulate plastic manufacturing, handling, or transportation facilities.

Considerations:

1. **No Project.** The Water Boards would continue to regulate trash through either TMDLs and/or region-specific NPDES permit requirements. For preproduction plastics, the Water Boards would continue to implement AB 258 through the IGP permit, which does not cover discharges from locations such as railroad trans-loading stations. Because No Project would not meet the trash objectives to provide a consistent statewide program to address trash in state waters, this approach is not recommended.

2. **Implement the water quality objective through a conditional prohibition of discharge.** Under this option, the water quality objective for trash would be implemented through a conditional prohibition of discharge of trash directly into waters of the state or where trash may ultimately be deposited into waters of the state. The prohibition of discharge would apply to both permitted and non-permitted dischargers. Non-permitted dischargers would either comply with prohibition of discharge or be subject to direct enforcement action. Dischargers with NPDES storm water permits (i.e., MS4 Phase I, MS4 Phase II, Caltrans, IGP, and CGP), WDRs, and waivers of WDRs would comply with the prohibition through a plan of implementation contained in the respective permits. The plan

[12] California Water Code section 13367 states that "preproduction plastic includes plastic resin pellets and powdered coloring for plastics."

of implementation would provide options for permittees to choose from a variety of treatment and institutional controls to minimize the discharge of trash.

There are a wide variety of treatment and institutional controls that have been found to be effective in reducing or eliminating trash in waters. Treatment control options include full capture systems, partial capture systems, LID, and multi-benefit projects. Institutional controls are non-structural BMPs, such as street sweeping, trash collection, anti-litter educational outreach programs, and regulatory source controls.

In addition, the prohibition of discharge would specifically apply to the discharge of preproduction plastic by all manufacturers and transporters of preproduction plastics, and manufacturers that use preproduction plastics.

The conditional prohibition of discharge allows for the implementation of the water quality objective for trash through Water Board permits or through direct enforcement of non-permitted dischargers. Additionally, this option provides flexibility to permittees to determine the most effective means of trash control in light of site conditions, types of trash, and the resources available for maintenance and operation. Therefore, this approach is recommended.

3. **Outright prohibition of discharge for preproduction plastic.** This option would prohibit the discharge of preproduction plastic to waters of the state. Preproduction plastic can be as small as one millimeter, and as such it would not be caught by full capture system. Once released into the environment, drainage system, or waterway, their small size prevents effective cleanup. Because this approach does not build upon implementation efforts achieved in the IGP, a stronger alternative is recommended below.

4. **Use both the existing Industrial General Permit and an outright prohibition of discharge for preproduction plastic.** In this option, the prohibition of discharge for preproduction plastic could continue to be implemented through the IGP, as well as directly through the enforcement of the prohibition of discharge on facilities and industrial activities that are not subject to the IGP. This provides the widest and most efficient approach to controlling the discharge of preproduction plastic, and is therefore recommended.

Recommendation: The Trash Amendments should implement the water quality objective through a conditional prohibition of discharge of trash (Consideration 2). The existing IGP and an outright prohibition of discharge should be used to address the prohibition of discharge of preproduction plastic (Consideration 4).

4.5 Issue 5: Where should trash control measures be employed?

Current Considerations:

In the Los Angeles Region, fifteen TMDLs were adopted for trash and debris by either the Los Angeles Water Board and/or U.S. EPA (Table 16). The existing trash and debris TMDLs targets all land uses within the scope of the TMDL, regardless of the

trash generations rates within those land uses. In 2001, the City of Los Angeles Watershed Protection Division performed a geographical analysis of trash generation in the City of Los Angeles. The study showed that trash is most severe in Downtown LA and nearby communities where commercial, industrial, and residential land uses are predominant (City of Los Angeles 2002). According to the 2004 Trash Baseline Monitoring results in Los Angeles County, the highest trash-generating land-uses were high-density residential, mixed use urban, commercial, and industrial land uses in the Ballona Creek and Los Angeles River Watershed, respectively (County of Los Angeles Department of Public Works 2004a; 2004b).

Under the San Francisco Bay MRP, permittees are developing and implementing Short-Term Trash Load Reduction Plans. The Bay Area Stormwater Management Agencies Association (BASMAA) worked collaboratively with the San Francisco Bay MRP permittees to develop a regionally consistent method to establish baseline trash loads from their municipality. The resulting BASMAA Baseline Trash Generation Rates Project assisted the permittees in establishing a baseline by which to demonstrate progress towards trash load reduction goals. The project determined that the four land uses with the highest trash generation rates are (1) retail and wholesale, (2) high-density residential, (3) K-12 schools, and (4) commercial/services and industrial. It also developed a conceptual model for trash generation rates (EOA, Inc. 2012a). The project focused on developing baseline generation rates and categorizing the permittees' jurisdictions as high, medium, and low trash generation rates. This allows the San Francisco Bay MRP permittees to strategize and focus trash controls to effectively achieve trash load reductions. The results of the Los Angeles and San Francisco studies indicate that trash is generated at higher rates in highly populated and/or highly visited areas that attract high volumes of vehicular and pedestrian traffic.

Considerations:

1. **No Project: No prioritization regarding the location of trash controls.** In this option, there is no prioritization regarding of the location of trash control for permitted storm water dischargers. This option lacks statewide clarity and consistency for the permitting authority and permittees. Therefore, this approach is not recommended.
2. **All storm drains in all land uses regardless of trash generation rates.** In this option, all areas under the jurisdiction of the permitted storm water dischargers would require trash controls. This option would provide statewide consistency, specifically with the trash and debris TMDLs in the Los Angeles Region. However, trash reduction measures would be required in locations with low trash generation rates, and therefore very little negative impact. This option would be resource intensive when compared to the benefit derived. Therefore, this approach is not recommended.
3. **Focus trash controls on areas with high trash generation rates.** In this option, implementation of the prohibition of discharge would be focused on areas with high trash generation rates.

   The studies from the development and implementation of the trash and debris TMDLs in the Los Angeles Region found that the land uses of highest trash

generation are high density residential, commercial, and industrial land uses (County of Los Angeles Department of Public Works 2004a, Los Angeles Regional Water Board 2007f). While each municipality and country has different land use definitions and codes, an approximate 15-30 dwelling units per acre definition for high density residential is offered as an example of the dwelling unit standards used in local general plans by the Governor's Office of Planning and Research in its 2003 General Plan Guidelines (Governor's Office of Planning and Research 2003). For MS4 Phase I and Phase II permittees high trash generating land use areas or what the final Trash Amendments refer to as "priority land uses" would include: high density residential, commercial, industrial, mixed urban, and public transportation areas. Additionally, a permittee would have the ability to propose alternative equivalent land uses to continue to focus limited resources to the areas with the highest trash generation rates.

Caltrans has jurisdiction over a linear system, and the high trash generating areas under its jurisdiction are different than the priority land uses for a municipality. Based on Caltrans trash studies and consultation (Caltrans 2000, Caltrans 2004), the Adopt-A-Highway program, and the Keep California Beautiful program, the "significant trash generating areas" for Caltrans could include areas such as: (1) highway on- and off- ramps in high-density residential, commercial, mixed urban, and industrial land uses; (2) rest areas and park-and-rides; (3) state highways in commercial and industrial land uses; and (4) other mainline highway segments that can be identified by Caltrans through pilot studies and/or surveys.

In comparison to MS4 Phase I, MS4 Phase II, and Caltrans permittees, industrial facilities or construction sites with NPDES permits are substantially smaller in size. Thus, IGP and CGP permittees would have the ability to control trash for all storm water discharges and authorized non-storm water discharges in their jurisdiction.

Because the Los Angeles and San Francisco studies teach that prioritization of the areas with the highest trash generation rates will substantially reduce the discharge of trash to surface waters while maximizing the allocation of trash control resources, this approach is recommended.

Recommendation: Focus trash controls to areas with high trash generation rates (Consideration 3).

4.6 Issue 6: What implementation measures should be employed for trash control in NPDES storm water permits (i.e., point sources)?

Current Considerations:

Trash is currently addressed through the water quality objectives in basin plans and water body specific TMDLs (Table 15). There is a lack of statewide consistency regarding how the water quality objectives are implemented in NPDES permits. Each NPDES storm water permit has a varying set of requirements, ranging from minimal institutional controls, such as street sweeping and education, to control of the entire jurisdiction's discharge of trash through treatment and institutional controls.

For example, in the Los Angeles Region, fifteen TMDLs were adopted for trash and debris by either the Los Angeles Water Board and/or U.S. EPA (Table 16). Implementation plans for point source responsible parties to achieve waste load allocations vary slightly but are based on phased percent reduction goals that can be achieved either implementing full capture systems within all land uses or implementing other treatment and/or non-structural BMPs to comply with the TMDL. Under the San Francisco Bay MRP, compliance with the discharge prohibition and trash-related receiving water limitations is met through a timely implementation of control measures, BMPs and any trash reduction ordinances or mandatory full trash capture systems to reduce trash loads from MS4s by set percent reductions over three phases.

State Water Board MS4 Phase II (Order No. 2013-001) and Caltrans (Order No. 2012-0011) permits have street sweeping and education requirements. The CGP prohibits the discharge of any debris from construction sites, and encourages the use of more environmentally safe, biodegradable materials on construction sites to minimize the potential risk to water quality. The IGP contains minimum BMP provisions to regulate the discharge of preproduction plastic from manufacturing, handling, or transportation facilities.

Considerations:

1. **No Project: No establishment of implementation measures for NPDES storm water permits.** An absence of implementation measures in the final Trash Amendments would mean that no trash control guidance would be provided to the Water Boards when reissuing their NPDES storm water permits. MS4 Phase I and MS4 Phase II permits could require the reduction of trash in their storm water discharges to the Maximum Extent Practicable. IGP and CGP permittees would be left to a myriad of different standards depending on the site, receiving waters, listing and TMDL status, and basin plan language, resulting in unclear permitting requirements and the potential for trash discharges to not be effectively prohibited.

   This approach is not recommended because of the potential lack of consistency regarding trash control across NPDES storm water permits.

2. **Require the sole use of full capture systems.** Under this option, all permitted storm water dischargers would implement the use of full capture systems to reduce and eliminate trash discharged into the water bodies of California. The definition of full capture systems could mirror the same definition as provided in the Los Angeles River Watershed trash TMDL (Los Angeles 2007f). The definition is as follows:

   > *"A full capture system is treatment control (either a single device or a series of devices) that traps all particles that are 5 mm or greater, and has a design treatment capacity that is either: a) of not less than the peak flow rate, Q, resulting from a one-year, one-hour, storm in the subdrainage area, or b) appropriately sized to, and designed to carry at least the same flows as, the corresponding storm drain."*

Installation of full capture systems would demonstrate compliance for the relevant drainage area, provided that the full capture systems were adequately designed, sized, installed, and maintained. The installation of a full capture system by a permittee would not establish any presumption that the system was adequately sized, and the Water Boards would reserve the right to review sizing or other data in the future to validate that a system would satisfy the definition of a full capture system. Maintenance records indicating trash loads removed and overall system efficiency would be reported regularly and made available for inspection by the regional water boards and public viewing.

The maintenance of such systems on private properties, especially those which have been demonstrated to have extensive internal drainage systems with multiple storm drain inlets (e.g., schools, sports complexes, residential/ industrial/ commercial developments) would also be addressed in this option.

This option would require that all NPDES storm water permittees to install full capture systems without other options to control trash. This option does not take into consideration particular conditions within jurisdictions or sites. This could cause an undue burden on areas and communities that would better benefit from focusing their resources on more cost-effective methods of trash control. Therefore, this approach is not recommended.

3. **Require the sole use of institutional controls.** In this option, NPDES storm water permits would contain requirements that permittees comply with the prohibition of discharge through the sole use of institutional controls (such as street sweeping, clean-up events, education programs, additional public trash cans and increased collection frequency expanded recycling and composting efforts, and adoption of regulatory source controls). This option would meet the goal of preventing trash from entering state waters and provide statewide consistency. However, permittees should have flexibility to determine the most effective means of controlling trash because of particular conditions of sites, types of trash, and the resources available for maintenance and operation. Therefore, this approach is not recommended.

4. **Establish a dual alternative "compliance Track" approach.**

In this option, implementation of the prohibition of discharge would be tailored for each NPDES storm water permit category.

MS4 Phase I and Phase II Permits

For MS4 Phase I and Phase II permits, implementation of the prohibition of discharge would focus on areas with high trash generation rates. Based on Los Angeles and San Francisco studies, the municipal areas with high trash generation rates are identified as "priority land uses". The "priority land uses" would consist of high density residential, industrial, commercial, mixed urban and public transportation stations or equivalent alternative land uses.

As each Phase I and Phase II MS4 has individual site-specific characteristics, permittees could comply with the prohibition of discharge of trash through one of two compliance Tracks.

Under Track 1, permittees would install a network of full capture systems for all storm drains that capture runoff from one or more "priority land uses".

Under Track 2, permittees would install, operate, and maintain a combination of controls (structural and institutional), as long as the combination of controls achieves the same performance results as compliance under Track 1, namely full capture system equivalency. Structural controls could include any combination of full capture systems, other treatment controls, such as LID, and multi-benefit projects.

Caltrans

For the Caltrans permit, implementation of the prohibition of discharge world focus on "significant trash generating areas", which may include area such as: on- and off-ramps in "priority land uses", rest areas and park-and-rides, state highways in commercial and industrial land uses and other segments identified by Caltrans. As Caltrans is a linear system, exclusive use of full capture systems might not be appropriate to achieve the water quality objective for trash. Caltrans would comply with requirements similar to Track 2 to develop and execute an implementation plan to install, operate, and maintain full capture systems, other treatment controls (e.g., partial capture systems and LID), or institutional controls, and/or multi-benefit projects.

IGP/CGP

In comparison to jurisdictions under MS4 Phase I, Phase II and Caltrans permits, industrial facilities or construction sites with NPDES permits are substantially smaller in size. Thus, IGP and CGP permittees would comply with an outright prohibition of discharge trash from all storm water discharges and authorized non-storm water discharges. If the industrial or construction permittee, however, can demonstrate that it is unable to comply with the outright prohibition of discharge, then the permittee may comply through one of two Tracks.

Under Track 1, the permittee would install, operate, and maintain full capture systems for storm drains that service the facility or site.

Under Track 2, the permittee would develop and execute an implementation plan that committed to any combination of controls, such as full capture systems, other treatment controls (e.g. partial capture systems and LID), institutional controls, and/or multi-benefit projects to achieve the same performance results as installation, operation and maintenance of full capture systems would achieve.

A dual alternative "compliance Track" approach tailored to each NPDES storm water permit category would provide flexibility to permittees to determine the

most effective means of controlling trash while taking into consideration particular site conditions, types of trash, and the available resources for maintenance and operation. This option is therefore recommended.

Recommendation: Implement the water quality objective and prohibition of discharge with a dual alternative "compliance Track" approach tailored to each NPDES storm water permit category (Consideration 4).

4.7 Issue 7: What implementation measures should be employed for trash from nonpoint sources (such as open space recreational areas)?

Current Conditions:

Currently, many open space recreational land uses, such as beaches, marinas, campgrounds, and picnic areas experience intensive use and littering. These are often not covered by MS4 permits.

In the Los Angeles Region, the fifteen trash and debris TMDLs address discharges from nonpoint sources through load allocations. At present, the load allocations are implemented through a conditional waiver from waste discharge requirements. Nonpoint source dischargers may achieve compliance with the load allocations by implementing a minimum frequency of assessment and collection/best management practice (MFAC/BMP) program. The MFAC/BMP Program includes an initial minimum frequency of trash assessment and collection and suite of structural and/or non-structural BMPs.

Considerations:

1. **No Project: No establishment of implementation measures for nonpoint sources.** Without statewide implementation measures for trash control for nonpoint sources, nonpoint sources of trash would continue to either lack implementation provisions or contain load allocation within individual water body TMDLs. Because No Project would not meet the trash objectives to provide a consistent statewide program to address trash in state waters, this approach is not recommended.

2. **Assessment, collection and management practices for trash control would be required of all nonpoint source dischargers.** Nonpoint source dischargers would be required to develop and implement a program of management practices for control of trash within a WDR or a waiver of WDR. Management practices could include enforcement of litter laws, education, recycling programs, more or better trash receptacles, and/or more frequent servicing of trash receptacles. Assessment, collection and management practices may include initial and annual assessments of trash generation, a determination of collection frequency necessary to meet the water quality objective, and a suite of structural and/or nonstructural management practices that prevent trash from entering or accumulating in waters of the state.

   The discharger would be required within a WDR or a Waiver of a WDR to facilitate the initial annual assessment collection and disposal of all trash found in or adjacent to surface waters, including along shorelines, channels, or

river/stream banks, and would implement an initial suite of BMPs based on current trash management practices in land areas that are found to be sources of trash to a water body.

Considering regions with large publicly owned rural areas, it may be most appropriate to address nonpoint source trash on federal and state-owned lands through State Water Board Management Agency Agreements or Memoranda of Understanding with the corresponding land management agencies and/or through statewide waivers or discharge permits.

In regards to responsible jurisdictions, the responsibility of collection and disposal of trash extends to upstream land owners as well as shoreline owners.

One drawback to requiring this approach in all jurisdictions is that most open space land usage is not a significant generator of trash. Requiring this level of effort for large swaths of public land would not be cost-effective or result in significant trash reductions. Certain high usage nonpoint source areas, however, such as beaches, marinas, campgrounds, and picnic areas, often experience substantial littering. Therefore, this approach is not recommended.

3. **Trash control measures for nonpoint source dischargers would be each Water Boards' discretion.** Statewide, nonpoint source discharges of trash cause less of an impact to state water than do point sources; however, at the local or regional level nonpoint sources can be a substantial source of trash. These areas may include high usage campgrounds, picnic areas, beach recreation areas, and marinas, which can be subject to WDRs or conditional waivers of WDRs. These types of areas would be assessed by the Water Boards to determine if trash controls are necessary. For such areas determined to require trash controls within a WDR or waiver of a WDR, management practices could include enforcement of litter laws, education, recycling programs, more or better trash receptacles, and/or more frequent servicing of trash receptacles. This approach is recommended as it targets regional regulation of the discharge of trash from locations with high trash generating rates.

Recommendation: Trash control measures for nonpoint sources that generate large amounts of trash at the local or regional level would be at the Water Boards' discretion (Consideration 3).

4.8 Issue 8: How should the Trash Amendments address time schedules?

Current Conditions:

In accordance with the California Water Code section 13242, implementation programs for achieving water quality objectives shall include a description of necessary actions, a time schedule for actions to be taken, and a description of surveillance to be undertaken to determine compliance with the water quality objectives. All compliance schedules in NPDES storm water permits (i.e., MS4 Phase I, MS4 Phase II, Caltrans, IGP, and CGP) need to follow the Policy for Compliance Schedules in NPDES Permits as adopted by the State Water Board on April 15, 2008 (Resolution No. 2008-0025). TMDL compliance schedules are adopted by the applicable regional water board.

Considerations:

1. **No Project: No time schedule.** This option would leave policies and practices as they are currently under permits and TMDLs. If this option is selected, then compliance schedules would continue to vary among regions, resulting in statewide inconsistency. Therefore, this approach is not recommended.

2. **Require immediate compliance.** Immediate compliance could be required for all permittees except those operating under existing trash and debris TMDLs in the Los Angeles Region. This alternative may be unpopular with permittees that are unfamiliar with trash monitoring and implementation and may find immediate compliance difficult to achieve; their inability to meet the proposed objective may result in enforcement actions that might otherwise have been avoided through the adoption of compliance schedules. Therefore, this approach is not recommended.

3. **Adopt a single statewide time schedule for all categories of permits.** This alternative would designate a single specific time schedule during which all permittees, regardless of category, would be required to implement necessary controls in order to achieve compliance. For example, all permittees may be required to come into full compliance within a single permit cycle. This might require a planning and funding burden for municipalities committing to the installation of certified full capture systems. Due to the differences in the size and scope of the jurisdiction of storm water permittees, this approach is not recommended.

4. **Adopt different statewide time schedules for different categories of permits.** This alternative would designate specific amounts of time during which different categories of NPDES permittees would be required to achieve compliance. For MS4 permittees with regulatory authority over priority land uses, compliance schedules would be set at ten years of the effective date of the first implementing permit with a cap of fifteen years from the effective date of the Trash Amendments for achieving full compliance. Ten years would allow for up to two permitting cycles. The second permit could build on the first permit with lessons learned from permittees' trash control efforts. The fifteen year cap provides certainty of a full-compliance end date, and also gives Water Boards up to five years to incorporate trash requirements into their respective permits. For Caltrans, the time schedule would be based on the effective date of the implementing NPDES permit with a ten-year compliance schedule. For permittees under the IGP and CGP, full compliance would be accomplished as specified by the time schedule set in the first implementing permit. To allow for differences in NPDES permit types, this approach is recommended.

Staff Recommendation: Adopt different statewide time schedules for different categories of permits (Consideration 4).

4.9 Issue 9: Should time extensions be provided for employing regulatory source controls?

Current Conditions:

California is the leader in implementing local ordinances with goals of reducing trash. The two types of local government ordinances focus on single-use disposable items, such as expanded polystyrene foam and single-use carryout bags. At least 65 jurisdictions have either banned extended polystyrene foam food containers completely or have prohibited use by government agencies or at public events. A few jurisdictions that have banned or partially banned polystyrene for takeout food packaging, which includes the City and County of San Francisco, Los Angeles County, Sonoma County, the City of Malibu, and the City of Berkeley. In 2006, the City and County of San Francisco passed a ban on single-use carryout bags in grocery stores and pharmacies. Since then, at least 72 local jurisdictions adopted city and county ordinances for single-use carryout bags. Most ordinances have a paper bag fee (10-25 cents) as well as a ban on plastic due to the desire to promote reusable bags as the bag of choice.

Considerations:

1. **No Project: No allowance for time extensions to create incentives for employing regulatory source controls.** Regulatory source controls are a subset of the suite of institutional controls that a MS4 permittee may utilize to control trash under Track 2. Therefore, additional time for final compliance may not be warranted to create an incentive for adoption of an ordinance that may also be employed for final compliance with the prohibition of discharge.

2. **Provide a time extension for new regulatory source control ordinances.** The aim of adopting regulatory source controls is to remove a specific type of item from the waste stream. Regulatory source controls require intensive collaboration and support among local governments, public, and retailers. This process can take several years to adopt and become effective. Providing a time extension for final compliance would provide an additional incentive for a local government to pass regulatory source control ordinances. Under this consideration, the time extension would only be afforded to municipal permittees that pass an ordinance following the effective date of the Trash Amendments. Limiting the time extension to only new regulatory source controls would have the effect of penalizing municipalities that have already adopted regulatory source control ordinances to control trash.

3. **Provide a time extension for regulatory source control ordinances enacted up to three years prior to the effective date of the Trash Amendments.** Because regulatory source controls require intensive collaboration and support among local governments, public, and retailers, and can take several years to adopt and become effective, providing a time extension for final compliance would provide an additional incentive for a local governments to adopt regulatory source control ordinances. Extending the time extension to municipalities that have passed regulatory source controls prior to the effective date of the Trash Amendments provides statewide consistency and equal benefits to all municipal

permittees who have taken effort to reduce trash with regulatory source controls. For the time extension to be granted, however, a regulatory source control would need to take effect with three years of the effective date of the Trash Amendments in order to achieve performance results with the compliance schedule.

Recommendation: This Issue is being proposed as an option for State Water Board consideration in order to receive public comment and feedback on the pros and cons of this Issue. After receiving public input on the potential advantages and disadvantages to this approach, the recommendation is to not allow time extensions for a MS4 permittee's adoption of regulatory source controls (Consideration 1).

4.10 Issue 10: How should the Trash Amendments structure monitoring and reporting of trash control efforts?

Current Conditions:

In accordance with the California Water Code section 13242, implementation programs for achieving water quality objectives shall include a description of necessary actions, a time schedule for actions to be taken, and a description of surveillance to be undertaken to determine compliance with the water quality objectives.

Considerations:

1. **No Project: No monitoring or reporting required above what is already required.** This approach would be consistent with any monitoring or reporting that is currently required by regional water boards. Although it would not cost permittees any additional resources, it would be insufficient to evaluate compliance with the final Trash Amendments and would run counter to California Water Code section 13242. Therefore, this approach is not recommended.

2. **Monitoring and cleanup in receiving waters by all permittees, regardless of method of compliance.** There are several approaches to monitoring that may be employed:

    a. **Minimum frequency of assessment and collection (MFAC).** The MFAC program includes an initial minimum frequency of trash assessment and collection. The MFAC program would include collection and disposal of all trash found in the receiving waters and shoreline. The initial minimum frequency may be established based on seasonal use of the area, regionally-specified storm sizes, and after major public events at certain locations, such as the county fairgrounds.

    b. **Establishment of Daily Generation Rate.** An area's trash discharges may be estimated using a mass balance approach, based on the daily generation rate for the specific area. The daily generation rate is the average amount of trash deposited within a specified drainage area over 24-hour period. The daily generation rate can be used in a mass balance to estimate the amount of trash discharged during a rain event.

The daily generation rate may be determined by local jurisdictions from direct measurement of trash deposited in the drainage area during any 30-day period from June 22nd to September 22nd of a given year and recalculated every year thereafter. This three-month period is assumed to encompass high outdoor activity when trash is most likely to be deposited on the ground.

Accounting of daily generation rate as well as trash removal via street sweeping, catch basin clean outs, garbage and cigarette butt receptacles, etc. would be tracked in a central spreadsheet or database to facilitate the calculation of discharge for each rain event. The spreadsheet and/or database would be available to the Water Boards for inspection during normal working hours. The database/spreadsheet system would allow for the computation of calculated discharges and could be coordinated with enforcement.

c. **Alternate compliance monitoring programs.** Water Boards could approve, at their discretion, alternative compliance monitoring programs upon finding that an alternative program would provide a scientifically-based estimate of the amount of trash discharged from the storm drain system.

These approaches are not prescriptive as each permittee will have a unique implementation strategy, and the monitoring approach needs to be suited for each strategy.

3. **Monitoring and reporting tailored to the type of compliance.**

As the compliance options vary among NPDES permits for storm water discharges, the monitoring and reporting options could be tailored to the type of compliance. Within this option under consideration, the balance between the need for consistency and flexibility would be achieved through standardized objectives in the monitoring program. The final Trash Amendments could establish minimum monitoring and reporting provisions, and Water Boards could include more extensive provision in implementing permits.

MS4 permittees complying under Track 1 would provide a report to the applicable Water Board demonstrating installation, operation, and maintenance of full capture systems on an annual basis. MS4 permittees complying under Track 2 would develop and implement annual monitoring plans to demonstrate effectiveness of the controls and compliance with full capture system equivalency. This requires that permittees collect monitoring data about existing trash levels prior to implementation of institutional controls to set a baseline for comparison to trash levels after implementation of controls. Monitoring reports developed by MS4 Permittees should consider the following questions:

1) What type of and how many treatment controls, institutional controls, and/or multi-benefit projects have been used, and in what locations?

2) How many full capture systems have been installed (if any), and in what locations have they been installed, and what is the individual and cumulative area served by them?
3) What is the effectiveness of the total combination of treatment controls, institutional controls, and/or multi-benefit projects employed by the permittee?
4) Has the amount of trash discharged from the MS4 decreased from the previous year? If so, by how much? If not, explain why.
5) Has the amount of trash in the MS4's receiving water(s) decreased from the previous year? If so, by how much? If not, explain why.

Caltrans should develop and implement annual monitoring plans to demonstrate effectiveness of the controls and compliance with full capture system equivalency. Monitoring reports developed by Caltrans should consider the following questions:

1) What type of and how many treatment controls, institutional controls, and/or multi-benefit projects have been used, and in what locations?
2) How many full capture systems have been installed (if any), and in what locations have they been installed, and what is the individual and cumulative area served by them?
3) What is the effectiveness of the total combination of treatment controls, institutional controls, and multi-benefit projects employed by Caltrans?
4) Has the amount of trash discharged from Caltrans' MS4 decreased from the previous year? If so, by how much? If not, explain why.
5) Has the amount of trash in the receiving waters decreased from the previous year? If so, by how much? If not, explain why.

Industrial and construction permittees would not have specific monitoring requirements. The controls and measures used to comply with the prohibition of discharge can be required to be reported and included in the Storm Water Pollution Prevention Plan.

The tailored approach would provide flexibility to Water Board permit writers to design monitoring programs that reflect the compliance methods elected by permittees along with regional characteristics. For statewide consistency, all monitoring programs would be striving to answers the same fundamental questions. Therefore, this approach is recommended.

Recommendation: Monitoring and reporting should be tailored to the type of compliance (Consideration 3).

5 REASONABLY FORESEEABLE METHODS OF COMPLIANCE

The final Trash Amendments do not specify a manner of compliance and accordingly, the actual compliance strategies would be selected by the local agencies and other permittees. Although the final Trash Amendments do not mandate the manner of compliance, the State Water Board's SED for the proposed project is required to include an analysis of the reasonably foreseeable methods of compliance with the project (see 23 CCR 3777; Pub. Res Code § 21159). Several of the reasonably foreseeable methods of compliance are well known, and a discussion of a reasonable range of these methods of compliance and design parameters is presented below. In addition, the possible environmental effects that could be caused by these compliance methods are presented in Section 6.

During the development of the final Trash Amendments, numerous stakeholder and public meetings were held during which the manner of compliance was discussed. Some of the most likely measures discussed included treatment controls (e.g., partial capture systems and full capture systems) and institutional controls (e.g., increased street sweeping, enforcement of litter laws, and development of municipal ordinances prohibiting food packaging with polystyrene materials). This section provides a description of storm water systems and of sites where treatment controls might be placed to comply with the final Trash Amendments. In addition, this section discusses treatment control alternatives, such as catch basin inserts and vortex separators, and institutional control alternatives, such as street sweeping, public education, and ordinances.

5.1 Treatment Controls - Storm Drain Systems

Underground storm drains are typically designed to carry the runoff from up to a ten-year storm event. Open channels are typically designed to carry the runoff from up to a 50-year storm event, and in some cases, this design flow rate is increased to accommodate debris laden flows. The rate of runoff a drain can safely convey, expressed in cubic feet per second, is called its peak capacity. While a drain's capacity would not diminish over the years, the amount of runoff generated by a given storm event can increase over the years. This potential increase could be due to a number of factors including: an increase in the amount of development and impervious surfaces within the tributary area, and the addition of smaller upstream tributary drains that deliver runoff more quickly to the collecting drain. The potential for such increases at a particular site is a consideration in the applicability of a particular treatment control method of compliance with the final Trash Amendments.

Storms are commonly referred to by their "frequency." For example: a one-year storm event, having a long-term probability of happening at least once a year is a very common occurrence. On the other hand, a 50-year storm event is a much rarer occurrence, with a long-term probability of occurring only once in 50 years. The actual rate of runoff from storms of a given size or frequency depends on a number of factors, including the intensity and duration of the rainfall, the size of the tributary area, the topography, the soil types within the tributary drainage area, and the overall connected imperviousness of the tributary area.

5.1.1 Reasonably Foreseeable Methods of Compliance: Design and Installation of Devices for Trash Removal

The treatment controls likely to be used for compliance with the final Trash Amendments are devices that would be installed in existing storm drains. Older storm drains may be physically limited in expansion capability and maintenance right-of-way and the complying permittees must consider these factors when designing and siting new trash devices within existing facilities.

A factor to consider when designing and siting devices is drain capacity. For instance, if a treatment control is to be installed mid-drain, the storm drain system must have sufficient capacity, or the storm drain must be modified to maintain sufficient capacity. Start-of-pipe devices such as catch basin opening screens and excluders or end-of-pipe devices such as trash racks, fabric mesh socks and wire screens, may have less impact on hydraulic drain capacity under certain hydraulic conditions than devices installed mid-pipe. The smaller the amount of flow a retrofitted device or system must treat; the less hydraulic impact it will have on the storm drain system as a whole.

In addition, the definition of “full capture system” in the final Trash Amendments includes reference to capturing trash particles that are the size of 5 mm or greater. The 5 mm size limit is approximately the diameter of a pencil or cigarette butt. A smaller particle size implies a smaller filtering mesh or screen size, and a smaller mesh or screen size implies more resistance to the flow passing through it. When designing and siting controls, assuming that a certain percentage of a screen would be blocked by trash during a storm event, the total area of the screen openings would have to be larger than the area of the drain’s cross section by that percentage.

In addition to the requirement of removing litter with a size of 5 mm, the design of a full capture system should take into account reliability and performance sensitivity under varying loads. Based on current industry standards for existing facilities, a typical full capture system is expected to meet the following minimum criteria:

- It must not adversely affect the level of flood protection provided by the drainage system;
- It should be vector-resistant, or not pond water for more than 48 hours after the end of a storm;
- It should not worsen water quality by re-suspending trash, sediments, or bacteria, or by leaching heavy metals or semi-volatile organic compounds;
- It should have no plastic or fiberglass interior parts that would break or shatter in the path of direct flow;
- Its pipes, conduits and vaults should not be more than 32 feet below ground, and should be easily accessible by a vacuum truck hose for clean-out, be reasonably accessible by a qualified maintenance worker, have provisions for confined space entry and safety guard rails around the rim; and
- It should provide means to block off the inflow and tail water backflow to isolate the device for safe maintenance and repair of the unit.

5.1.2 Catch Basins and Catch Basin Inserts

Treatment controls likely to be used for compliance with the final Trash Amendments may include installation of catch basins or inserts within existing catch basins. A catch basin or storm drain inlet is an inlet to the storm drain system that typically includes a grate or curb opening where storm water enters the catch basin, and a sump to capture sediment, debris and associated pollutants. They are also used in combined sewer watersheds to capture floatables and settle some solids. Catch basins act as pretreatment for other treatment practices by capturing large particles. The performance of catch basins at removing sediment and other pollutants depends on the design of the catch basin (e.g., the size of the sump), and routine maintenance to retain the storage available in the sump to capture sediment.

Catch basins are used in drainage systems throughout the United States. Many catch basins, however, are not designed for trash capture. Ideal application of catch basins as a reasonably foreseeable method of compliance with the final Trash Amendments is as pretreatment to another storm water management practice. Retrofitting existing catch basins may help to improve their performance substantially. A reasonably foreseeable method of compliance may include a simple retrofit of catch basins to ensure that all catch basins have a hooded outlet to prevent floatable materials, such as trash and debris, from entering the storm drain system.

The performance of catch basins is related to the volume in the sump (i.e., the storage in the catch basin below the outlet). Optimal catch basin sizing criteria which relates all catch basin dimensions to the diameter of the outlet pipe.

Maintenance of the installed catch basins is expected to include trash removal if a screen or other debris capturing device is used, and removal of sediment using a vactor truck. Operators will need to be properly trained in catch basin maintenance. When sediment fills greater than 60 percent of their volume, catch basins reach steady state. Therefore, storm flows may then bypass treatment and may also re-suspend sediments trapped in the catch basin. Regular clean-outs will typically be required to retain the volume in the catch basin sump available for treatment of storm water flows.

At a minimum, catch basins would be expected to be cleaned once or twice per year to maintain effectiveness (Aronson et al. 1993). Two studies suggest that increasing the frequency of maintenance can improve the performance of catch basins, particularly in industrial or commercial areas. One study of 60 catch basins in Alameda County, California, found that increasing the maintenance frequency from once per year to twice per year could increase the total sediment removed by catch basins on an annual basis (Mineart and Singh 1994). These results suggest that, at least for industrial uses, more frequent cleaning of catch basins would improve removal efficiency. The cost of operation and maintenance would, however, be expected to increase with installation of catch basins (or inserts).

Within a catch basin, a "catch basin insert" may also be perforated metal screens placed horizontally or vertically within a catch basin. There are a multitude of inserts of various shapes and configurations. One device suitable for compliance with the final Trash Amendments is a grated plastic box or metal screen that fits directly into the

curbside catch basin. As the storm water passes through the box, trash, rubbish, and sediment remain in the box while storm water exits.

Metal screening inserts may be deployed in a vertical or horizontal configuration within the catch basin for the retention of trash. These inserts would be expected to maximize much of the existing catch basin volume and concurrently pass through flow.

Catch basin screens design is expected to be open to curb flow in order to reduce the potential for flooding during wet weather. For example, American Storm Water has a catch basin screen with an automatic retractable screen gate design which can be adjusted to "un-lock" and open up to storm water curb flow from 20 percent to 60 percent of curb height. This device which is termed the “Surf Gate” is also designed with a special "locking" application, which keeps children safe and large debris from getting into the catch basin.

Grate inserts may also be utilized as a compliance method and are typically found in parking lots, alleys, and sloping streets. Inserts installed in these basins mainly capture trash smaller than an inch due to the standardized grating spacing. Inserts designed for curb opening basins would be best suited for capturing larger debris like water bottles and plastics bags, as the opening under the curb may range from four to eight inches.

5.1.3 Vortex Separation Systems

The treatment controls likely to be used for compliance with the final Trash Amendments may include installation of vortex separation system units. Vortex separation systems units are designed to capture almost all trash deposited into a storm drain system. A vortex separation system unit diverts the incoming flow of storm water and pollutants into a pollutant separation and containment chamber. Solids within the separation chamber are kept in continuous motion, and are prevented from blocking the screen so that water can pass through the screen and flow downstream. Solid pollutants including trash, debris and coarse sediments are retained in a centrally located solids catchment chamber with the heavier solids ultimately settling into the base of the unit or sump. This would be expected to be a permanent device that would be retrofitted for oil separation as necessary. Outfitting a large drainage with a number of large vortex separation system units may be less costly than using a larger number of small vortex separation system units.

An example of vortex separation system technology is the Continuous Deflective Separation unit, developed by Continuous Deflective Separation Technologies, Inc. When applied to storm water, the Continuous Deflective Separation unit is designed to capture and retain sediments, floatable and settleable trash and debris over a wide range of flow conditions (up to 300 cubic feet per second). The fine screens used in storm water applications vary in size from 1.2 – 4.7 millimeter (0.048 - 0.185 inches). The Continuous Deflective Separation units are placed underground and would be expected to be utilized in highly urbanized areas where space is limited. In general, a Continuous Deflective Separation unit typically occupies about 4-1/2 square feet of surface area for each cubic feet per second that it treats, with the bulk of the installation being well below grade. The solids would be removed using a vactor truck, a removable basket, or a clam shell depending on the user's preference and size of the unit. For new installations, it is expected that continued monitoring of the condition of

the unit would be required after every runoff event for the first 30 days. Based on the behavior of the unit relative to storm events, inspections may be scheduled on projections using storm events vs. pollutant buildup. For ongoing operation, unit inspections are expected to occur at least once every 30 days during the wet weather season. As part of the expected maintenance, floatables would be removed and the sump cleaned when the sump is above 85 percent full. Also, at least once a year, it is expected that the unit would be pumped down and the screen carefully inspected for damage and to ensure that the screen is properly fastened.

The City of San Jose analyzed the relative capital and operation/maintenance cost of small devices (connector pipe screens and automatic retractable screens at the curb) and the hydrodynamic separator capturing trash from an area of 1000 acres, over 10 and 20-year time frames, accounting for repair and replacement of small units and increases in labor costs. The City of San Jose found that small devices were more economical in the first decade, but the cost advantage disappears in the second decade (San Francisco Estuary Partnership 2014).

5.1.4 Trash Nets

A treatment control likely to be used for compliance with the final Trash Amendments may include installation of trash nets. These are devices that use the natural energy of the flow to trap trash, floatables and solids in disposable mesh nets. One type of trash net, developed by Fresh Creek Technologies, Inc. may be reasonably foreseeable as a method of compliance because it was certified by the Los Angeles Water Board on April 29, 2004 for use on the Los Angeles River Watershed TMDL (Dickerson 2004). Currently, three modular models are available from Fresh Creek Technologies, Inc.:

- The *In-Line Netting* TrashTrap® model is a modular chamber containing the capture apparatus for holding the disposable nets. The system is installed in-line with the outfall pipe. A prefabricated chamber minimizes site work and cost. Inline units are underground and out of sight, particularly well-suited for densely populated locations.
- The *End-of-Pipe Netting* TrashTrap® model is installed at the end of the pipe. These units are often installed as a retrofit to an existing outfall structure. When this opportunity exists, the End-of-Pipe system is highly cost effective.
- The *Floating Netting* TrashTrap® model is a modular pontoon structure that floats at the end of the outfall. Floating units are an economical solution where site conditions (minimum water depth of two feet and a relatively sheltered site) permit its use. They are often installed with only minor modifications to the existing site.

Model selection and sizing of trash nets would be based on site-specific criteria including peak volume, peak velocity, and trash/floatables volume. Modularity and capacity of the installation would be achieved by varying the number of nets in the system. Installations, consistent with current practice, are expected to range from single net units to systems with 10 nets handling flows above 3,000 cubic feet per second. The standard mesh net would handle flows up to 30 cubic feet per second or 22 million gallons per day and velocities up to five feet per second at the mouth of the

net. A truck with a hoist for changing the nets, and a container for holding the full nets would be expected for servicing trash nets. A crew of two accomplishes the net change out in a matter of a few minutes. Road access to the site would be required for the service vehicle.

The *End-of-Pipe* nets are another control that is reasonably foreseeable as a method of satisfying the final Trash Amendments because of the low cost, the ease of maintenance, and also because the devices can be relocated after a set period at one location (provided the pipe diameters are the same). With limited funding, installation could be spread over several land uses and lead to valuable monitoring results. For smaller systems the total installation time can be as short as one day. Since the devices require attachment to the end of a pipe, this can severely reduce the number of locations within a drainage system that can be monitored. In addition, these nets cannot be installed on very large channels (seven feet in diameter is the maximum).

5.1.5 Gross Solids Removal Devices

A treatment control likely to be used for compliance with the final Trash Amendments may include installation of Gross Solids Removal Devices. Several types of these devices were developed by Caltrans to be retrofitted into existing highway drainage systems or implemented in future highway drainage systems. Gross Solids Removal Devices are structures that would remove litter and solids five millimeters (0.25 inches nominal) and larger from the storm water runoff using various screening technologies. Overflow devices would be expected to be incorporated; usual design of the overflow release device is based upon the design storm for the roadway. Though designed to capture litter, the devices would also be expected to capture vegetation debris. The devices described below are generally limited to accept flows from pipes 30 inches in diameter and smaller.

To assess the feasibility of utilizing Gross Solids Removal Devices, Caltrans developed a Pilot Program with multiple phase pilot studies. A pilot study generally consisted of one or more devices that were developed from concept, advanced through design and installation, and placed in service for two years of testing to evaluate overall performance (Caltrans 2003). Based on the Pilot Program, three types of Gross Solids Removal Devices have been shown the most promising and are therefore considered within the reasonably foreseeable methods of compliance: linear radial and two versions using an inclined screen. On October 7, 2004, the Los Angeles Water Board certified two Caltrans' Gross Solids Removal Devices, Linear Radial – Configuration 1 (LR1 I-10) and Inclined Screen – Configuration 1 (IS1 SR-170), to comply with the Ballona Creek and Los Angeles River Trash TMDLs (Bishop 2004).

Linear Radial Device

This device is relatively long and narrow, with flow entering one end and exiting the other end. It is suited for narrow and flat rights-of-way with limited space. It utilizes modular well screen casings with 5 mm (0.25-inch nominal) louvers and is contained in a concrete vault, although it also could be attached to a headwall at a pipe outfall. While runoff flows enter into the screens, they pass radially through the louvers and trap litter in the casing. A smooth bottom to convey litter to the end of the screen sections is required, so a segment of the circumference of each screen is uncovered. The

louvered sections have access doors for cleaning with vacuum truck or other equipment. Under most placement conditions the goal would be to capture within the casing one year's volume of litter. This device has been configured with an overflow/bypass for larger storm events and if the unit becomes plugged.

Inclined Screen Devices

Two Inclined Screen Devices have been developed. Each device requires about one meter (three feet) of hydraulic head and is better suited for fill sections. In the Type 1 device, the storm water runoff flows over the weir and falls through the inclined bar rack. The screen has five millimeter maximum spacing between the bars. Flow passes through the screen and exits via the discharge pipe. The trough distributes influent over the inclined screen. Storm water pushes captured litter toward the litter storage area. The gross solids storage area is sloped to drain to prevent standing water. This device has been configured with an overflow/bypass for larger storm events and if the unit becomes plugged. It has a goal of litter capture and storage for one year. The Type 2 Inclined Screen only comes in a sloped sidewall version.

5.2 Institutional Controls

The non-structural actions likely to be used for compliance with the final Trash Amendments include institutional controls. These types of actions are methods to control trash loading to state waters and may include enforcement of existing litter laws, increased street sweeping, cleaning of storm water conveyance structures, such as catch basins and storm drain inlets, and ordinances.



Institutional controls may also offer societal benefits that are associated with reducing litter in our city streets, parks and other public areas. For example, institutional controls employed by the City of Los Angeles for the Los Angeles River Watershed trash TMDL have demonstrated a 12.5 percent reduction in the total WLA (Black & Veatch 2012). Institutional controls can typically be implemented in a relatively short period of time. The capital investment required to implement institutional controls is generally less than for full capture systems.

The final Trash Amendments define "institutional controls" as follows:

> Institutional controls are non-structural best management practices (i.e., no structures are involved) that may include, but not be limited to, street sweeping, sidewalk trash bins, collection of the trash, anti-litter educational and outreach programs, producer take-back for packaging, and ordinances.

"Regulatory source controls" was previously included within the definition of institutional controls in the proposed Trash Amendments as one of the several treatment controls that could be utilized by MS4 permittees with regulatory authority over priority land uses to comply with the prohibition of trash under Track 2. In turn, "regulatory source controls" was previously defined in the proposed Trash Amendments as:

> Institutional controls that are enforced by an ordinance of the municipality to stop and/or reduce pollutants at their point of generation so that they do not come into contact with storm water. Regulatory source controls could consist of, but not be limited to, bans of single use consumer products.

Regulatory source controls were generally proposed as a tool for MS4 permittees to enact ordinances. A primary type of regulatory source control contemplated by this Policy was a bag ban ordinance to prohibit retailers from distributing carry-out plastic bag. The proposed final Trash Amendments omit regulatory source controls (and its definition) as a method for demonstrating Track 2 compliance.

The proposed Final Staff Report retains "ordinances," however, as a permissible type of institutional control an MS4 permittee could employ to achieve compliancy with Track 2 (even though the proposed final Trash Amendments removed "regulatory source controls" as a permissible method). Contrary to ordinances or laws that prohibit distribution of plastic carry-out bags, which are typically accompanied with requirements and/or incentives to utilize reusable bags to avoid a product-substitution effect (such as Senate Bill 270), other types of product bans enacted by an ordinance, such as take-out items, may involve a substitution of the banned item. Mere substitution would not result in reduced trash generation if such product substitution would be discarded in the same manner as the banned item. Any such product ban enacted by an ordinance that would not reduce trash would not assist in achieving compliance. It is possible that an MS4 permittee's adoption of other types of ordinances could include anti-litter laws or bans on smoking that would meet the requirements.

5.2.1 Enforcement of Litter Laws

An institutional control that would likely to be used for compliance with the final Trash Amendments would be enforcement of existing liter laws. By enforcing litter laws in sensitive areas or in areas that generate substantial amounts of litter, an ultimate source of trash loading to a given water body would be reduced or eliminated. Ordinances that prohibit litter are already in place in most municipalities. For example, the Los Angeles City Municipal Code prohibits the disposal of trash anywhere such trash could pollute the storm drain system:

> No person shall throw, deposit, leave, cause or permit to be thrown, deposited, placed, or left, any refuse, rubbish, garbage, or other discarded or abandoned objects, articles, and accumulations, in or upon any street, gutter, alley, sidewalk, storm drain, inlet, catch basin, conduit or other drainage structures, business place, or upon any public or private lot of land in the City so that such materials, when exposed to storm water or any runoff, become a pollutant in the storm drain system (City of Los Angeles Municipal Code § 64.70.02.C.1(a)).

Ensuring compliance with existing statewide and local litter laws and ordinances would eliminate the substantial adverse environmental and economic impacts from the litter, and the need for additional structural or institutional controls that generate their own nominal adverse environmental impacts.

5.2.2 Street Sweeping

An institutional control that would likely to be used for compliance with the final Trash Amendments would be continuation of or increasing street sweeping. Street sweeping minimizes trash loading to storm drain systems and water bodies by removing trash from streets and curbs. Maintaining a regular street sweeping schedule reduces the buildup of trash on streets and prevents trash from entering catch basins and the storm drain system. Street sweeping can also improve the appearance of roadways and urban areas. There are three types of street sweepers expected to be utilized for compliance with the final Trash Amendments: mechanical, vacuum filter, and regenerative air sweepers (U.S. EPA 2012b).

- Mechanical sweepers use a broom to remove particles from the street curb and a water spray to control dust. The removed particles are carried by a cylindrical broom to a conveyor belt and into a storage hopper (Federal Highway Administration 2012).

- Vacuum-assisted sweepers also use brooms to remove particles. The removed particles, however, are saturated with water and transported by a vacuum intake to the hopper. Vacuum-assisted dry sweepers use a specialized brush that allows the vacuum system to recover almost all particulate matter. A continuous filtration system prevents very fine particulate matter from leaving the hopper and trailing on the street behind the sweeper (Federal Highway Administration 2012).

- Regenerative air sweepers blow air onto the pavement and immediately vacuum it back to entrain and capture accumulated sediments. A dust separation system regenerates air for blowing back onto the pavement (Federal Highway Administration 2012).

No definitive independent studies have yet been staged to determine the best sweeping system (U.S. EPA 2012b). It is expected, however, that local agencies may use a combination of types of street sweeper to maximize efficiency (CASQA 2003a). In the Los Angeles Region, use of certain sweeper types is dictated by South Coast Air Quality Management District Rule 1186, which requires local agencies to acquire or use only respirable particulate matter certified sweepers beginning January 1, 2000. Furthermore, Rule 1186.1 requires local agencies to acquire alternative fuel or less polluting street sweepers beginning July 1, 2002 (South Coast Air Quality Management District 2006).

Increasing the frequency of street sweeping in areas with high traffic volume and trash accumulation would further reduce trash loading to the waterways. Increases in street sweeping are expected before the rainy season begins. A successful street sweeping program would be expected to include accurate recordkeeping of curb-miles swept, proper storage and disposal of street sweepings, regular equipment maintenance, and

parking policies that restrict parking in problematic areas and notify residents of sweeping schedules (CASQA 2003a).

Using modern and efficient street sweepers may reduce the need for other structural storm water controls and may prove to be more cost-effective than certain structural controls, especially in more urbanized areas with greater areas of pavement (U.S. EPA 2012b).

5.2.3 Storm Drain Cleaning

Another institutional control that would likely to be used for compliance with the final Trash Amendments would be continuation of or increasing cleaning of storm drain systems. Routine cleaning of the storm drain system reduces the amount of trash entering water bodies, prevents clogging, and ensures the flood control capacity of the system. Cleanings may occur manually or with pump eductors, vacuums, or bucket loaders. A successful storm drain cleaning program would be expected to include regular inspection and cleaning of catch basins and storm drain inlets, increased inspection and cleaning in areas with high trash accumulation, accurate recordkeeping, cleaning immediately prior to the rainy season to remove accumulated trash, and proper storage and disposal of collected material (CASQA 2003a).

5.2.4 Public Education

An additional institutional control that would likely to be used for compliance with the final Trash Amendments would be continuation of or increasing public education programs. Public education can be an effective implementation alternative to reduce the amount of trash entering water bodies. The public is often unaware that trash littered on the street ends up in receiving waters, much less the cost of abating it.

Community outreach is expected to be one way to educate the public about the effects of littering on the quality of receiving waters. Local agencies would provide educational materials to the public via television, radio, print media (e.g., brochures, flyers, and community newsletters), information hotlines outreach to educators and schools, community event participation, and support of volunteer monitoring and cleanup programs. Storm drain inlet stenciling would be another means of educating the public about the direct discharge of storm water to receiving waters and the effects of littering and dumping on receiving water quality. Stenciling can be conducted in partnership with other agencies and organizations to garner greater support for educational programs (U.S. EPA 2005).

Public education programs are already in place in some jurisdictions. Under the Los Angeles County Municipal Storm Water Permit, for example, permittees are required to implement educational storm water outreach programs (Order No. R4-2012-0175). The residential component of this program includes:

- Conducting storm water pollution prevention public service announcements and advertising campaigns.
- Distribute public education materials regarding the proper handling of waste materials.

- Maintaining a storm water website that includes educational material and opportunities for the public to participate in storm water pollution prevention and clean-up activities.
- Using culturally diverse educational strategies.

Public education materials have already been developed and are available through the Erase the Waste campaign, sponsored by the Water Boards. Erase the Waste is a public education program, working to reduce harmful storm water pollution and improve the environment of the region's coastal and inland communities. The campaign started in Los Angeles County, and materials produced during its three-year run have now been packaged for state and nationwide use. It is built around the theme, *Erase the Waste* – a positive, empowering theme that encourages all residents and stakeholders to take ownership of their communities, help reduce and prevent storm water pollution from the local landscape and "become part of the pollution solution."

The Water Boards have made available the *California Storm Water Toolbox*[13] which includes the following tools for residents, community and civic groups, educators, municipalities and public agencies:

- Advertisements, posters, collateral materials and a comprehensive Neighborhood Action Kit in English, Spanish, Chinese, Korean and Vietnamese – a comprehensive "how-to" guide to community-focused pollution prevention.
- A landmark Water Quality Service Learning Model for grades four through six that meets the state's curriculum standards.
- The Water Quality Detectives After-School Program, an adapted version of the curriculum for middle school and after school setting.
- The California Storm Water Resource Directory, an online inventory of storm water materials developed in partnership with CASQA.

5.2.5 Ordinances

Ordinances are a municipal regulation and type of institutional control. Ordinances can range from litter laws, smoking bans, to product bans. Ordinances may focus on eliminating or reducing the sources of trash by removing potential products from the waste stream. These methods focus on preventing pollution versus employing methods of controlling pollution. Across California, cities, counties, and the state have litter laws and other existing ordinances. In addition to the enforcement of existing litter laws, reasonably foreseeable methods of achieving compliance could include new litter laws and other ordinances. Contrary to ordinances or laws that prohibit distribution of plastic carry-out bags, which are typically accompanied with requirements and/or incentives to utilize reusable bags to avoid a product-substitution effect (such as Senate Bill 270), other types of product bans enacted by ordinance, such as take-out items, may involve a substitution of the banned item. Mere substitution would not result in reduced trash

[13] The *California Storm Water Toolbox* is accessible at: http://www.waterboards.ca.gov/water_issues/programs/outreach/erase_waste/index.shtml#toolbox.

generation if such product substitution would be discarded in the same manner as the banned item. Any such product ban enacted by an ordinance that would not reduce trash would not be an allowable Track 2 method to assist in achieving compliance. It is possible that an MS4 permittee's adoption of other types of ordinances could include mandatory fees on disposable item (like cups) that encourage customers to bring red-usable, and anti-littler laws or bans on smoking that would meet the requirements.

5.3 Overview of Installation, Operation and Maintenance Activities for Trash Treatment Controls

This section discusses the installation, and operation and/or maintenance activities associated with the reasonably foreseeable methods of compliance with the final Trash Amendments. This information should provide a frame of reference in determining potential environmental impacts of these alternatives described in Section 6 (Environmental Effects of the Trash Amendments) and Section 8 (Alternatives Analysis). Some reasonably foreseeable installation activities for compliance with the final Trash Amendments would consist of the installation of improvements to the storm drain system to attain "full capture". These improvements include installation of screens and inserts for catch basins, Gross Solids Removal Devices within the alignment of storm drain pipes, and trash collection nets in storm drain outlets. Temporary impacts to natural resources from these types of installation activities typically include air pollution from dust and construction equipment, increased runoff and soil erosion, and installation noise.

Installation of storm drain improvements to comply with the final Trash Amendments would likely be located throughout the developed areas of the state. The final Trash Amendments provide up to ten years to complete the installation of storm drain improvements. The installation would occur at different locations at different periods. Equipment to be installed would likely include filters, metal screen, fabric nets, and Gross Solids Removal Devices. Some of the equipment would be mounted on small steel structures. Equipment weights range from several hundred pounds to 100,000 pounds, therefore the installation rigs would range from small truck-mounted cranes to larger track-mounted units. The equipment would be electrically connected together by cable or by buss (open air copper or aluminum tubes). The installation would be either through the inlets or outlets or with the piping. Gross Solids Removal Device station sites would typically be finished with fencing around the site.

5.3.1 Storm Drain Improvement Installation Staging and Methods

Most sites for installation activities and staging would be in high density residential, mixed urban, commercial, or industrial areas, as well as public transportation stations, and along portions of State highways. Site preparation would include clearing, grubbing and grading with bulldozers and dump trucks. Access roads would be prepared concurrently with the site operations.

Catch Basin Inserts

Improvements to catch basins are expected to include concrete work, installation of filters within the catch basins and installation of screens at the catch basin inlets. These

activities entail concrete demolition and refinishing and field fabrication methods such as welding and mechanical bolting. These improvements would be located in existing catch basins within existing storm drain systems. Construction of new catch basins is not specifically required to comply with the final Trash Amendments, although damaged catch basins may require replacement or new catch basins may be an element of the discretionary compliance program under Track 2. Existing catch basins are located below sidewalks and streets with openings flush with the curb.

Catch basin improvements may include:

- Removal of manhole cover and accessing bottom of catch basin and manually inserting prefabricated catch basin inserts in the bottom or interior of the catch basin.
- Concrete demolition and removal if the entire catch basin needs replacement.
- Catch basin installation – this task pertains to catch basins that require replacement.
- Concrete drilling and welding – this task is required to install fasteners and bracing for screens and brushes at the storm drain inlets. These screens can be welded onto the installed bracing.
- Concrete finishing – to restore site after installation is completed.

Installation of catch basin improvements would likely require the following types of tools: compressor, hand power tools, hand tools, backhoe, welder, light-duty truck.

Gross Solid Removal Device and Vortex Separation System Installation

Gross Solids Removal Devices would be for new installations that are located in transportation rights of way. These devices are typically fabricated off-site and transported to the site for installation. The installation sites are typically not located in areas of sensitive receptors[14]. Installation activities are expected to include:

- Site Preparation – a flat area of sufficient size to locate a concrete equipment pad is required. Vegetation removal might be required, as well as placement of a gravel sub-base for the area. The site should be selected for access by an equipment crane, maintenance vehicles and trash collection vehicles.
- Fencing – security fencing is generally preferred for water quality treatment systems located within existing structures in watersheds. Chain link fencing is often selected which involves installation of fence poles. Fence screens are often used in areas where a Gross Solids Removal Device causes adverse visual impacts.
- Concrete pad – Gross Solids Removal Devices are generally fabricated as modular units that are transported to the site and bolted to a concrete pad. This

[14] Sensitive receptors include, but are not limited to, hospitals, schools, daycare facilities, elderly housing and convalescent facilities. These are areas where the occupants are more susceptible to the adverse effects of exposure to toxic chemicals, pesticides, and other pollutants.

task involves preparing a level sub-base, placement of rebar and forms, and pouring ready-mix concrete to form a pad of sufficient dimensions to support the Gross Solids Removal Devices.

- Gross Solids Removal Device placement – the Gross Solids Removal Devices are placed onto the concrete with an equipment crane and secured with anchor bolts.
- Pipe fitting/connection – the storm drain conveyance piping is connected to the Gross Solids Removal Device with standard plumbing connects such as unions or joints. The connections are leak tested.
- Utility service – for Gross Solids Removal Devices which require electrical service, wiring from a nearby service connector would be made to a switchbox located on the concrete pad. Appropriate conduit and wiring for outdoor service would be used.

Equipment required to install Gross Solids Removal Devices is expected to include: equipment crane, concrete mix truck, hand power tools, hand tools, backhoe, and light duty truck. Caltrans provided descriptions of installation of Gross Solids Removal Device in the report Phase I Pilot Study – Gross Solid Removal Devices (Caltrans 2003).

Trash Nets

Trash nets would be installed at the outlets of storm drains and channels. These locations are typically located within the interior of the storm drain system where there is limited public access. Installation of trash nets includes field joining techniques and may include concrete repair. Trash net installation is expected to include:

- Preparation of concrete for installation of bracing to hold trash nets. Concrete preparation may entail simple cleaning of the concrete surfaces to patching and resurfacing of areas where the trash nets are to be attached.
- Installation of net bracing – net bracing is typically installed with anchor bolts.
- Attachment of the net to the bracing – simple mechanical devices is used to attach the flexible netting to the metal bracing.

Tools required to install trash netting include: hand power tools, hand tools, backhoe, and light duty truck. Impacts to air quality from installation equipment is expected to be minimal and of a short duration, particularly if equipment is tuned and maintained in good working condition to minimize emissions of criteria pollutants and particulates. Noise impacts are expected to also be short term and are expected to be minimized through installation practices, such as using noise barriers and modified work hours.

5.3.2 Maintenance of Treatment Controls and BMPs

Maintenance activities expected to occur for compliance with the final Trash Amendments would include removing trash from catch basins, Gross Solids Removal Devices, and trash nets and providing any mechanical service and repair that may be required. Because each device is limited in the volume of trash that can be collected, it is likely that relatively light-duty trucks can be used. Additionally, there is opportunity to

consolidate the trash collected from catch basins, Gross Solids Removal Devices, and trash nets with other trash to lessen the impacts associated with transport and disposal of trash collected from storm drain improvements.

The impacts from maintenance activities associated with the final Trash Amendments are expected to be minimized through modified work hours and dust suppression methods. Spoils resulting from installation of storm drain improvements are expected to be in relatively small in quantity. These spoils are expected to be disposed of in licensed facilities.

5.4 Low-Impact Development Controls and Multi-Benefit Projects

The Storm Water Program at the Water Boards encourages the management of storm water as a resource as identified in the California Water Code section 10562. The main objective of treating storm water as a resource is to protect and restore those watershed processes that are critical to watershed health. Multi-benefit projects that infiltrate and treat storm water runoff are encouraged within MS4 Phase I and Phase II permits.

The final Trash Amendments would allow for the use of LID as part of Track 2 implementation. LID approaches attempt to mimic a site's predevelopment hydrology through a series of practices including filtering storm water with natural media, detaining storm water for infiltration into the ground, and retaining water onsite for reuse. LID is often implemented through BMPs, including conservation designs, low impact landscaping, and practices promoting improved infiltration, runoff storage, runoff conveyance, and filtration (Metres 2013).

The final Trash Amendments would also allow for the use of multi-benefit projects as part of Track 2 implementation. Multi-benefit projects should be designed to maximize water supply, water quality, and environmental and other community benefits (Wat. Code § 10562(b)(2)). Multi-benefit projects lead to collaborations with other agencies and stakeholders to develop storm water infrastructure that improves storm water, urban runoff quality, and improve wildlife habitat. Multi-benefit projects should focus on regional and watershed-wide benefits.

While LID and multi-benefit projects have not directly addressed trash as a traditional pollutant in the past, additional measures can be included so that such projects specifically address trash. For example, the City of Anaheim, as part of the Brookhurst Street Improvement Project, converted impervious surfaces into a greenbelt area with an earthen swale that accepts storm flows from the street, acts as a natural treatment system, allows for limited infiltration, and drains to an existing storm drain inlet (City of Anaheim 2010). Trash can get captured within the bioswales, which infiltrates the storm water. A multi-benefit project should separate the storm water from the trash, thus removing the ability for trash to be transported to a receiving water body via storm water. The trash that accumulates within the bioswale should still be removed. To capture the remaining trash in storm water, an insert could be placed in the storm drain inlet to prevent trash from entering the storm water system. Another example of a multi-benefit project could be a retention basin, where the primary function is to recharge the local groundwater aquifer. To capture trash in the retention basin, a trash net at the retention basin overflow could be installed to capture any trash leaving the retention

basin when storm water inflow exceeds the capacity of the retention basin. LID and multi-benefit projects provided many environmental benefits from improved water quality, reduced number of flooding events, restored aquatic habitat, improved groundwater recharge, and enhanced urban aesthetics. By incorporating trash controls into LID and multi-benefit projects, a permittee can address numerous water quality pollutants within the urban and storm water landscape.

6 ENVIRONMENTAL EFFECTS OF TRASH AMENDMENTS

6.1 Introduction

The Water Quality Control/208 Planning Program, found in title 23, California Code of regulations sections 3775-3781 has been certified as an exempt regulatory program by the Secretary for Resources (Cal. Code Regs., tit. 14,§ 15251, subd. (g)) and, therefore, the State Water Board is exempt from the requirements of preparing separate documents in compliance with CEQA. However, the State Water Board must conduct an environmental analysis of its actions in a draft SED as part of its approval or adoption according to California Code of Regulations, title 23, section 3777 (see also, Pub. Res. Code § 21159). This Final Staff Report is being used to satisfy this requirement.

CEQA's "certified regulatory program" exemption is limited, however, and the State Water Board in the SED must still comply with CEQA's overall objectives to: inform the decision makers and the public about the potentially significant environmental effects of a proposed project; identify ways that significant adverse environmental impacts may be mitigated; and prevent significant, avoidable adverse environmental impacts by changing the proposed project or requiring mitigation measures. There are certain guiding principles that are contained in the CEQA Guidelines that help to inform the Water Board's certified regulatory process and preparation of the draft SED:

> Forecasting: Drafting an EIR or preparing a Negative Declaration necessarily involves some degree of forecasting. While foreseeing the unforeseeable is not possible, an agency must use its best efforts to find out and disclose all that it reasonably can (Cal. Code Regs., tit. 14, § 15144).
>
> Speculation: If, after thorough investigation, a Lead Agency finds that a particular impact is too speculative for evaluation, the agency should note its conclusion and terminate discussion of the impact (Cal. Code Regs., tit. 14, § 15145).
>
> Specificity: the degree of specificity required in an Environmental Impact Report [or an Environmental Impact Report – equivalent document, such as an SED] will correspond to the degree of specificity involved in the underlying activity which is described in the Environmental Impact Report" (Cal. Code Regs., tit. 14, § 15146)
>
> Standards for Adequacy: An EIR (or Negative Declaration) should be prepared with a sufficient degree of analysis to provide decision makers with information which enables them to make a decision which intelligently takes account of environmental consequences. An evaluation of the environmental effects of a proposed project need not be exhaustive, but the sufficiency of an EIR (or Negative declaration) is to be reviewed in the light of what is reasonably feasible. The courts have looked not for perfection but for adequacy, completeness, and a good faith effort at full disclosure (Cal. Code Regs., tit. 14, § 15151).

This section of the Final Staff Report, as well as the Environmental Checklist in Appendix B, identifies and evaluates the potential environmental impacts that may arise from final Trash Amendments and the reasonably foreseeable methods of compliance.

It also discusses mitigation, where applicable, for the identified potentially significant impacts (Cal. Code Regs., tit. 23, § 3777(b)). The implementation alternatives for achieving compliance with the final Trash Amendments are described in detail in Section 8 of this document. Impacts believed to be potentially significant are described in this section, while impacts that are considered less than significant or where there is no effect are described in Environmental Checklist contained in Appendix B. The following resource areas are included in this section, each of which includes a description of potential impacts, and mitigations.

- Section 6.2 Air Quality
- Section 6.3 Biological Resources
- Section 6.4 Cultural Resources
- Section 6.5 Geology/Soils
- Section 6.6 Greenhouse Gas Emissions
- Section 6.7 Hazards and Hazardous Materials
- Section 6.8 Hydrology/Water Quality
- Section 6.9 Land Use/Planning
- Section 6.10 Noise and Vibration
- Section 6.11 Public Services
- Section 6.12 Transportation/Traffic
- Section 6.13 Utilities/Service Systems

6.1.1 Impact Methodology

Any potential environmental impacts associated with the final Trash Amendments depend upon the specific compliance methods selected by the complying permittee, most of whom will be public agencies subject to their own CEQA obligations (see Pub. Res. Code § 21159.2). This document identifies broad mitigation approaches that could be considered at a statewide level. Consistent with Public Resources Code section 21159 and the State Water Board's certified regulatory program, the document does not engage in speculation or conjecture, but rather considers the potential environmental impacts of the final Trash Amendments and reasonably foreseeable methods of compliance, the feasible mitigation measures, and feasible alternatives (including alternative means of compliance) which would meet the project objectives and avoid or reduce the potentially significant impacts of the proposed project.

Within each of the subsections listed above, this document evaluates the potentially significant impacts of the proposed project and each implementation alternative relative to the subject resource area. The implementation alternatives evaluated in this document are evaluated on a statewide level for impacts for each resource area. Project-level analysis is expected to be conducted by the appropriate public agencies prior to implementation of project specific methods of compliance with the final Trash Amendments. The environmental analysis in this document assumes that the project specific methods of compliance with the final Trash Amendments would be designed, installed, and maintained following all applicable state and local laws, regulations, and ordinances. Several handbooks are available and currently used by municipal agencies

that provide guidance for the selection and implementation of BMPs (CASQA 2003a; 2003b, Water Environment Research Foundation 2005, Caltrans 2010).

6.1.2 Level of Analysis

The State Water Board is the lead agency for the final Trash Amendments, while the responsible agencies identified in Section 2.11 (Agencies Expected to use this Staff Report in their Decision Making and Permits) may be the lead agency for CEQA compliance for approval and implementation of a project specific method of compliance with the final Trash Amendments.

The State Water Board does not specify the actual means of compliance by which permittees choose to comply with the final Trash Amendments. However, as required by the State Water Board's certified regulatory program, this draft SED analyzes the potential environmental impacts of the final Trash Amendments and the reasonably foreseeable methods of compliance on a statewide level. The specificity of the "activity" described in this draft SED related to the reasonably foreseeable methods of compliance is of a general nature and the level of analysis of the potentially significant adverse environmental effects is commensurate with that level of detail. At the time of approval of a project-specific compliance project where the detail of the method of compliance is known, a project-level environmental analysis may be performed by the local approval agency.

Project-level impacts of the reasonably foreseeable methods of compliance will necessarily vary depending on the choice of compliance and the size, location, and type of discharger and the environmental resources in and around the project site. It would be speculative to estimate the specific impacts of the final Trash Amendments caused by implementation of a project-specific compliance method. It is possible that, at a specific site with particularly sensitive environmental resources, implementation with compliance measures in either in Track 1 or 2 could cause potentially significant impacts as compared to baseline conditions. Since it is speculative to estimate the type, size, and location of any particular compliance method (e.g., type of construction activities and type of resources adversely affected by those activities), this evaluation makes no attempt to quantify the impacts associated with implementation or maintenance of a particular compliance method.

Per the requirements of the State Water Board's environmental regulations, the resource analysis in this section includes:

- An identification of any significant or potentially significant adverse environmental impacts of the proposed project;
- An analysis of reasonable alternatives to the project and mitigation measures to avoid or reduce any significant or potentially significant adverse environmental impacts; and
- An environmental analysis of the reasonably foreseeable methods of compliance, including:
    - An identification of the reasonably foreseeable methods of compliance with the project;

- An analysis of any reasonably foreseeable significant adverse environmental impacts associated with those methods of compliance;
- An analysis of reasonably foreseeable alternative methods of compliance that would have less significant adverse environmental impacts; and
- An analysis of reasonably foreseeable mitigation measures that would minimize any unavoidable significant adverse environmental impacts of the reasonably foreseeable methods of compliance. (23 CCR § 3777)

6.1.3 Environmental Setting

CEQA directs that the environmental setting normally be used as the baseline for determining significant impacts of a proposed project (Cal. Code Regs., tit.14, § 15125, subd. (a)). Section 3 presents a broad overview of the environmental setting for the state of California related to the final Trash Amendments. As such, the environmental setting and baseline for determining impacts is presented at a general level as each regional water board and permittee may address trash with a range of treatment and institutional controls. The following resource sections present additional specific setting information relevant to the assessment of environmental impacts of the final Trash Amendments.

6.2 Air Quality

Daily emissions and pollutant concentrations are two ways to quantify air pollution. The term “emissions” means the quantity of pollutant released into the air and has unit of pounds per day (lbs /day). The term “concentrations” means the amount of pollutant material per volumetric unit of air and has unit of parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$).

Criteria Pollutants

The Air Resources Board has established state ambient air quality standards (state standards) to identify outdoor pollutant levels considered safe for the public. After state standards are established, state law requires Air Resources Board to designate each area as attainment, nonattainment, or unclassified for each state standard. The area designations, which are based on the most recent available data, indicate the healthfulness of air quality throughout the state. In addition to state standards, the federal Clean Air Act requires U.S. EPA to set national ambient air quality standards (federal standards or national standards). The Air Resources Board makes area designations for ten pollutants: ozone, suspended particulate matter (PM10 and PM2.5), carbon monoxide, nitrogen dioxide, sulfur dioxide, sulfates, lead, hydrogen sulfide, and visibility reducing particles. Ambient air quality standards define clean air, and are established to protect even the most sensitive individuals in our communities. An air quality standard defines the maximum amount of a pollutant that can be present in outdoor air without harm to the public's health.

The gaseous criteria pollutants, particulate matter, and toxic air contaminants, and the associated adverse health effects of these air quality contaminants are summarized below.

Carbon Monoxide

Exposure to high concentrations of carbon monoxide, a colorless and odorless gas, reduces the oxygen-carrying capacity of the blood, and therefore can cause dizziness and fatigue, impair central nervous system functions, and induce angina in persons with serious heart disease. Carbon monoxide is emitted almost exclusively from the incomplete combustion of fossil fuels. In urban areas, motor vehicles, power plants, refineries, industrial boilers, ships, aircraft, and trains emit carbon monoxide. Motor vehicle exhaust releases most of the carbon monoxide in urban areas. Vehicle exhaust contributes approximately 56 percent of all carbon monoxide emissions nationwide and up to 95 percent in cities. Carbon monoxide is a non-reactive air pollutant that dissipates relatively quickly. As a result, ambient carbon monoxide concentrations generally follow the spatial and temporal distributions of vehicular traffic. Carbon monoxide concentrations are influenced by local meteorological conditions; primarily wind speed, topography, and atmospheric stability. Carbon monoxide from motor vehicle exhaust can become locally concentrated when surface-based temperature inversions combine with calm atmospheric conditions.

Ozone

While ozone serves a beneficial purpose in the upper atmosphere (stratosphere) by reducing potentially harmful ultraviolet radiation, when it reaches elevated concentrations in the lower atmosphere it can be harmful to the human and to sensitive species of plants. Short-term ozone exposure can reduce lung function and increase an individual's susceptibility to respiratory infection. Long-term exposure can impair lung defense mechanisms and lead to emphysema and/or chronic bronchitis. Ozone concentrations build to peak levels during periods of light winds or stagnant air, bright sunshine, and high temperatures. Ideal conditions occur during summer and early autumn. Sensitivity to ozone varies among individuals. About 20 percent of the population is sensitive to ozone, with exercising children being particularly vulnerable. Ozone is formed in the atmosphere by a complex series of chemical reactions under sunlight that involve "ozone precursors." Ozone precursors are categorized into two families of pollutants: oxides of nitrogen and reactive organic compounds. Oxides of nitrogen and reactive organic compounds are emitted from a variety of stationary and mobile sources. While oxides of nitrogen are considered a criteria pollutant, reactive organic compounds are not in this category, but are included in this discussion as ozone precursors. Ozone is the chief component of urban smog and the damaging effects of photochemical smog generally relate to the concentration of ozone. Meteorology and terrain play major roles in ozone formation. The greatest source of smog producing gases is the automobile.

Nitrogen Dioxide

The major health effect from exposure to high levels of nitrogen dioxide is the risk of acute and chronic respiratory disease. Like ozone, nitrogen dioxide typically is not directly emitted, but it is formed through a rapid reaction between nitric oxide and atmospheric oxygen. Nitric oxide and nitrogen dioxide are collectively called oxides of nitrogen and are major contributors to ozone formation. Nitrogen dioxide also contributes to the formation of respirable particulate matter (see discussion of respirable particulate matter below) and fine particulate matter through the formation of nitrate compounds. At atmospheric

concentrations, nitrogen dioxide is only potentially irritating. In high concentrations, the result is a brownish-red cast to the atmosphere and reduced visibility.

Sulfur Dioxide

The major health effect from exposure to sulfur dioxide is acute and chronic respiratory disease. Exposure may cause narrowing of the airways, which may cause wheezing, chest tightness, and shortness of breath. Sulfur dioxide can also react with water in the atmosphere to form acids (or "acid rain"), which can cause damage to vegetation and man-made materials. The main source of sulfur dioxide is coal and fuel oil combustion in power plants and industries, as well as diesel fuel combustion in motor vehicles. Generally, the highest levels of sulfur dioxide are found near large industrial complexes. In recent years, sulfur dioxide concentrations have been reduced by the increasingly stringent controls placed on stationary source emissions of sulfur dioxide and by limiting the sulfur content in fuel. Sulfur dioxide concentrations in southern California have been reduced to levels well below the state and national ambient air quality standards, but further reductions in emissions are needed to attain compliance with ambient air quality standards for sulfates, respirable particulate matter, and fine particulate matter, to which sulfur dioxide is a contributor.

Particulate Matter

Particulate matter pollution consists of very small liquid and solid particles in the air, which can include smoke, soot, dust, salts, acids, and metals. Particulate matter also forms when gases emitted from industries and motor vehicles undergo chemical reactions in the atmosphere. Particulate matter is regulated as respirable particulate matter (inhalable particulate matter less than ten micrometers in diameter). More recently it has been subdivided into coarse and fine fractions, with particulate matter less than 2.5 micrometers in diameter constituting the fine fraction. Major sources of respirable particulate matter include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood-burning stoves and fireplaces; dust from construction, landfills, and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. Fine particulate matter results from fuel combustion (e.g., from motor vehicles, power generation, and industrial facilities), residential fireplaces, and wood stoves. In addition, fine particulate matter can be formed in the atmosphere from gases such as sulfur dioxide, oxides of nitrogen, reactive organic compounds, and ammonia, and elemental carbon. Fine particulate matter is a subset of respirable particulate matter.

The health effects from long-term exposure to high concentrations of particulate matter are increased risk of chronic respiratory disease like asthma and altered lung function in children. Particles with 2.5 to 10 microns in diameter tend to collect in the upper portion of the respiratory system. Particles that are 2.5 microns or less are so tiny that they can penetrate deeper into the lungs and damage lung tissues. These substances can be absorbed into the bloodstream and cause damage elsewhere in the body. Short-term exposure to high levels of particulate matter has been shown to increase the number of people seeking medical treatment for respiratory distress, and to increase mortality among those with severe respiratory problems. Particulate matter also results in reduced visibility. Ambient particulate matter has many sources. It is emitted directly by combustion sources

like motor vehicles, industrial facilities, and residential wood burning, and in the form of dust from ground-disturbing activities such as construction and farming. It also forms in the atmosphere from the chemical reaction of precursor gases.

Toxic Air Contaminants

Toxic air contaminants include air pollutants that can produce adverse public health effects, including carcinogenic effects, after long-term (chronic) or short-term (acute) exposure. One source of toxic air contaminants is combustion of fossil fuels or digester gas. Human exposure occurs primarily through inhalation, although non-inhalation exposure can also occur when toxic air contaminants in particulate form deposit onto soil and drinking water sources and enter the food chain or are directly ingested by humans. Many pollutants are identified as toxic air contaminants because of their potential to increase the risk of developing cancer. For toxic air contaminants that are known or suspected carcinogens, it has been found that there are no levels or thresholds below which exposure is risk free. No ambient air quality standards exist for toxic air contaminants, except that standards for lead, hydrogen sulfide, and vinyl chloride are provided in California Ambient Air Quality Standards. Instead, numerous national, state, and local rules that affect both stationary and mobile emission sources regulate toxic air contaminants emissions. Individual toxic air contaminants vary greatly in the risk they present; at a given level of exposure one toxic air contaminants may pose a hazard that is many times greater than another. Where data are sufficient to do so, a "unit risk factor" can be developed for cancer risk. The unit risk factor expresses assumed risk to a hypothetical population, the estimated number of individuals in a million who may develop cancer as the result of continuous, lifetime (70-year) exposure to 1 $\mu g/m^3$ of the toxic air contaminants. Unit risk factors provide a standard that can be used to establish regulatory thresholds for permitting purposes. This is, however, not a measure of actual health risk because actual populations do not experience the extent and duration of exposure that the hypothetical population is assumed to experience. For non-cancer health effects, a similar factor called a Hazard Index is used.

Areas with monitored pollutant concentrations that are lower than ambient air quality standards are designated as "attainment areas" on a pollutant-by-pollutant basis. When monitored concentrations exceed ambient standards, areas are designated as "nonattainment areas." An area that recently exceeded ambient standards, but is now in attainment, is designated as a "maintenance area." Nonattainment areas are further classified based on the severity and persistence of the air quality problem as "moderate" "severe" or "serious." Classifications determine the applicability and minimum stringency of pollution control requirements.

6.2.1 Regulatory Setting

Federal

The U.S. EPA is the federal agency charged with administering the federal Clean Air Act Amendments of 1990, which established a number of requirements. The U.S. EPA oversees state and local implementation of federal Clean Air Act requirements. The Clean Air Act Amendments require the U.S. EPA to approve State Implementation Plans to meet and/or maintain the national ambient standards. The federal (and California) ambient air quality standards are shown in Table 8.

Table 8. Federal and California Ambient Air Quality Standards.

Pollutant	Averaging Time	California Standards	Federal Standards	
			Primary	Secondary
Ozone	1 Hour	0.09 ppm (180 µg/m^3)	-	Same as Primary Standard
	8 Hour	0.070 ppm (137 µg/m^3)	0.075 ppm (147 µg/m^3)	
Respirable Particulate Matter	24 Hour	50 µg/m^3	150 µg/m^3	Same as Primary Standard
	Annual Arithmetic Mean	20 µg/m^3	-	
Fine Particulate Matter	24 Hour	No Separate State Standard	35 µg/m^3	35 µg/m^3
	Annual Arithmetic Mean	12 µg/m^3	12.0 µg/m^3	15.0 µg/m^3
Carbon Monoxide	1 Hour	20 ppm (23 mg/m^3)	35 ppm (40 mg/m^3)	-
	8 Hour	9.0 ppm (10 mg/m^3)	9 ppm (10 mg/m^3)	
	8 Hour (Lake Tahoe)	6 ppm (7 mg/m^3)	-	-
Nitrogen Dioxide	Annual Arithmetic Mean	0.030 ppm (57 µg/m^3)	0.053 ppm (100 µg/m^3)	Same as Primary Standard
	1 Hour	0.18 ppm (339 µg/m^3)	100 ppm (188 µg/m^3)	-
Sulfur Dioxide	Annual Arithmetic Mean	-	0.030 ppm	-
	24 Hour	0.04 ppm (105 µg/m^3)	0.14 ppm (365 µg/m^3)	-
	3 Hour	-	-	0.5 ppm (1300 µg/m^3)
	1 Hour	0.25 ppm (655 µg/m^3)	75 ppb (195 µg/m^3)	-
Lead	30 Day Average	1.5 µg/m^3	-	-
	Calendar Quarter	-	1.5 µg/m^3	Same as Primary Standard

State

The California Air Resources Board is the state agency responsible for coordinating both state and federal air pollution control programs in California. In 1988, the State Legislature adopted the California Clean Air Act, which established a statewide air pollution control program. The California Clean Air Act's requirements include annual emission reductions, increased development and use of low emission vehicles, and submittal of air quality attainment plans by air districts. The California Air Resources Board has established state

ambient air quality standards, shown in Table 8. Additionally, the California Air Resources Board has established state standards for pollutants that have no federal ambient air quality standard, including sulfate, visibility, hydrogen sulfide, and vinyl chloride.

Local

There are 35 local air districts within the state. Each district (referred to as either an Air Pollution Control District or an Air Quality Management District) is responsible for controlling emissions, primarily from stationary sources of air pollution, within their area. Each district develops and adopts an Air Quality Management Plan, which serves as the blueprint to bring their respective areas into compliance with federal and state clean air standards. Rules are adopted to reduce emissions from various sources.

6.2.2 Thresholds of Significance

Air quality impacts would be considered significant if the final Trash Amendments or reasonably foreseeable methods of compliance would:

- Conflict with or obstruct the implementation of the applicable air quality plan (although there are many applicable air quality plans in the state, this analysis utilized the South Coast Air Quality Management District Plan as the representative air quality plan for assessing impacts).
- Violate any air quality standards or contribute substantially to an existing or projected air quality violation (although there are many applicable air quality standards, depending on the air basin in the state, this analysis utilized the South Coast Air Quality Management District's standards as the representative air quality standards for assessing impacts).
- Expose sensitive receptors to substantial pollutant concentrations.
- Create objectionable odors affecting a substantial number of people.
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is in non-attainment under any applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors). This impact threshold is addressed in Section 7.2.

6.2.3 Impacts and Mitigation

The Los Angeles Water Board conducted an analysis of potential air quality impacts of the identified alternatives for compliance with the Los Angeles River Trash TMDL (Trash TMDL) (Los Angeles Water Board 2007f). This analysis is incorporated by reference and summarized here. Staff has reviewed this analysis and has concluded that it is an appropriate representation of the potential impacts that could occur in other areas of the state with implementation of the final Trash Amendments, including the reasonably foreseeable methods of compliance.

The South Coast Air Basin (which includes the area covered by the Trash TMDL) is home to more than 42 percent of California's population. Pollutant concentrations in parts of the South Coast Air Basin are among the highest in the nation. South Coast Air Basin

emissions improved between 2005 and 2010 and are expected to further improve and become somewhat constant through 2035 (ARB 2013). With its high population and pollutant concentrations, potential impacts to air quality are likely to be greater in the South Coast Air Basin than in other parts of the state and serves as a maximum possible impact related to air quality. Therefore, potential impacts identified in this analysis would likely be less in all other air basins.

Impact Assessment Methodology

This evaluation addresses impacts that have the potential to occur from the final Trash Amendments, including the reasonably foreseeable methods of compliance, including both short -and long-term activities. The evaluation is based on a calculation of the total emissions from travel of construction and maintenance vehicles that might be affected by implementation of the final Trash Amendments. This comparative evaluation was done instead of examining the emissions from each individual source alone and comparing them to a threshold level.

Vehicle Emissions

Vehicle emissions were calculated in the Trash TMDL analysis using forecasts of total vehicle miles traveled based on data provided in MOBILE6, which is a vehicle emission software developed by U.S. EPA (U.S. EPA 2003; 2004; 2006). MOBILE6 is used for predicting gram per mile emissions of hydrocarbons, carbon monoxide, oxides of nitrogen, carbon dioxide, PM, and toxics from cars, trucks, and motorcycles under various conditions. The data which this calculation is based on are from technical documents of MOBILE6 (U.S. EPA 2003). Considering the type of work involved in implementation of the final Trash Amendments, the calculation assumed that non-tampered heavy-duty diesel vehicles (HDDV Class 6) would be used for installation/construction/maintenance activities. The mileage was assumed to be 50,000 miles, which is the median mileage for HDDVs. The year of vehicle was assumed to be 2001+ for hydrocarbons, carbon monoxide, oxides of nitrogen, and sulfur dioxide and 1994+ for particulate matter.

Based on assumptions above, the exhaust emission rates were found to be 2.1, 9.92, and 6.49 grams per mile for hydrocarbons, carbon monoxide, and oxides of nitrogen, respectively. The particulate matter standard for HDDVs is 0.1 g/bhp-hr. By applying a conversion factor of 1.942 bhp-hr/mi (from Update Heavy-Duty Engine Emission Conversion Factors for Mobile6 – Analysis of BSFCs and Calculation of Heavy-Duty Engine Emission Conversion Factors), the exhaust emission rate for particulate matter was found to be 0.1942 grams per mile. There was no exhaust emission rate information available for SO_x in MOBILE6. Instead by using diesel fuel sulfur level of eight ppm (from MOBILE6 for years after 2006), diesel fuel economy of 8.71 miles per gallon (from Update Heavy-Duty Engine Emission Conversion Factors for Mobile6 – Analysis of BSFCs and Calculation of Heavy-Duty Engine Emission Conversion Factors), and diesel fuel density of 7.099 pounds per gallon (from Update Heavy-Duty Engine Emission Conversion Factors for MOBILE6 – Analysis of Fuel Economy, Non-Engine Fuel Economy Improvements and Fuel Densities), the exhaust emission rate for sulfur dioxide could be 0.00592 grams per mile, assuming all sulfur in fuel would be transformed to sulfur dioxide.

Catch Basin Inserts

Long-term increases in traffic caused by ongoing maintenance of catch basin inserts (e.g., delivery of materials, street sweeping) are potential sources of increased air pollutant emissions.

As an example, the Trash TMDL analysis estimated that approximately 150,000 catch basins could be retrofitted with inserts in the urban portion of watershed. As discussed previously, the Los Angeles River Watershed has 474 square miles highly developed with commercial, industrial, or residential uses. Assuming that 150,000 catch basin inserts were placed evenly in the 474 square miles developed area, each catch basin insert covered 0.00316 square miles. The distance between two catch basin inserts was about 0.056 mile. The total distance for a truck to travel through all 150,000 catch basin inserts units was about 8,342 miles. Assuming catch basins need to be cleaned twice a year. This translated to approximately 822 vehicle trips per day in the watershed. Assuming the 822 trips were arranged at shortest distance, which is reasonable by arranging a round trip, the total travel distance for 822 trips was about 52 miles (9497 miles divided by 183 days, or 822 trips times 0.063 mile). The vehicle emissions for traveling 52 miles are listed in Table 9. Emission levels for all the pollutants were well below the South Coast Air Quality Management District Air Quality Significance thresholds. If all trips were arranged in one day, emission levels for HC, CO, PM, and sulfur dioxide were still well below the significance thresholds. The maximum potential impact of the proposed project for level for oxides of nitrogen was about twice the significance threshold level of 55 lbs/day.

Measures are available to alleviate any potential impacts to air quality due to increased traffic due to catch basin cleanings. Such measures could include: (1) use of construction, maintenance, and street sweeper vehicles with lower-emission engines; (2) use of soot reduction traps or diesel particulate filters; (3) use of emulsified diesel fuel; (4) use of vacuum-assisted street sweepers to eliminate potential re-suspension of sediments during sweeping activity; and (5) the design of trash removal devices to minimize the frequency of maintenance trips (e.g., design for smaller drainage areas).

Toxic Air Contaminants Because the emission levels of criteria pollutants during installation and maintenance of catch basin inserts can be below the South Coast Air Quality Management District Air Quality Significance thresholds, the emission of toxic air contaminants is expected to be below the other Air Quality Management District thresholds as well. With its high population and pollutant concentrations, South Coast Air Quality Management District's thresholds are likely to be the most stringent of other Districts in other parts of the state and serves as a maximum threshold related to Toxic Air Contaminants. Therefore, a significant increase in toxic air contaminants is not expected in other areas of the state due to implementation of the final Trash Amendments.

Odor Impacts To the extent improper disposal of, for instance, household hazardous wastes result in them being kept on the street or in inserts, and potentially allowing a release of chemical odors, local residents could be exposed to those effects. Those effects are already occurring in watersheds, however, and should be considered baseline impacts. Nevertheless, to the extent the locality that originated the risk would become newly potentially exposed instead of downstream receptors, those impacts could be potentially significant in those locales. Such impacts could be avoided or mitigated by

educating the local community of the effects of improper disposal of such wastes, enforcing litter ordinances, and timely cleaning out inserts.

Vortex Separation Systems

Criteria Pollutants Short term increases in traffic during the construction and installation of vortex separation systems and long-term increases in traffic caused by ongoing maintenance of these devices (e.g., delivery of materials and deployment of vacuum trucks) are potential sources of increased air pollutant emissions. For example, the Trash TMDL analysis estimated that approximately 3700 large capacity vortex separation systems could be installed to collect all the trash generated in the urban portion of the Los Angeles River watershed. Maintenance requirements for trash removal devices demonstrate that devices should be emptied when they reach 85 percent capacity. Vortex separation systems can be designed so that they need be cleaned only once per storm season.

As an example of truck travel within a particular watershed used as a representative maximum possible effect of the proposed project, the Los Angeles River Watershed covers a land area of over 834 square miles, of which 599 square miles are highly developed with commercial, industrial, or residential uses. The remaining area is covered by forest or open space. Assuming that 3700 vortex separation systems were placed evenly in the 599 square miles developed area, each vortex separation system would cover 0.162 square miles. The distance between two vortex separation system units was about 0.40 mile. The total distance for a truck to travel through all 3700 vortex separation system units was about 1489 miles. A vortex separation system would need to be cleaned at minimum once per storm season, i.e., once per year.[15] There are about 247 business days a year. This translated to approximately 15 vehicle trips per business day in the watershed. Assuming the 15 trips were arranged at shortest distance, the total travel distance for 15 trips was about six miles (1489 miles divided by 247 days, or 15 trips times 0.40 mile). The vehicle emissions for traveling six miles are listed in Table 9. Emission levels for all the pollutants are far below the South Coast Air Quality Management District Air Quality Significance thresholds. If all trips are conducted in one day, emission levels for all the pollutants are still well below the significance thresholds (Table 9).

[15] Annual frequency of the cleaning the vortex separation systems may vary across California in response to rain events. However, this variation would not substantially change the conclusions of this analysis.

Table 9. Vehicle Emissions within the Los Angeles River Watershed Example.

Device	Trips per day	HC (lbs/day)	CO (lbs/day)	NO_x (lbs/day)	PM (lbs/day)	SO_2 (lbs/day)
Vortex Separation System	15*	0.029	0.132	0.086	0.0026	0.000079
Vortex Separation Systems	3700**	6.9	32.5	21.3	0.64	0.019
Catch Basin Insert	21,429*	0.2	1.1	0.7	0.0	0.00068
Catch Basin Insert	150,000**	43.7	206.5	135.1	4.0	0.12
SCAQMD significance threshold		55	550	55	150	150
*trips conducted over 247 business days, **trips conducted in a single day						

Using the South Coast Air Quality Management District daily construction emissions thresholds as a representative of air quality standards for assessing impacts, the emissions generated by construction equipment for the proposed project are expected to be lower than the daily construction emissions thresholds. However, detailed analysis can only be done at project level. In case daily construction emissions exceed significance thresholds, which are unlikely, construction projects for different vortex separation system units can be conducted on different days to reduce emissions rates.

Measures to decrease air emissions from increased vehicle trips or increased use of construction equipment include: (1) use of construction, and maintenance vehicles with lower-emission engines; (2) use of soot reduction traps or diesel particulate filters; and (3) use of emulsified diesel fuel.

Toxic Air Contaminants The emission levels of criteria pollutants during installation and maintenance of vortex separation system units are far below the South Coast Air Quality Management District Air Quality Significance thresholds, the emissions of toxic air contaminants are expected to be far below the other Air Quality Management District thresholds as well. With its high population and pollutant concentrations, South Coast Air Quality Management District's thresholds are likely to be the most stringent of other Air Quality Management Districts in other parts of the state and serves as a maximum threshold related to Toxic Air Contaminants. Therefore, a significant increase in toxic air contaminants is not expected in other areas of the state due to implementation of the final Trash Amendments.

Odor Impacts During construction of the vortex separation system units, it is possible that foul air could be temporarily released to the atmosphere while enclosed sources are uncovered or piping is reconfigured. These releases could create objectionable odors at the nearest receptors. These impacts are temporary and unpleasant odors, if any, would be at minimum with completion of the installation.

Vortex separation system units may be a source of objectionable odors if design allows for water stagnation or collection of water with sulfur-containing compounds. Storm water runoff is not likely to contain sulfur-containing compounds, but stagnant water could create objectionable odors. Measures to eliminate odors caused by stagnation could include covers, aeration, filters, barriers, and/or odor suppressing chemical additives. Devices could be inspected to ensure that intake structures are not clogged or pooling water. During maintenance, odorous sources could be uncovered for as short of a time period as possible. To the extent possible, trash removal devices could be designed to minimize stagnation of water (e.g., allow for complete drainage within 48 hours) and installed to increase the distance to sensitive receptors in the event of any stagnation.

The potential re-suspension of sediments and associated pollutants during construction could also impact air quality. An operations plan for the specific construction and/or maintenance activities could be completed to address the variety of available measures to limit the air quality impacts. These could include vapor barriers and moisture control to reduce transfer of small sediments to air.

To the extent improper disposal of, for instance, household hazardous wastes result in them being trapped in structural compliance measures, potentially allowing a release of such chemicals, local residents could be exposed to those effects. On balance, however, it is not unfair that the residents of the localities where improper disposal of such materials occurs should suffer those risks rather than allowing the wastes to be conveyed through the water body, to expose downstream citizens to risk instead. Those effects are already occurring in the watershed and should be considered baseline impacts. Nevertheless, to the extent the locality that originated the risk would become newly potentially exposed instead of downstream receptors, those impacts could be potentially significant in those locales. Such impacts could be avoided or mitigated by educating the local community of the effects of improper disposal of such wastes, enforcing litter ordinances, and timely cleaning out vortex separation systems.

Trash Nets

Trash nets are end-of-pipe devices. The number of end-of-pipe trash nets installed would be limited by the number of suitable locations within a watershed. Short term increases in traffic during the construction and installation of trash nets and long-term increases in traffic caused by ongoing maintenance of these devices (e.g., replacement of nets) are potential sources of increased air pollutant emissions. After installation, trash nets can be replaced once per year. It is not clear how many trash nets are going to be installed at this point. If the responsible parties make decisions on the numbers of trash nets that are going to be installed, the impacts on air quality caused by installation and maintenance of trash nets should be analyzed at project level. Nevertheless, many fewer trash nets are currently being installed than catch basin inserts, and, anticipating this trend to continue, the impacts of installation and maintenance of trash nets on air quality are expected to be much less than those of catch basin inserts.

Measures to lessen the impacts of increased air emissions caused by increased vehicle trips or construction equipment due to the installation of trash nets include: (1) use of construction, and maintenance vehicles with lower-emission engines; (2) use of soot reduction traps or diesel particulate filters; and (3) use of emulsified diesel fuel.

Trash trapped in trash nets may be a source of objectionable odors. Measures to eliminate odors could include covers, aeration, filters, barriers, and/or odor suppressing chemical additives. During maintenance, odorous sources could be uncovered for as short of a time period as possible. Notably, the current conditions result in significant impacts from odor. The impacts from odor could be alleviated by employing alternative structural devices, such as in-line trash nets, or by employing non-structural controls, for instance, increased litter enforcement.

Gross Solids Removal Devices

Short term increases in traffic during the construction and installation of Gross Solids Removal Devices and long-term increases in traffic caused by ongoing maintenance of these devices (e.g., replacement of nets) are potential sources of increased air pollutant emissions. Each Gross Solids Removal Device was designed to capture annual load of gross solids, which would result in one cleaning per year. It is not clear how many Gross Solids Removal Devices are going to be installed at this point. If the responsible parties determine that Gross Solids Removal Devices should be installed, the impacts on air quality caused by installation and maintenance Gross Solids Removal Devices should be analyzed at project level. Nevertheless, many fewer Gross Solids Removal Devices are currently being installed than catch basin inserts, and, anticipating these trends to continue, the impacts of installation and maintenance of Gross Solids Removal Devices on air quality are expected to be much less than those of catch basin inserts.

Measures to lessen the increase of air emissions caused by increased vehicle trips or construction equipment due to the installation of Gross Solids Removal Devices include: (1) use of construction, and maintenance vehicles with lower-emission engines; (2) use of soot reduction traps or diesel particulate filters; and (3) use of emulsified diesel fuel.

Trash trapped in Gross Solids Removal Devices may be a source of objectionable odors. Measures to eliminate odors could include covers, aeration, filters, barriers, and/or odor suppressing chemical additives. During maintenance, odorous sources could be uncovered for as short of a time period as possible. By employing nonstructural controls, for instance, increased litter enforcement, the impacts from odor could be alleviated.

Enforcement of Litter Laws

It is possible that the final Trash Amendments may require more workers and vehicles to enforce litter laws. Air pollutant emissions might be increased due to increased driving to enforce litter laws. The increase in traffic due to enforcement of litter laws, however, is expected to be very limited and would not have a noticeable impact on air quality.

Increased Street Sweeping

Increased street sweeping would increase traffic and therefore increase air pollutant emissions. Increased street sweeping would not foreseeably be implemented alone for the final Trash Amendments. It is not clear how often street sweeping would be increased to comply with the final Trash Amendments at this point. If the responsible parties determine that a given frequency of street sweeping is necessary, the impacts on air quality caused by increased street sweeping should be analyzed at project level.

Increased street sweeping may increase objectionable odors on street. Nonetheless, measures are available to reduce any potential impacts to air quality due to increased

street sweeping. Such measures could include: (1) use of street sweeper vehicles with lower-emission engines; (2) use of soot reduction traps or diesel particulate filters, (3) use of emulsified diesel fuel; (4) use of vacuum-assisted street sweepers to eliminate potential re-suspension of sediments during sweeping activity.

Public Education

Similar to enforcement of litter laws, public education is not expected to have noticeable impact on air quality.

Ordinances

Similar to enforcement of litter laws and public education, ordinances are expected to have no impact or less-than-significant impact on air quality.

Exposure of sensitive receptors to substantial pollutant concentrations

Implementation of the final Trash Amendments is expected to cause a minor amount of construction activities, causing impacts to air quality over baseline conditions. This construction is expected to take place within a short timeframe of several days, spread out over many urban and suburban sites. Due to the short term and dispersed nature of the implementation of the final Trash Amendments, there is no expectation that sensitive receptors will be exposed to substantial pollutant concentrations. In addition, the reasonably foreseeable methods of compliance will be conditioned with standard procedures requiring that the general population not have access to construction areas. Further, maintenance activities would be intermittent and are not expected to create substantial pollutant concentrations. Therefore, potential impacts due to exposure of sensitive receptors to substantial pollutant concentrations are expected to be less than significant for the reasonably foreseeable methods of compliance with the final Trash Amendments.

6.2.4 Summary

Installation and maintenance of full capture systems and treatment controls could result in potentially significant environmental effects with regard to air quality. Measures, however, can be applied to reduce and/or eliminate these impacts, as described above. These measures are within the responsibility and jurisdiction of the responsible agencies subject to the final Trash Amendments and can or should be adopted by them. The State Water Board does not direct which compliance measures responsible agencies choose to adopt or the mitigation measures they employ. The State Water Board does, however, recommend that appropriate measures be applied to reduce or avoid potential environmental impacts. Although this analysis concludes that, based on substantial evidence on the record, on a statewide level analysis, all impacts would be less than significant with mitigation; it is foreseeable that these measures may not always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. Although there is no information on the record that this would occur, in the event that a specific measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the final Trash Amendments. All foreseeable methods of compliance listed above would not be of the size or scale to result

in alteration of air movement, moisture or temperature, or any change in climate, either locally or regionally.

6.3 Biological Resources

A general description of the environmental setting is presented in Section 3 of this document. Those portions of the state where the final Trash Amendments would be implemented are densely urbanized and the presence of fish and wildlife species and their supporting habitat severely limited. Any watercourses, riparian habitat or wetlands downstream from the implementation areas would not be adversely impacted by implementation measures. Rather, these areas would be improved by the reduction in trash entering these habitats from upstream sources.

6.3.1 Regulatory Setting

Federal Regulatory Setting

Federal Endangered Species Act

Pursuant to the federal Endangered Species Act, the U. S. Fish and Wildlife Service and National Oceanic and Atmospheric Administration Fisheries Service, formerly National Marine Fisheries Service, have regulatory authority over federally listed species. Under the Endangered Species Act, a permit is required for any federal action that may result in "take" of a listed species. Section 9 of the Endangered Species Act defines take as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Under federal regulations, take is further defined to include the modification or degradation of habitat where such activity results in death or injury to wildlife by significantly impairing essential behavioral patterns, including breeding, feeding, or sheltering.

Clean Water Act

Section 404 of the CWA requires project proponents to obtain a permit from the U.S. Army Corps of Engineers before performing any activity that involves discharge of dredged or fill material into "waters of the United States," including wetlands. Dredge and fill activities involve any activity, such as construction, that results in direct modification (e.g., alteration of the banks, deposition of soils) of an eligible waterway. Waters of the United States include navigable waters, interstate waters, and other waters where the use or degradation or destruction of the waters could affect interstate or foreign commerce, tributaries to any of these waters, and wetlands that meet any of these criteria or that are adjacent to any of these waters or their tributaries. Many surface waters and wetlands in California meet the criteria for waters of the United States.

In accordance with section 401 of the CWA, projects that apply for a U.S. Army Corps of Engineers permit for discharge of dredged or fill material must obtain water quality certification from the Water Boards indicating that the project would uphold state water quality standards.

State Regulatory Setting

California Endangered Species Act

Pursuant to the California Endangered Species Act, a permit from the California Department of Fish and Wildlife is required for projects that could result in take of a plant or animal species that is state listed as threatened or endangered. Under California Endangered Species Act, "take" is defined as an activity that would directly or indirectly kill an individual of a species. Authorization for take of state-listed species can be obtained through a California Fish and Wildlife Code section 2080.1 consistency determination or a section 2081 incidental take permit.

Section 1600 of the California Fish and Wildlife Code

All diversions, obstructions, or changes to the natural flow or bed, channel, or bank of any river, stream or lake in California that supports wildlife resources is subject to regulation by the California Department of Fish and Wildlife, under sections 1600–1603 of the California Fish and Wildlife Code. Section 1601 states that it is unlawful for any agency to substantially divert or obstruct the natural flow or substantially change the bed, channel or bank of any river, stream or lake designated by California Department of Fish and Wildlife, or use any material from the streambeds, without first notifying California Department of Fish and Wildlife of such activity. The regulatory definition of a stream is a body of water that flows at least periodically or intermittently through a bed or channel having banks and supports fish or other aquatic life. This includes watercourses having a surface or subsurface flow that supports or has supported riparian vegetation. California Department of Fish and Wildlife's jurisdiction within altered or artificial waterways is based on the value of those waterways to fish and wildlife. Accordingly, a California Department of Fish and Wildlife Streambed Alteration Agreement must be obtained for any project that would result in diversions of surface flow or other alterations to the bed or bank of a river, stream, or lake.

Porter-Cologne Water Quality Control Act

Under the Porter-Cologne, "waters of the state" fall under the jurisdiction of the appropriate regional water board. The regional water board must prepare and periodically update Basin Plans. Each Basin Plan establishes numerical or narrative water quality objectives to protect established beneficial uses, which include wildlife, fisheries and their habitats. Projects that affect wetlands or waters of the state must meet discharge requirements of the regional water board, which may be issued in addition to a water quality certification or waiver under section 401 of the CWA.

Local Regulations

Numerous California cities and counties have adopted ordinances regulations and policies for the protection and enhancement of natural resources, including heritage trees, important natural features, habitat alteration, and common and special status species.

6.3.2 Thresholds of Significance

A project would normally have a significant effect on biological resources if it would:

- Have a substantial adverse effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special status species in local or regional plans, policies or regulations, or by the California Department of Fish and Wildlife or the U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Fish and Wildlife or U.S. Fish and Wildlife Service;
- Have a substantial adverse effect on federally protected wetlands as defined by section 404 of the CWA (including, but not limited to marsh, riparian scrub, etc.) through direct removal, filling, hydrological interruption, or other means;
- Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites;
- Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance; or
- Conflict with the provision of an adopted Habitat Conservation Plan, Natural Community Conservation Plan or other approved local, regional, or state habitat conservation plan.

6.3.3 Impacts and Mitigation

This is a statewide analysis of the potential impacts from each implementation measure. The specific location of each implementation measure would be determined during the implementation of the final Trash Amendments. In general, the activities that would take place with the implementation of the full capture and/or partial capture trash capture systems would be similar in nature to current urban activities that are already occurring in the watersheds. The implementation of additional trash control measures would not foreseeably:

- Cause a substantial reduction of the overall habitat of a wildlife species.
- Produce a drop in a wildlife population below self-sustaining levels.
- Eliminate a plant or animal community.
- Have a substantial adverse effect on federally protected wetlands.
- Conflict with any local policies or ordinances protecting biological resources.

It is not reasonably foreseeable that either the construction/implementation or maintenance phase of potential projects would result in a significant long-term impact to general wildlife species adapted to developed environments.

An objective of the final Trash Amendments is to improve conditions for aquatic life. Removing trash from the State's rivers, streams, and lakes would have an overall positive impact on biological resources.

Catch Basins

Catch basin inserts fit directly into curbside catch basins, requiring no expansion of footprint or additional excavation, in urbanized areas where native habitat or special-status species usually are absent. As such, impacts to biological resources would likely not occur, including impacts to species diversity, impacts to special-status species, impacts to habitat, or impacts to wildlife migration. Furthermore, because installation of catch basin inserts requires no construction or ground disturbance and is accomplished within the existing footprint of the facility, the installation of catch basin inserts would not impact biological resources. Implementation of the Trash Amendments and the use of catch basin inserts would considerably improve habitat for biological resources by removing trash from water bodies, as well as surrounding beaches. No mitigation is required since no potentially significant impacts are anticipated.

Vortex Separation Systems

Vortex separation systems would be implemented in currently urbanized areas. Since these areas are already fully urbanized, it is unlikely that the installation of vortex separation systems would cause the removal, disturbance or change in diversity of any plant species or cause a change or reduction in the number of any unique, rare or endangered species of plants. Depending on the final location of facilities, however, potential impacts to biological resources including special-status species and habitat, wetlands, and trees protected under local ordinances or policies could occur.

It is not reasonably foreseeable that implementation of vortex separation systems would result in the introduction of exotic or invasive plant species into an area. Nor would it result in a barrier to the normal replenishment of existing species. In the case that landscaping is incorporated into the specific project design, however, there is a possibility of disruption of resident native species.

It is possible that direct or indirect impacts to special-status animal species may occur at the project level. Because these animal species are protected by state and/or federal Endangered Species Acts, impacts to them would be considered potentially significant. Even though it is expected that potential projects would occur in previously developed areas it is possible for special-status species to occur in what would generally be described as urban areas. If these species are present during activities such as ground disturbance, construction, and operation and maintenance activities associated with the potential projects, it could conceivably result in direct impacts to special status species including the following:

- Direct loss of a sensitive species.
- Increased human disturbance in previously undisturbed habitats.
- Mortality by construction or other human-related activity.
- Impairing essential behavioral activities, such as breeding, feeding or shelter/refugia.
- Destruction or abandonment of active nest(s)/den sites.
- Direct loss of occupied habitat.

In addition, potential indirect impacts may include but are not limited to, the following:

- Displacement of wildlife by construction activities.
- Disturbance in essential behavioral activities due to an increase in ambient noise levels and/or artificial light from outdoor lighting around facilities.

It is not reasonably foreseeable that implementation of vortex separation systems would result in the introduction of new species. In addition, because potential projects would be established in previously heavily developed areas it is not expected that potential project sites would act as a travel route or regional wildlife corridor. Construction of these facilities would not considerably restrict wildlife movement. A travel route is generally described as a landscape feature (such as a ridgeline, canyon, or riparian strip) within a larger natural habitat area that is used frequently by animals to facilitate movement and provide access to necessary resources (e.g. water, food, and den sites). Wildlife corridors are generally an area of habitat, usually linear in nature, which connect two or more habitat patches that would otherwise be fragmented or isolated from one another. It is considered unlikely that vortex separation systems would be constructed in areas such as these.

Constructed vortex separation systems, however, may potentially impact wildlife crossings. A wildlife crossing is a small narrow area relatively short and constricted, which allows wildlife to pass under or through obstacles that would otherwise hinder movement. Crossings are typically manmade and include culverts, underpasses, and drainage pipes to provide access across or under roads, highways, or other physical obstacles.

Construction activities associated with the implementation of vortex separation systems may impact migratory avian species. These avian species may use portions of potential project sites, including ornamental vegetation, during breeding season and may be protected under the Migratory Bird Treaty Act while nesting. The Migratory Bird Treaty Act includes provisions for protection of migratory birds under the authority of the U.S. Fish and Wildlife Service and California Fish and Wildlife. The Migratory Bird Treaty Act protects over 800 species including, geese, ducks, shorebirds, raptors, songbirds, and many other relatively common species.

It is not reasonably foreseeable that the implementation of vortex separation systems would result in the deterioration of existing fish and or wildlife habitat. Potential vortex separation systems would be located in previously developed areas and would not result in the removal of sensitive biological habitats.

Vortex separation systems would not be located within the river channel, but rather in the storm drain itself. As such, a foreseeable deterioration of existing fish habitat is not anticipated. It is foreseeable, however, that the implementation of the final Trash Amendments would considerably improve fish habitat by removing trash from water bodies, as well as surrounding beaches.

The following measures should be implemented to reduce or avoid potential project-level impacts to biological resources:

Assuming any unique species are present, plant number and species diversity could be maintained by either preserving them prior, during, and after the construction of vortex separation systems or by re-establishing and maintaining the plant communities post construction.

When the specific projects are developed and sites identified, a search of the California Natural Diversity Database could be employed to confirm that any potentially sensitive plant species or biological habitats in the site area are properly identified and protected as necessary. Focused protocol plant surveys for special-status-plant species could be conducted at each site location, if appropriate. If sensitive plant species occur on the project site mitigation would be required consistent with appropriate expert analysis. Mitigation measures shall be developed in coordination with U.S. Fish and Wildlife Service and California Department of Fish and Wildlife. Responsible agencies should endeavor to avoid compliance measures that could result in reduction of the numbers of any unique, rare or endangered species of plants, and instead opt for such measures as enforcing litter ordinances in sensitive habitat areas, or siting physical compliance measures sufficiently upstream or downstream of sensitive areas to avoid any impacts.

In the case that landscaping is incorporated into the specific project design, the possibility of disruption of resident native species could be avoided or minimized by using only plants native to the area. Use of exotic invasive species or other plants listed in the Exotic Pest Plant of Greatest Ecological Concern in California should be prohibited (California Exotic Pest Plant Council 1999).

Responsible agencies should endeavor to avoid compliance measures that could result in significant impacts to unique, rare or endangered (special-status) species, should any such species be present at locations where such compliance measures might otherwise be performed, and instead opt for such measures as enforcing litter ordinances in sensitive habitat areas. Mitigation measures, however, could be implemented to ensure that potentially significant impacts to special status animal species are less than significant. When the specific projects are developed and sites identified a search of the California Natural Diversity Database could be employed to confirm that any potentially special-status animal species in the site area are properly identified and protected as necessary. Focused protocol animal surveys for special-status animal species should be conducted at each site location.

If special-status animal species are potentially near the project site area two weeks prior to grading or the construction of facilities and per applicable U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife protocols, pre-construction surveys to determine the presence or absence of special-status species would be conducted. The surveys should extend off site to determine the presence or absence of any special-status species adjacent to the project site. If special-status species are found to be present on the project site or within the buffer area, mitigation should be required consistent with appropriate expert analysis. To this extent, mitigation measures would be developed in coordination with the U.S. Fish and Wildlife Service and California Department of Fish and Wildlife to reduce potential impacts.

If vortex separation systems are implemented at locations where they would foreseeably adversely impact species migration or movement patters, mitigation measures previously described could be implemented to ensure that impacts which may result in a barrier to the migration or movement of animal is less than significant. Any site-specific wildlife crossings should be evaluated in consultation with California Department of Fish and Wildlife. If a wildlife crossing would be significantly impacted in an adverse manner, then the design of the project should include a new wildlife crossing in the same general location.

If construction occurs during the avian breeding season for special status species and/or Migratory Bird Treaty Act -covered species, generally February through August, then prior (within two weeks) to the onset of construction activities, surveys for nesting migratory avian species would be conducted on the project site following U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife guidelines. If no active avian nests are identified on or within 200 feet of construction areas, no further mitigation would be necessary.

Alternatively, to avoid impacts, the agencies implementing the final Trash Amendments may begin construction after the previous breeding season for covered avian species and before the next breeding season begins. If a protected avian species was to establish an active nest after construction was initiated and outside of the typical breeding season (February – August), the project sponsor, would be required to establish a buffer of 200 feet or other measure that would result in equivalent mitigation between the construction activities and the nest site.

If active nest for protected avian species are found within the construction footprint or within the 200-foot buffer zone, construction would be required to be delayed within the construction footprint and buffer zone until the young have fledged or appropriate mitigation measures responding to the specific situation are developed in coordination with U.S. Fish and Wildlife Service or California Department of Fish and Wildlife. These impacts are highly site specific, and assuming they are foreseeable, they would require a project-level analysis and mitigation plan.

Finally, to the extent feasible, responsible agencies should endeavor to avoid compliance measures that could result in significant barriers to the beneficial migration or movement of animals, and instead opt for such measures as enforcing litter ordinances in sensitive areas. No significant impact is anticipated after mitigation.

Trash Nets

Trash nets are installed within the storm drain systems either inline or at the end of pipe in urbanized areas where native habitat or special-status species usually are absent. As such, impacts to biological resources would likely not occur, including impacts to species diversity, impacts to special-status species, impacts to habitat, or impacts to wildlife migration. Trash nets used for the purposes of compliance with the final Trash Amendments would not be located within a stream channel, but rather in the storm drain itself and would not result in a foreseeable deterioration of existing fish habitat. Furthermore, because installation of trash nets requires minimal construction and ground disturbance and is accomplished within the existing pipeline, the installation of trash nets does not have the potential to cause a significant impact on biological resources. No mitigation is required since no impact is anticipated.

Gross Solids Removal Devices

Like vortex separation systems, Gross Solids Removal Devices are inline structural trash removal devices that are implemented in urbanized areas. As such, the project-level impacts on biological resources due to implementation of Gross Solids Removal Devices would be similar to the project-level impacts associated with vortex separation systems.

The proposed measures to lessen impacts from Gross Solids Removal Devices would be similar to the proposed measures for vortex separation systems. No potentially significant impact is anticipated after measures are applied.

Enforcement of Litter Laws

Enforcement of litter laws would involve no relative change to the baseline physical environment related to biological resources, either directly or indirectly and would have no impact on biological resources. Complying with existing statewide and local litter laws and ordinances would eliminate the substantial adverse environmental impacts from the litter, and the need for additional controls that could potentially generate their own nominal biological impacts. No mitigation is required since no impact is anticipated.

Increased Street Sweeping

Increased street sweeping and storm drain cleaning would involve no direct change to the physical environment related to biological objectives. Indirect impacts could include an increase in ambient noise levels, but this would not result in a significant impact to general wildlife species adapted to developed environments. No mitigation is required since no significant impact is anticipated.

Public Education

Public education would involve no change to the physical environment related to biological resources, either directly or indirectly and would have no impact on biological resources. Successful public education strategies would eliminate the substantial adverse environmental impacts from the litter, and the need for additional structural controls that generate their own nominal biological impacts. No mitigation is required since no impact is anticipated.

Ordinances

Similar to enforcement of litter laws and public education, ordinances are expected to have no impact or less-than-significant impact on biological conditions. Successful ordinances would eliminate the substantial adverse environmental impacts from the litter. No mitigation is required since no impact is anticipated.

6.3.4 Summary

Adverse impacts to biological resources are not expected to occur due to the nature of the areas where potential implementation measures used to comply with the final Trash Amendments would be located. Most areas are already extensively developed and the presence of significant biological resources is unlikely. In the event that specific compliance projects do encounter biological resources, measures have been identified to avoid or reduce potential impacts to less than significant levels, and these projects would need to have an independent environmental review done by the agency conducting the work.

6.4 Cultural Resources

6.4.1 Historic Resources

An historical resource includes resources listed in or eligible for listing in the California Register of Historical Resources. The California Register includes resources on the National Register of Historic Places, as well as California State Landmarks and Points of Historical Interest. Properties that meet the criteria for listing also include districts which reflect California's history and culture, or properties which represent an important period or work of an individual, or yield important historical information. Properties of local significance that have been designated under a local preservation ordinance (local landmarks or landmark districts) or that have been identified as local historical resources are also considered a historical resource (California Office of Historical Preservation 2006). Based on substantial evidence within the administrative record, any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California may also be considered to be an historical resource (CEQA Guidelines 15064.5(a)).

6.4.2 Archeological Resources

An archeological site may be considered an historical resource if it is significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military or cultural annals of California (PRC § 5020.1(j)) or if it meets the criteria for listing on the California Register (14 CCR § 4850).

If an archeological site is not an historical resource, but meets the definition of a "unique archeological resource" as defined in PRC Section 21083.2, then it should be treated in accordance with the provisions of that section.

6.4.3 Thresholds of Significance

A project would normally have a significant effect on cultural resources if it would:

- Cause a substantial adverse change in the significance of a historical resource as defined in section 15064.5 of the CEQA Guidelines.
- Cause a substantial adverse change in the significance of an archaeological resource pursuant to section 15064.5 of the CEQA Guidelines.
- Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.
- Disturb any human remains, including those interred outside of formal cemeteries.

6.4.4 Impacts and Mitigation

This is a statewide level analysis of the potential impacts from the final Trash Amendments. The specific location of potential impacts would be determined during the implementation of the final Trash Amendments.

Catch Basin Inserts

Catch basin inserts fit directly into curbside catch basins in urbanized areas and require no construction or ground disturbance. There is therefore no potential to impact cultural resources from this alternative means of compliance. No mitigation is required since no impact is anticipated.

Vortex Separation Systems

Vortex separation systems would be installed in currently urbanized areas where ground disturbance has previously occurred. Because these areas are already fully urbanized it is unlikely that their implementation would cause a substantial adverse change to historical or archeological resources, destroy paleontological resources, or disturb human remains. Depending, however, on the final location of facilities, potential impacts to cultural resources could occur. Paleontological resources can be found in areas containing fossil-bearing formations. Archaeological resources have been found within urbanized areas. Historic and architectural resources have also been found within urbanized areas. The site-specific presence or absence of these resources is unknown because the specific locations for vortex separation systems would be determined by responsible agencies at the project level. Installation of these systems could result in minor ground disturbances, which could impact cultural resources if they are sited in locations containing these resources and where disturbances have not previously occurred.

Upon determination of specific locations for vortex separation systems, responsible agencies should complete further investigation, including consultation with Native American tribes, to make an accurate assessment of the potential to affect historic, archaeological, or historic resources or to impact any human remains. If potential impacts are identified, measures to reduce impact could include project redesign, such as the relocation of facilities outside the boundaries of archeological or historical sites. According to the California Office of Historic Preservation, avoidance and preservation in place are the preferable forms of mitigation for archeological sites. When avoidance is infeasible, a data recovery plan should be prepared which adequately provides for recovering scientifically consequential information from the site. Studies and reports resulting from excavations must be deposited with the California Historical Resources Regional Information Center. No potentially significant impact is anticipated after these measures are taken.

Trash Nets

Trash nets are installed within the storm drain system either inline or at the end of pipe. Installation requires no ground disturbance which might impact cultural resources. No mitigation is required since no impact is anticipated.

Gross Solids Removal Devices

Like vortex separation systems, Gross Solids Removal Devices are inline structural trash removal devices that are implemented in urbanized areas. As such, the project-level impacts on cultural resources due to implementation of Gross Solids Removal Devices would be similar to the project-level impacts associated with vortex separation systems.

The proposed measures to lessen the impacts from Gross Solids Removal Devices would be similar to the proposed measures for vortex separation systems. No potentially significant impact is anticipated after these measures are applied.

Enforcement of Litter Laws

Enforcement of litter laws would involve no change to the physical environment related to cultural resources, either directly or indirectly and would have no impact on cultural resources. No mitigation is required since no impact is anticipated.

Increased Street Sweeping

Increased street sweeping and storm drain cleaning would occur in urbanized areas along public rights of way and would have no potential to impact cultural resources. No mitigation is required since no impact is anticipated.

Public Education

Public education would involve no change to the physical environment related to cultural resources, either directly or indirectly and would have no impact on cultural resources. No mitigation is required since no impact is anticipated.

Ordinances

Ordinances would involve no change to the physical environment related to cultural resources, either directly or indirectly, and would have no impact on cultural resources. No mitigation is required since no impact or less-than significant is anticipated.

6.4.5 Summary

While the potential for adverse impacts to cultural resources is low, there still exists a chance that cultural resources may occur at specific locations where implementation measures could be installed. Measures have been identified that could reduce potential impacts to less than significant levels and should be incorporated into site-specific projects carried out by the local agency.

6.5 Geology/Soils

6.5.1 Thresholds of Significance

A project would normally have a significant effect on the environment if it would:

- Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:
    - Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault (refer to Division of Mines and Geology Special Publication 42);
    - Strong seismic ground shaking;
    - Seismic-related ground failure, including liquefaction; and/or
    - Landslides.

- Result in substantial soil erosion or the loss of topsoil;
- Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse;
- Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property; or
- Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of waste water.

6.5.2 Impacts and Mitigation

This is a statewide level analysis of the potential impacts from each compliance measure. The specific location of each compliance measure would be determined during the implementation of the final Trash Amendments.

Catch Basin Inserts

Catch basin inserts fit directly into curbside catch basins in urbanized areas and require no construction or ground disturbance. There is, therefore, no potential to impact geology or soils resources from this alternative means of compliance. No mitigation is required since no impact is anticipated.

Vortex Separation Systems

No impact due to exposure of people to, or property to, geologic hazards such as rupture of a known earthquake fault, strong seismic ground shaking, liquefaction, or landslides is expected from the implementation of vortex separation systems. Although areas of the state are subject to geologic hazards, compliance with standard design and construction specifications and the recommendations of geotechnical studies prepared at the project level would reduce the risk of damage from seismic-related hazards. Furthermore, it is not reasonably foreseeable that responsible agencies would choose to comply with the final Trash Amendments through structural means in areas where doing so would result in exposure of people or property to geologic hazards. Rather, it is foreseeable that localities would avoid such compliance measures in lieu of other compliance measures, such as enforcing litter ordinances in sensitive areas.

Wind or water erosion of soils may occur as a short-term impact during installation of vortex separation systems. Siltation or deposition within the vortex separation systems may occur, resulting in reduction in siltation or deposition in downstream areas. Reduction in siltation and deposition in downstream areas may be considered a positive impact as fine sediments may contain toxic pollutants. Little or no impact on erosion of affected watercourses is expected since the flow rate in the watercourses is not impacted by foreseeable methods of compliance.

Installation and operation of vortex separation systems would not cause or accelerate instability due to on- or off-site landslides, lateral spreading, subsidence, expansive soils, liquefaction, or collapse. Vortex separation systems would not be of the size or

scale to result in unstable earth conditions, changes in geologic substructures, topography or ground surface relief features, or destruction, covering or modification of any unique geologic or physical features. Typical units occupy about 4-1/2 square feet of plan view area for each cubic foot per second that they treat. Implementation of the final Trash Amendments may result in minor surface soil excavation during installation of vortex separation systems and result in temporarily unstable soil but would not, due to small size, however, lead to landslides, lateral spreading, subsidence, expansive soils, liquefaction, or collapse. Most of the relevant areas are already urbanized, and have already suffered soil compaction and hardscaping. Installation of vortex separation systems would occur within the existing storm drain systems.

Compliance with the final Trash Amendments would not require the use of septic tanks or alternative wastewater disposal systems. The presence or absence of soils incapable of adequately supporting their use is not relevant.

To the extent that vortex separation systems are installed in areas subject to geologic hazards, such as, ground shaking, liquefaction, liquefaction-induced hazards, or landslides, geotechnical studies prepared as part of the pre-design process would identify site-specific soil and subsurface conditions and specify design features would keep potential seismic related impacts within acceptable levels. Compliance with existing regulations, building codes, and standards specifications would also keep potential impacts within acceptable levels. The most appropriate measure for potential fault rupture hazards is avoidance (e.g., building setbacks), as most surface faulting is confined to a relatively narrow zone a few feet to tens of feet wide (California Geological Survey 2002).

To the extent that the installation of vortex separation systems causes an increase in erosion, typical established best management practices would be used during implementation to minimize offsite sediment runoff or deposition. Construction sites are required to retain sediments on site, either under a CGP permit or through the construction program of the applicable MS4 Phase I and II permit, which are already designed to minimize or eliminate erosion impacts on receiving water. No potentially significant impact is anticipated after these measures are taken.

To the extent that installation and operation of vortex separation systems could result in ground instability, potential impacts could be avoided or mitigated through mapping to site facilities away areas with unsuitable soils or steep slopes; design and installation in compliance with existing regulations; standard specifications and building codes; ground improvements such as soil compaction; and groundwater level monitoring to ensure stable conditions. No potentially significant impact is anticipated after these measures are taken.

To the extent that any soil is disturbed during installation of vortex separation systems, standard construction techniques, including but not limited to, shoring, piling, and soil stabilization can alleviate any potential impacts. Prior to earthwork, a geotechnical study would be conducted to evaluate geology and soil conditions. No potentially significant impact is anticipated after these measures are taken.

Trash Nets

Trash nets are installed within the storm drain system either inline or at the end of pipe. Installation requires no ground disturbance which might impact geology or soils resources. No mitigation is required since no impact is anticipated.

Gross Solids Removal Devices

Like vortex separation systems, Gross Solids Removal Devices are inline structural trash removal devices that are implemented in urbanized areas. As such, the project-level impacts on geology and soils resources due to implementation of Gross Solids Removal Devices would be similar to the project-level impacts associated with vortex separation systems.

The proposed measures to lessen the impacts from Gross Solids Removal Devices would be similar to the proposed measures for vortex separation systems. No potentially significant impact is anticipated after these measures are taken.

Enforcement of Litter Laws

Enforcement of litter laws would involve no change to the physical environment related to geologic and soil resources either directly or indirectly and would have no impact on geology and soils resources. No mitigation is required since no impact is anticipated.

Increased Street Sweeping

Increased street sweeping and storm drain cleaning would occur in urbanized areas along public rights of way and would have no potential to impact geology and soils resources. No mitigation is required since no impact is anticipated.

Ordinances

Ordinances would involve no change to the physical environment related to geologic and soil resources, either directly or indirectly, and would have no impact on geologic and soil resources. No mitigation is required since no impact to less-than-significant impact is anticipated.

6.5.3 Summary

Installation and maintenance of some full capture devices and treatment controls are not expected to result in potentially significant environmental effects with regard to geology and soils, because municipalities would not reasonably site BMPs where they would risk such impacts. Further, in the unlikely occurrence of such an impact, mitigation measures, which can be applied to reduce and/or eliminate these impacts, are available as described above. These mitigation measures are within the responsibility and jurisdiction of the responsible agencies subject to the final Trash Amendments and can or should be adopted by them (CCR, title 14, § 15091(a)(2)). The State Water Board does not direct which compliance measures responsible agencies choose to adopt or the mitigation measures they employ. The State Water Board does, however, recommend that appropriate measures be applied to reduce or avoid potential environmental impacts. Although this analysis concludes that, based on substantial evidence on the record, on a statewide level analysis, all impacts would be less than significant with mitigation; it is foreseeable that these measures may not

always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. Although there is no information on the record that this would occur, in the event that a specific measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the final Trash Amendments.

6.6 Greenhouse Gas Emissions

General scientific consensus and increasing public awareness regarding global warming and climate change have placed new focus on the CEQA review process as a means to address the effects of greenhouse gas emissions from proposed projects on climate change.

Global warming refers to the recent and ongoing rise in global average temperature near Earth's surface. It is caused mostly by increasing concentrations of greenhouse gases in the atmosphere. Global warming is causing climate patterns to change. Global warming itself, however, represents only one aspect of climate change.

Climate change refers to any significant change in the measures of climate lasting for an extended period of time. In other words, climate change includes major changes in temperature, precipitation, or wind patterns, among other effects, that occur over several decades or longer.

Increases in the concentrations of greenhouse gases in the Earth's atmosphere are thought to be the main cause of human-induced climate change. Greenhouse gases naturally trap heat by impeding the exit of infrared radiation that results when incoming ultraviolet solar radiation is absorbed by the Earth and re-radiated as infrared radiation. The principal greenhouse gases associated with anthropogenic emissions are carbon dioxide, methane, nitrous oxide, sulfur hexafluoride, perfluorocarbon, nitrogen trifluoride, and hydrofluorocarbon (Health and Safety Code, § 38505, subdivision (g); CEQA Guidelines, § 15364.5). Water vapor is also an important greenhouse gas, in that it is responsible for trapping more heat than any of the other greenhouse gases. Water vapor, however, is not a greenhouse gas of concern with respect to anthropogenic activities and emissions. Each of the principal greenhouse gases associated with anthropogenic climate warming has a long atmospheric lifetime (one year to several thousand years). In addition, the potential heat trapping ability of each of these gases vary significantly from one another. Methane for instance is 23 times more potent than carbon dioxide, while sulfur hexaflouride is 22,200 times more potent than carbon dioxide (Intergovernmental Panel on Climate Change 2001). Conventionally, greenhouse gases have been reported as "carbon dioxide equivalents." Carbon dioxide equivalents take into account the relative potency of non-carbon dioxide greenhouse gases and convert their quantities to an equivalent amount of carbon dioxide so that all emissions can be reported as a single quantity.

The primary man-made processes that release these greenhouse gases include: (1) burning of fossil fuels for transportation, heating and electricity generation, which release primarily carbon dioxide; (2) agricultural practices, such as livestock grazing and crop residue decomposition and application of nitrogen fertilizers, that release methane

and nitrous oxide; and (3) industrial processes that release smaller amounts of high global warming potential gases.

In 2005, Executive Order S-3-05 proclaimed that California is vulnerable to the effects of climate change. To combat those concerns, the Executive Order established a long-range greenhouse gas reduction target of 80percent below 1990 levels by 2050.

Subsequently, Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006 (Chapter 488, Statutes of 2006, enacting § 38500-38599 of the Health and Safety Code) was signed. AB 32 requires California to reduce statewide greenhouse gas emissions to 1990 levels by 2020. AB 32 directed the California Air Resources Board to develop and implement regulations that reduce statewide greenhouse gas emissions.

The Climate Change Scoping Plan approved by the California Air Resources Board in December 2008, outlines the State's plan to achieve the greenhouse gas reductions required in AB 32.

Senate Bill (SB) 97, signed in August 2007 (Chapter 185, Statutes of 2007, enacting § 21083.05 and 21097 of the Public Resources Code), acknowledges that climate change is a prominent environmental issue that requires analysis under CEQA. This bill directed the Office of Planning and Research to prepare, develop, and transmit guidelines for the feasible mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions to the California Resources Agency. Office of Planning and Research developed a technical advisory suggesting relevant ways to address climate change in CEQA analyses. The technical advisory also lists potential mitigation measures, describes useful computer models, and points to other important resources. In addition, amendments to CEQA guidelines implementing SB 97 became effective on March 18, 2010.

6.6.1 Thresholds of Significance

A project would normally have a significant effect on the environment if it would:

- Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment.
- Conflict with an applicable plan, amendment or regulation adopted for the purpose of reducing the emissions of greenhouse gases.

6.6.2 Impacts and Mitigation

The operation of construction equipment for the installation of trash collection devices and the operation of new or increase in maintenance equipment and street sweepers would generate greenhouse gas emissions over baseline conditions. Consistent with the air quality analysis in Section 6.2, greenhouse gas emissions due to construction equipment would be short-term and limited to minor amounts of construction equipment and therefore would not significantly increase greenhouse gas levels in the environment. Greenhouse gas levels are not expected to rise significantly since mitigation measures are available to reduce greenhouse gas emissions due to construction, maintenance and street sweeping activities.

The California Department of Water Resources has developed a set of BMPs to reduce greenhouse gas emissions from California Department of Water Resources construction and maintenance activities (California Department of Water Resources 2012). These BMPs can be used and/or modified to fit specific situations by the implementing agencies to reduce greenhouse gas emissions from their activities:

BMP 1. Evaluate project characteristics, including location, project work flow, site conditions, and equipment performance requirements, to determine whether specifications of the use of equipment with repowered engines, electric drive trains, or other high efficiency technologies are appropriate and feasible for the project or specific elements of the project.

BMP 2. Evaluate the feasibility and efficacy of performing on-site material hauling with trucks equipped with on-road engines.

BMP 3. Ensure that all feasible avenues have been explored for providing an electrical service drop to the construction site for temporary construction power. When generators must be used, use alternative fuels, such as propane or solar, to power generators to the maximum extent feasible.

BMP 4. Evaluate the feasibility and efficacy of producing concrete on-site and specify that batch plants be set up on-site or as close to the site as possible.

BMP 5. Evaluate the performance requirements for concrete used on the project and specify concrete mix designs that minimize greenhouse gas emissions from cement production and curing while preserving all required performance characteristics.

BMP 6. Minimize idling time by requiring that equipment be shut down after five minutes when not in use (as required by the State airborne toxics control measure [Title 13, § 2485 of the CCR]). Provide clear signage that posts this requirement for workers at the entrances to the site and provide a plan for the enforcement of this requirement.

BMP 7. Maintain all construction equipment in proper working condition and perform all preventative maintenance. Required maintenance includes compliance with all manufacturer's recommendations, proper upkeep and replacement of filters and mufflers, and maintenance of all engine and emissions systems in proper operating condition. Maintenance schedules shall be detailed in an Air Quality Control Plan prior to commencement of construction.

BMP 8. Implement tire inflation program on jobsite to ensure that equipment tires are correctly inflated. Check tire inflation when equipment arrives on-site and every two weeks for equipment that remains on-site. Check vehicles used for hauling materials off-site weekly for correct tire inflation. Procedures for the tire inflation program shall be documented in an Air Quality Management Plan prior to commencement of construction.

BMP 9. Develop a project specific ride share program to encourage carpools, shuttle vans, transit passes and/or secure bicycle parking for construction worker commutes.

BMP 10. Reduce electricity use in temporary construction offices by using high efficiency lighting and requiring that heating and cooling units be Energy Star compliant. Require that all contractors develop and implement procedures for turning off computers, lights, air conditioners, heaters, and other equipment each day at close of business.

BMP 11. For deliveries to project sites where the haul distance exceeds 100 miles and a heavy-duty class 7 or class 8 semi-truck or 53-foot or longer box type trailer is used for hauling, a SmartWay[16] certified truck would be used to the maximum extent feasible.

The final Trash Amendments would not conflict with any plan, amendment, or regulation adopted for the purpose of reducing greenhouse gas emissions. Most greenhouse gas reduction plans include replacing government owned vehicles with low or zero-emission vehicles (Marin County 2006, City of Pasadena 2009, City of Citrus Heights 2011, California Department of Water Resources 2012). Implementation of greenhouse gas reduction plans would reduce greenhouse gas emissions from activities undertaken to comply with the final Trash Amendments.

In 2007, the California Air Resources Board adopted the Off-Road Diesel Vehicle Regulation (CCR, title 13, article 4.8, chapter 9) which, when fully implemented, would significantly reduce emissions from off-road, non-agricultural, diesel vehicles with engines greater than 25 horsepower—the types of vehicles typically used in construction activities. The regulation required owners to replace the engines in their vehicles, apply exhaust retrofits, or replace the vehicles with new vehicles equipped with cleaner engines. The regulation also limited vehicle idling, required sales disclosure requirements, and reporting and labeling requirements. The first compliance date for large fleets was March 1, 2010; however, amendments have been made several times to extend the deadlines. When the regulation is fully implemented, owners of fleets of construction, mining, and industrial vehicles would have to upgrade the performance of their vehicle fleets to comply with the regulation.

The California Air Resources Board Scoping Plan (California Air Resources Board 2008) proposes a comprehensive set of actions designed to achieve the 2020 greenhouse gas emissions reductions required under AB 32. While some of the regulations would not be implemented until later, when they do take effect, they would likely result in reduced emissions from construction and maintenance activities. Specific actions in the Scoping Plan that would impact construction and maintenance activities include: low carbon fuel standard (Measure Transportation-2), tire inflation regulation

[16] The U.S EPA has developed the SmartWay truck and trailer certification program to set voluntary standards for trucks and trailers that exhibit the highest fuel efficiency and emissions reductions. These tractors and trailers are outfitted at point of sale or retrofitted with equipment that significantly reduces fuel use and emissions including idle reduction technologies, improved aerodynamics, automatic tire inflation systems, advanced lubricants, advanced powertrain technologies, and low rolling resistance tires.

(Measure Transportation-4), the heavy-duty tractor truck regulation (Measure Transporation-7), and commercial recycling (Measure Recycling and Waste-3).

In addition, other efforts by the California Air Resources Board would reduce air pollutant emissions through 2020, including the Diesel Risk Reduction Plan (California Air Resources Board 2000) and the 2007 State Implementation Plan. Measures in these plans would result in the accelerated phase-in of cleaner technology for virtually all of California's diesel engine fleets including trucks, buses, construction equipment, and cargo handling equipment at ports.

6.6.3 Summary

With the incorporation of BMPs and compliance with any plans, amendments, or regulations adopted for the purpose of reducing greenhouse gas emissions, projects undertaken to comply with the final Trash Amendments would not have a significant impact on the environment due to greenhouse gas emissions.

6.7 Hazards and Hazardous Materials

Hazards and hazardous materials are located throughout the urbanized portion of the state either as naturally occurring or man-made hazards. Contaminated soil and groundwater from commercial and industrial sites such as gas stations, dry cleaners, and manufacturing facilities are located throughout the state. Aboveground and underground storage tanks contain vast quantities of hazardous substances. Thousands of these tanks have leaked or are leaking, discharging petroleum fuels, solvents, and other hazardous substances into the subsurface. These leaks as well as other discharges to the subsurface that result from inadequate handling, storage, and disposal practices can seep into the subsurface and pollute soils and groundwater.

Both naturally occurring hazards and anthropogenic contaminated soils and groundwater could be encountered during the installation of structural treatment alternatives for implementation of the reasonably foreseeable compliance methods for the final Trash Amendments.

Individual projects also may generate hazardous emissions, as the full capture system would, by design, trap substances which could become hazardous to the public or to maintenance workers if not handled in a timely manner and disposed of appropriately. To the extent improper disposal of, for instance, household hazardous wastes result in them being trapped in structural compliance measures, and potentially allowing a release of such chemicals, local residents could be exposed to those effects. To a large extent, those effects are already occurring in the watershed (but further downstream) and should be considered baseline impacts. Nevertheless, the locality that originated the risk would become newly potentially exposed instead of downstream receptors, those impacts could be potentially significant in those locales. Such impacts could be avoided or diminished by educating the local community of the effects of improper disposal of such wastes, enforcing litter ordinances, and timely cleaning out inserts and structural controls.

There is also the potential for public health hazards associated with the installation, operation, and maintenance of structural trash removal devices. Use of heavy equipment during installation and maintenance of structural trash removal devices may add to the potential for construction accidents. Unprotected sites may also result in accidental health

hazards for people. In addition, certain structural devices may become a source of standing water. Any source of standing water can potentially become a source of vector production.

6.7.1 Thresholds of Significance

A project would normally have a significant effect on the environment if it would:

- Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials.
- Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the likely release of hazardous materials into the environment.
- Reasonably be anticipated to emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school.
- The project is located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code section 65962.5 and, as a result, would it create a significant hazard to the public or the environment.
- For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area.
- For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area.
- Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan.
- Expose people or structures to the risk of loss, injury or death involving wild land fires, including where wild lands are adjacent to urbanized areas or where residences are intermixed with wild lands.

6.7.2 Impacts and Mitigation

Catch Basin Inserts

Catch basin inserts fit directly into curbside catch basins in urbanized areas and require no construction or ground disturbance. There is, therefore, no potential to encounter contaminated soils or groundwater or other hazards from this alternative means of compliance. Since no construction is required, the use of hazardous materials or potential for construction accidents is unlikely during installation. Catch basin cleaning and maintenance, however, could pose risks to maintenance workers.

To the extent that catch basin cleaning and maintenance could pose risks to maintenance workers, measures to avoid these risks include requiring workers to obtain hazardous materials maintenance, record keeping, and disposal activities training, California

Occupational Health and Safety Administration -required Health and Safety Training, and California Occupational Health and Safety Administration Confined Space Entry training.

Vortex Separation Systems

It is reasonably foreseeable that hazards or hazardous materials could be encountered during the installation of vortex separation systems. Contamination could exist depending on the current and historical land uses of the area. Depending on their location, vortex separation systems could be proposed in areas of existing oil fields and/or methane zones or in areas with contaminated soils or groundwater. The use of hazardous materials (e.g., paint, oil, gasoline) and potential for accidents is also likely during installation.

Trash that is trapped by vortex separation systems could become hazardous to the public or to maintenance workers who collect and transport the trash if it is not handled in a timely manner and disposed of appropriately.

Installation of vortex separation systems could result in the temporary interference of emergency response or evacuation plans if construction equipment, road closures, or traffic interfered with emergency vehicles traveling through the installation area.

As vortex separation systems would be located in urbanized areas, it is not reasonably foreseeable that their installation would expose people to wildland fires. Furthermore, these are structural trash removal devices that would not serve as residences or places of employment. They would not result in a safety hazard for people residing or working within two miles of public airport or public use airport.

To the extent that installation of vortex separation systems could involve work with or near hazards or hazardous materials, potential risks of exposure can be alleviated with proper handling and storage procedures. The health and safety plan prepared for any project should address potential effects from cross contamination and worker exposure to contaminated soils and water and should include a plan for temporary storage, transportation and disposal of contaminated soils and water. Compliance with the requirements of California Occupational Health and Safety Administration and local safety regulations during installation, operation, and maintenance of these systems would prevent any worksite accidents or accidents involving the release of hazardous materials into the environment, which could harm the public, nearby residents and sensitive receptors such as schools. Systems can be redesigned and sites can be properly protected with fencing and signs to prevent accidental health hazards.

To the extent that trash trapped by vortex separation systems could become hazardous, impacts to maintenance workers and the public could be avoided or alleviated by educating the local community of the effects of improper disposal of such wastes, enforcing litter ordinances, and timely cleaning out inserts and structural controls.

To the extent that installation of vortex separation systems could interfere with emergency response or evacuation plans, traffic control plans should be used to manage traffic through installation zones.

To the extent that vortex separation systems become a source of standing water and vector production, design at the project-level can help reduce vector production from standing water. Netting can be installed over devices to further mitigate vector production. Vector control agencies may also be employed as another source of mitigation. Systems that are

prone to standing water can be selectively installed away from high-density areas and away from residential housing and/or by requiring oversight and treatment of those systems by vector control agencies.

Trash Nets

Trash nets are installed within the storm drain system either inline or at the end of pipe. There is therefore no potential to encounter contaminated soils or groundwater or other hazards from this alternative means of compliance. Since no construction is required, the use of hazardous materials or potential for construction accidents is unlikely during installation. No mitigation is required since no impact is anticipated.

To the extent that trash net cleaning and maintenance could pose risks to maintenance workers, measures to avoid these risks include requiring workers to obtain hazardous materials maintenance, record keeping, and disposal activities training, California Occupational Health and Safety Administration -required Health and Safety Training, and California Occupational Health and Safety Administration Confined Space Entry training.

Gross Solids Removal Devices

Like vortex separation systems, Gross Solids Removal Devices are inline structural trash removal devices that are implemented in urbanized areas. As such, the project-level impacts related to hazards and hazardous materials due to implementation of Gross Solids Removal Devices would be similar to the project-level impacts associated with vortex separation systems.

The proposed measures to decrease impacts from Gross Solids Removal Devices would be similar to the proposed measures for vortex separation systems.

Enforcement of Litter Laws

Enforcement of litter laws would involve no change to the physical environment related to hazards and hazardous materials, either directly or indirectly and would have no impact related to hazards, hazardous materials, or public health. No mitigation is required since no impact is anticipated.

Increased Street Sweeping

Increased street sweeping and storm drain cleaning would occur in urbanized areas along public rights of way and would have no potential impact related to hazards, hazardous materials, or public health. No mitigation is required since no impact is anticipated.

Public Education

Public education would involve no change to the physical environment related to hazards and hazardous materials, either directly or indirectly and would have no impact related to hazards, hazardous materials, or public health. No mitigation is required since no impact is anticipated.

Ordinances

Ordinances would involve no change to the physical environment related to hazards and hazardous materials, either directly or indirectly, and would have no impact on hazards

and hazardous materials, or public health. No mitigation is required since no impact to less-than-significant impact is anticipated.

6.7.3 Summary

Installation and maintenance of some treatment trash-reduction BMPs could result in potentially significant environmental effects with regard to hazards, hazardous materials, and public health. Measures can be applied, however, to reduce and/or eliminate these impacts, as described above. These measures are within the responsibility and jurisdiction of the responsible agencies subject to the final Trash Amendments and can or should be adopted by them (CCR, title 14, § 15091(a)(2)). The State Water Board does not direct which compliance measures responsible agencies choose to adopt or the mitigation measures they employ. The State Water Board does, however, recommend that appropriate measures be applied to reduce or avoid potential environmental impacts. Although this analysis concludes that, based on substantial evidence on the record, on a statewide level analysis, all impacts would be less than significant with mitigation; it is foreseeable that these measures may not always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. Although there is no information on the record that this would occur, in the event that a specific measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the final Trash Amendments.

6.8 Hydrology/Water Quality

6.8.1 Thresholds of Significance

The proposed project would result in a significant impact on hydrology or water quality if it would:

- Violate any water quality standards or waste discharge requirements.
- Substantially deplete groundwater supplies or interfere substantially with groundwater recharge, resulting in a net deficit in aquifer volume or a lowering of the local groundwater table level.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner that would result in substantial erosion or siltation on- or off-site.
- Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate of surface runoff in a manner that causes flooding on- or off-site, creating or contributing to an existing local or regional flooding problem;
- Create or contribute runoff water that would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff;
- Otherwise substantially degrade water quality;

- Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance rate Map or other flood hazard delineation map;
- Place within a 100-year flood hazard area structures that would impede or redirect floodflows; or
- Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam;
- Contribute to inundation by seiche, tsunami, or mudflow.

6.8.2 Impacts and Mitigation

The final Trash Amendments would not violate any water quality standards or waste discharge requirements; in fact, they are designed to improve water quality. Several reasonably foreseeable methods of compliance may have the potential to cause localized flooding and are described below. It is not reasonably foreseeable that increased street sweeping, enforcement of litter laws, or public education would negatively impact hydrology or water quality.

The installation, operation, and maintenance of full capture systems do not entail the use of groundwater resources, nor would it interfere with groundwater recharge. Multi-purpose projects may include a groundwater recharge component which would be beneficial for groundwater resources. No impacts to groundwater resources are anticipated.

The installation, operation, and maintenance of full capture systems would not alter the drainage pattern of the target areas nor increase the amount of runoff within those areas. Full capture systems are placed at the inlet (catch basin inserts) or outlet (trash nets) of the storm drain system, or inline (vortex separation systems) and do not require any type of re-contouring of the surrounding area nor alteration of any stream courses. The main concern is localized flooding caused by clogging of the trash capture devices, which is discussed below. No other impacts are anticipated.

Compliance with the final Trash Amendments would not place housing or other structures within a 100-year flood hazard area, nor would it expose people and structures to a significant risk of loss, injury, or death by flooding, seiche, tsunami, or mudflow. No impacts are anticipated.

Catch Basin Inserts

Catch basin inserts are manufactured frames that typically incorporate filters or fabric and placed in a curb opening or drop inlet to remove trash, sediment, or debris. They can also be perforated metal screens placed horizontally or vertically within a catch basin. These devices have less hydraulic effect than the vortex separation systems or the Gross Solids Removal Devices, however, flooding is still a potential hazard if the filters or screens became blocked by trash and debris and prevents the discharge of storm water into the drain causing localized flooding. This would be of particular concern in areas susceptible to high leaf-litter rates. This potential impact can be diminished through the use of inserts that are designed with automatic release

mechanisms or retractable screens that allow flow-through during wet-weather and by performing regular maintenance to prevent the buildup of trash and debris. Therefore, the exposure of people and property to flooding hazards after mitigation is considered less than significant.

Vortex Separation Systems

Vortex separation systems are devices designed to allow the incoming flow of urban runoff or storm water to pass through the device while capturing trash and other debris within the unit. These types of devices may result in a potentially significant impact due to flooding if the screens became blocked by trash and debris and prevent the discharge of storm water or if the vortex separation systems are not properly designed and constructed to allow for bypass of storm water during storm events that exceed the design capacity. This potential impact can be alleviated through the design of the vortex separation systems with overflow/bypass structures and by performing regular maintenance to prevent the build-up of trash and debris. Therefore, the exposure of people and property to flooding hazards after mitigation is considered less than significant.

The vortex separation systems would not alter the direction or slope of the stream channels in the lower watershed, therefore, no change in the direction of surface water flow would occur.

Trash Nets

Trash nets are devices that use the natural energy of the flow to trap trash, floatables and solids in disposable mesh nets. Trash nets can be installed at or below grade within existing storm water conveyance structures or retrofitted to an existing outfall structure with only minor modifications. These devices have less hydraulic effect than the vortex separation systems or the Gross Solids Removal Devices; however, flooding is still a potential hazard if the nets became blocked by trash and debris. This potential impact can be alleviated through sizing and designing trash nets to allow for bypass when storm events exceed the design capacity and by performing regular maintenance to prevent the buildup of trash and debris. Therefore, the exposure of people and property to flooding hazards after mitigation is considered less than significant.

Gross Solids Removal Devices

Gross Solids Removal Devices are devices designed to allow the incoming flow of urban runoff or storm water to pass through the device while capturing trash and other debris within the unit. These types of devices may result in a potentially significant impact due to flooding hazards if the screens became blocked by trash and debris and prevent the discharge of storm water or if the Gross Solids Removal Devices are not properly designed and constructed to allow for bypass of storm water during storm events that exceed the design capacity. This potential impact can be diminished through the design of the Gross Solids Removal Devices with overflow/bypass structures and by performing regular maintenance to prevent the buildup of trash and debris. Therefore, the exposure of people and property to flooding hazards after mitigation is considered less than significant.

The Gross Solids Removal Devices units would not alter the direction or slope of the stream channels in the lower watershed, therefore, no change in the direction of surface water flows would occur.

6.8.3 Summary

Installation and maintenance of some treatment trash-reduction BMPs could result in potentially significant environmental effects with regard to hydrology. Measures, however, can be applied to reduce and/or eliminate these impacts, as described above. These measures are within the responsibility and jurisdiction of the responsible agencies subject to the final Trash Amendments and can or should be adopted by them (CCR, title 14, § 15091(a)(2)). The State Water Board does not direct which compliance measures responsible agencies choose to adopt or the mitigation measures they employ. The State Water Board does, however, recommend that appropriate measures be applied to reduced or avoid potential environmental impacts. It is foreseeable that these measures may not always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. In the event that a specific measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the final Trash Amendments.

6.9 Land Use/Planning

6.9.1 Thresholds of Significance

The proposed project would have a significant environmental impact on land use if it would:

- Physically divide an established community.
- Conflict with any applicable land use plan, policy, or regulation to an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect.
- Conflict with any applicable habitat conservation plan or natural community conservation plan.

6.9.2 Impacts and Mitigation

Due to where they are currently located or would be planned for implementation, it is not expected that the final Trash Amendments and the reasonably foreseeable methods of compliance would either physically divide an established community or conflict with any applicable habitat conservation plan or natural community conservation plan.

Catch Basin Inserts

Since, catch basin inserts can be installed at or below grade within existing storm water catch basins with minor modifications to the storm water conveyance structure no adverse impacts are expected on present or planned land use.

Vortex Separation Systems

Vortex separation systems (i.e., Continuous Deflective Separation units) are installed below grade and are appropriate for highly urbanized areas where space is limited. In general, a vortex separation system occupies about 4-1/2 square feet of plan view area for each treated cubic feet per second of runoff, with the bulk of the plan view area being well below grade. Maintenance of the Continuous Deflective Separation unit involves the removal of the solids either by using a vactor truck, a removable basket or a clamshell excavator depending on the design and size of the unit.

The installation of vortex separation systems may require modification of storm water conveyance structures; however, these units would generally be sited below grade and within existing storm drain infrastructure. The installation of vortex separation systems is not expected to result in substantial alterations or adverse impacts to a present or planned land use. To the extent that there could be land use impacts at a specific location, these potential land use conflicts are best addressed at the project level. Since the State Water Board cannot specify the manner of compliance with the final Trash Amendments, the State Water Board cannot specify the exact location of trash removal devices. The various municipalities that might install these devices would need to identify local land use plans as part of a project-level analysis to ensure that projects comply with the final Trash Amendments as well as permitted land-use regulations and are consistent with land use plans, general plans, specific plans, conditional uses, or subdivisions.

Trash Nets

Since, trash nets can be installed at or below grade within existing storm water conveyance structures or retrofitted to an existing outfall structure with only minor modifications no adverse impacts are expected on present or planned land use.

Gross Solid Removal Devices

Gross Solids Removal Devices were developed by Caltrans to be retrofitted below grade into existing highway drainage systems or installed in future highway drainage systems. These devices are appropriate for highly urbanized areas where space is limited. The Gross Solids Removal Devices s can be designed to accommodate vehicular loading. Maintenance of the devices involves the removal of the solids either by using a vactor truck or other equipment.

The installation of Gross Solids Removal Devices may require modification of storm water conveyance structures; however, these units would generally be sited below grade and within existing storm drain infrastructure. The installation of Gross Solids Removal Devices is not expected to result in substantial alterations or adverse impacts to present or planned land use. To the extent that there could be land use impacts at a specific location, these potential land use conflicts are best addressed at the project level. Since the State Water Board cannot specify the manner of compliance with the final Trash Amendments, the State Water Board cannot specify the exact location of trash removal devices. The various municipalities that might install these devices would need to identify local land use plans as part of a project-level analysis to ensure that projects comply with permitted land-use regulations and are consistent with land use

plans, general plans, specific plans, conditional uses, or subdivisions.

Institutional Controls

It is not reasonably foreseeable that increased street sweeping, enforcement of litter laws, ordinances, or public education would alter present or planned land use.

6.9.3 Summary

Construction of vortex separation systems and Gross Solids Removal Devices would not result in permanent features such as aboveground infrastructure that would disrupt, divide, or isolate existing communities or land uses.

6.10 Noise and Vibration

6.10.1 Background

Noise

California Health and Safety Code section 46022 defines noise as “excessive undesirable sound, including that produced by persons, pets and livestock, industrial equipment, construction, motor vehicles, boats, aircraft, home appliances, electric motors, combustion engines, and any other noise-producing objects”. The degree to which noise can affect the human environment range from levels that interfere with speech and sleep (annoyance and nuisance) to levels that cause adverse health effects (hearing loss and psychological effects). Human response to noise is subjective and can vary greatly from person to person. Factors that influence individual response include the intensity, frequency, and pattern of noise; the amount of background noise present before the intruding noise; and the nature of work or human activity that is exposed to the noise source.

Sound results from small and rapid changes in atmospheric pressure. These cyclical changes in pressure propagate through the atmosphere and are often referred to as sound waves. The greater the amount of variation in atmospheric pressure (amplitude) leads to a greater loudness (sound level). Sound levels are most often measured on a logarithmic scale of decibels (dB). The decibel scale compresses the audible acoustic pressure levels which can vary from 20 micropascals (μPa), the threshold of hearing and reference pressure (0 dB), to 20 million μPa, the threshold of pain (120 dB) (Air & Noise Compliance 2006).

Table 10 provides examples of noise levels from common sounds.

Table 10. Common Sound Levels.

Outdoor Sound Levels	Sound Pressure (μPa)	Sound Level (dBA)	Indoor Sound Level
	6,324,555	110	Rock Band at 5m
Jet Over-flight at 300m		105	
	2,000,000	100	Inside NY Subway Train
Gas Lawn Mower at 1m		95	
	632,456	90	Food Blender at 1m
Diesel Truck at 15 m		85	
Noisy Urban Area (daytime)	200,000	80	Garbage Disposal at 1m
		75	Shouting at 1m
Gas Lawn Mower at 30m	63,246	70	Vacuum Cleaner at 3m
Suburban Commercial Area		65	Normal Speech at 1m
	20,000	60	
Quiet Urban Area (daytime)		55	Quiet Conversation at 1m
	6,325	50	Dishwasher in Adjacent Room
Quiet Urban Area (nighttime)		45	
	2,000	40	Empty Theater of Library
Quiet Suburb (nighttime)		35	
	632	30	Quiet Bedroom at Night
Quiet Rural Area (nighttime)		25	Empty Concert Hall
Rustling Leaves	200	20	
		15	Broadcast and Recording Studios
	63	10	
		5	
Reference Pressure Level	20	0	Threshold of Hearing

Source: Air & Noise Compliance 2006.

To determine ambient (existing) noise levels, noise measurements are usually taken using various noise descriptors. The following are brief definitions of typical noise measurements:

Community Noise Equivalent Level

The community noise equivalent level is an average sound level during a 24-hour day. The community noise equivalent level noise measurement scale accounts for noise source, distance, single-event duration, single-event occurrence, frequency, and time of day. Humans react to sound between 7:00 p.m. and 10:00 p.m. as if the sound were actually 5 decibels higher than if it occurred from 7:00 a.m. to 7:00 p.m. From 10:00 p.m. to 7:00 a.m., humans perceive sound as if it were 10 dBA higher than if it occurred from 7:00 a.m. to 7:00 p.m. due to the lower background noise level. Hence, the community noise equivalent level noise measurement scale is obtained by adding an additional 5 decibels to sound levels in the evening from 7:00 p.m. to 10:00 p.m., and 10 dBA to sound levels in the night after 10:00 p.m. and before 7:00 a.m. Because community noise equivalent level accounts for human sensitivity to sound, the community noise equivalent level 24-hour figure is always a higher number than the actual 24-hour average.

Equivalent Noise Level

Equivalent noise level is the average noise level on an energy basis for any specific time period. The equivalent noise level for 1 hour is the energy average noise level during the hour. The average noise level is based on the energy content (acoustic energy) of the sound. Equivalent noise level can be thought of as the level of a continuous noise that has the same energy content as the fluctuating noise level. The equivalent noise level is expressed in units of dBA.

Sound Exposure Level

Sound exposure level is a measure of the cumulative sound energy of a single event. This means that louder events have greater sound exposure level than quieter events. Additionally, events that last longer have greater sound exposure level than shorter events.

Audible Noise Changes

Studies have shown that the smallest perceptible change in sound level for a person with normal hearing sensitivity is approximately 3 decibels. A change of at least 5 decibels would be noticeable and likely would evoke a community reaction. A 10-decibel increase is subjectively heard as a doubling in loudness and would most certainly cause a community response. Noise levels decrease as the distance from the noise source to the receiver increases. Noise generated by a stationary noise source, or “point source,” would decrease by approximately 6 decibels over hard surfaces and 9 decibels over soft surfaces for each doubling of the distance. For example, if a noise source produces a noise level of 89 dBA at a reference distance of 50 feet, then the noise level would be 83 dBA at a distance of 100 feet from the noise source, 77 dBA at a distance of 200 feet, and so on over hard surfaces. Generally, noise is most audible when traveling along direct line-of-sight. Barriers, such as walls, berms, or buildings that break the line-of-sight between the source and the receiver greatly reduce noise

levels from the source because sound can reach the receiver only by bending over the top of the barrier (diffraction). Sound barriers can reduce sound levels by up to 20 dBA. If a barrier, however, is not high or long enough to break the line-of-sight from the source to the receiver, its effectiveness is greatly reduced.

Sensitive Receptors

Land uses that are considered sensitive to noise impacts are referred to as "sensitive receptors." Noise-sensitive receptors consist of, but are not limited to, schools, religious institutions, residences, libraries, parks, hospitals, and other care facilities.

Vibration

In contrast to airborne noise, ground-borne vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of groundborne vibration are trains, buses on rough roads, and construction activities such as blasting, pile-driving and operating heavy earth-moving equipment. The effects of ground-borne vibration include feelable movement of the building floors, rattling of windows, shaking of items on shelves or hanging on walls, and rumbling sounds. In extreme cases, the vibration can cause damage to buildings. A vibration level that causes annoyance would be well below the damage threshold for normal buildings.

The background vibration velocity level in residential areas is usually 50 VdB or lower, well below the threshold of perception for humans which is around 65 VdB. Most perceptible indoor vibration is caused by sources within buildings such as operation of mechanical equipment, movement of people or slamming of doors. Typical outdoor sources of perceptible ground-borne vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible. The range of interest is from approximately 50 VdB to 100 VdB. Background vibration is usually well below the threshold of human perception and is of concern only when the vibration affects very sensitive manufacturing or research equipment. Electron microscopes and high-resolution lithography equipment are typical of equipment that is highly sensitive to vibration.

6.10.2 General Setting

Noise

Existing noise environments will vary considerably based on the diversity of land uses and densities. In most urban environments automobile, truck, and bus traffic is the major source of noise. Traffic generally produces background sound levels that remain fairly constant with time. Individual high-noise-level events that can occur from time to time include honking horns, sirens, operation of construction equipment, and travel of noisy vehicles like trucks or buses. Air and rail traffic and commercial and industrial activities are also major sources of noise in some areas. In addition, air conditioning and ventilating systems contribute to the noise levels in residential areas, particularly during the summer months.

Regulatory Framework

The no longer extant California Office of Noise Control, California Department of Health Services developed guidelines showing a range of noise standards for various land use categories in the *1976 Noise Element Guidelines*. These guidelines are now found in Appendix C of the State of California General Plan Guidelines (Governor's Office of Planning and Research 2003). Cities within the state have generally incorporated this compatibility matrix into their General Plan noise elements. These guidelines are meant to maintain acceptable noise levels in a community setting based on the type of land use. Noise compatibility by different types of land uses is a range from "Normally Acceptable" to "Clearly Unacceptable" levels. The guidelines are used by cities within the state to help determine the appropriate land uses that could be located within an existing or anticipated ambient noise level.

Some of the reasonably foreseeable methods of compliance have the potential to affect noise levels. Noise within counties and cities are regulated by noise ordinances, which are found in the municipal code of the jurisdiction These noise ordinances limit intrusive noise and establish sound measurements and criteria, minimum ambient noise levels for different land use zoning classifications, sound emission levels for specific uses, hours of operation for certain activities (such as construction and trash collection), standards for determining noise deemed a disturbance of the peace, and legal remedies for violations.

Vibration

Major sources of groundborne vibration would typically include trucks and buses operating on surface streets, and freight and passenger train operations. The most significant sources of construction-induced groundborne vibrations are pile driving and blasting – neither of which would be involved in the installation or maintenance of structural implementation alternatives. Currently, the state of California has no vibration regulations or guidelines.

6.10.3 Thresholds of Significance

A project would normally have a significant effect on the environment if it would result in:

- Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies.
- Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels.
- A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project.
- A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

- Exposure of persons residing or working in the project area, for a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, to excessive noise levels.

- Exposure of persons residing or working in the project area to excessive noise levels, for a project within the vicinity of a private airstrip.

6.10.4 Impacts and Mitigation

Implementation of the final Trash Amendments would not cause a permanent increase in ambient noise levels. All construction and maintenance activities would be intermittent. The remaining thresholds may be exceeded for limited durations depending on the location and ambient noise levels at sites selected for installation of trash removal devices.

Increases in noise levels during installation and/or maintenance of some of the implementation alternatives would vary depending on the existing ambient levels at each site. Once a site has been selected, project-level analysis to determine noise impacts would involve: (i) identifying sensitive receptors within a quarter-mile vicinity of the site, (ii) characterizing existing ambient noise levels at these sensitive receptors, (iii) determining noise levels of any and all installation and maintenance equipment, and (iv) adjusting values for distance between noise source and sensitive receptor. In addition, the potential for increased noise levels due to installation of trash reduction structural controls is limited and short-term. Given the size of the individual projects and the fact that installation would occur in small discrete locations, noise impacts during installation would not foreseeably be greater, and would likely be less onerous than, other types of typical construction activities in urbanized areas, such as ordinary road and infrastructure maintenance activities, building activities, etc. These short-term noise impacts can be mitigated by implementing commonly-used noise abatement procedures, standard construction techniques such as sound barriers, mufflers and employing restricted hours of operation. Applicable and appropriate mitigation measures could be evaluated when specific projects are determined, depending upon proximity of construction activities to receptors.

Overall, noise levels for installation of several of the reasonably foreseeable methods of compliance are governed primarily by the noisiest pieces of equipment. For most construction equipment the engine is the dominant noise source. Typical maximum noise emission levels (Lmax) are summarized, based on construction equipment operating at full power at a reference distance of 50 feet, and an estimated equipment usage factor based on experience with other similar installation projects. The usage factor is a fraction that accounts for the total time during an eight-hour day in which a piece of installation equipment is producing noise under full power. Although the noise levels in Table 11 represent typical values, there can be wide fluctuations in the noise emissions of similar equipment based on two important factors: (1) the operating condition of the equipment (e.g., age, presence of mufflers and engine cowlings); and (2) the technique used by the equipment operator (aggressive vs. conservative).

Table 11. Typical Installation Equipment Noise Emission Levels.

Equipment	Maximum Noise Level, (dBA) 50 feet from source	Equipment Usage Factor	Total 8-hr Leq exposure (dBA) at various distances	
			50ft	100ft
Foundation Installation			83	77
Concrete Truck	82	0.25	76	70
Front Loader	80	0.3	75	69
Dump Truck	71	0.25	65	59
Generator to vibrate concrete	82	0.15	74	68
Vibratory Hammer	86	0.25	80	74
Equipment Installation			83	77
Flatbed Truck	78	0.15	70	64
Forklift	80	0.27	74	69
Large Crane	85	0.5	82	76

Source: Los Angeles Water Board 2007f.

Vortex Separation Systems

Installation of vortex separation systems would potentially involve removal of asphalt and concrete from streets and sidewalks, excavation and shoring, installation of reinforced concrete pipe, installation of the unit, and repaving of the streets and sidewalks. It is anticipated that installation activities would occur in limited, discrete, and discontinuous areas over a short duration. No major long term or geographically extensive construction activities are anticipated. It is anticipated that excavation, for the purpose of installation, and repaving would result in the greatest increase in noise levels during the period of installation. Table 11 provides noise levels generated by different machinery that may be used in installing the vortex separation systems. The manufacturer of the Continuous Deflective Separation unit (described in detail in Section 5) recommends that the unit receive maintenance 2 to 4 times a year depending on amount and frequency of precipitation. Maintenance involves cleaning using vacuum trucks, which would increase ambient noise levels. The increase in noise levels would be dependent on the proximity of sensitive receptors to the site. Maintenance is also expected to generate 2-4 vehicle trips per year, which is not expected to increase ambient noise levels noticeably.

Contractors and equipment manufacturers have been addressing noise problems for many years, and through design improvements, technological advances, and a better understanding of how to minimize exposures to noise, noise effects can be minimized. An operations plan for the specific construction and/or maintenance activities could be

developed to address the variety of available measures to limit the impacts from noise to adjacent homes and businesses. To minimize noise and vibration impacts at nearby sensitive sites, installation activities should be conducted during daytime hours to the extent feasible. There are a number of measures that can be taken to reduce intrusion without placing unreasonable constraints on the installation process or substantially increasing costs. These include noise and vibration monitoring to ensure that contractors take all reasonable steps to minimize impacts when near sensitive areas; noise testing and inspections of equipment to ensure that all equipment on the site is in good condition and effectively muffled; and an active community liaison program. A community liaison program should keep residents informed about installation plans so they can plan around noise or vibration impacts; it should also provide a conduit for residents to express any concerns or complaints.

The following measures would minimize noise and vibration disturbances at sensitive areas during installation:

- Use newer equipment with improved noise muffling and ensure that all equipment items have the manufacturers' recommended noise abatement measures, such as mufflers, engine covers, and engine vibration isolators intact and operational. Newer equipment will generally be quieter in operation than older equipment. All installation equipment should be inspected at periodic intervals to ensure proper maintenance and presence of noise control devices (e.g., mufflers and shrouding).
- Perform all installation in a manner to minimize noise and vibration. Use installation methods or equipment that will provide the lowest level of noise and ground vibration impact near residences and consider alternative methods that are also suitable for the soil condition. The contractor should select installation processes and techniques that create the lowest noise levels.
- Perform noise and vibration monitoring to demonstrate compliance with the noise limits. Independent monitoring should be performed to check compliance in particularly sensitive areas. Require contractors to modify and/or reschedule their installation activities if monitoring determines that maximum limits are exceeded at residential land uses.
- Conduct truck loading, unloading and hauling operations so that noise and vibration are kept to a minimum by carefully selecting routes to avoid going through residential neighborhoods to the greatest possible extent. Ingress and egress to and from the staging area should be on collector streets or higher street designations (preferred).
- Turn off idling equipment.
- Temporary noise barriers shall be used and relocated, as practicable, to protect sensitive receptors against excessive noise from installation activities. Consider mitigation measures such as partial enclosures around continuously operating equipment or temporary barriers along installation boundaries.

- The installation contractor should be required by contract specification to comply with all local noise and vibration ordinances and obtain all necessary permits and variances.

These and other measures can be classified into three distinct approaches as outlined in Table 12.

Table 12. Noise Abatement Measures**.**

Type of Control	Description
Source Control	*Time Constraints* – Prohibiting work during sensitive nighttime hours *Scheduling* – performing noisy work during less sensitive time periods *Equipment Restrictions* – restricting the type of equipment used *Substitute Methods* –using quieter equipment when possible *Exhaust Mufflers* – ensuring equipment have quality mufflers installed *Lubrication and Maintenance* – well maintained equipment is quieter *Reduced Power Operation* – use only necessary power and size *Limit equipment on-site* – only have necessary equipment onsite *Noise Compliance Monitoring* – technician on-site to ensure compliance
Path Control	*Noise barriers* – semi-portable or portable concrete or wooden barriers *Noise curtains* – flexible intervening curtain systems hung from supports Increased distance – perform noisy activities further away from receptors
Receptor Control	*Community participation* –open dialog to involve affected parties *Noise complaint process* – ability to log and respond to noise complaints

Source: Adapted from Thalheimer 2000.

Increases in ambient noise levels are expected to be less than significant once measures have been properly applied to reduce potential impacts.

Catch Basin Inserts

Installation of catch basin inserts should not involve any construction activity or the use of major equipment therefore no significant increase in ambient noise levels is anticipated.

Catch basins need to be cleaned regularly. Frequency of cleaning depends on the amount of trash flowing into the insert. Increased street sweeping can decrease the amount of trash, caught by catch basin inserts. Catch basins are cleaned out on varying schedules at a minimum frequency of once a year as a requirement of the MS4 Phase I or Phase II permit. This implementation measure does not require an increase in cleaning frequency above what is already required for existing permits, therefore no significant increase in noise levels over baseline are anticipated. It is not anticipated that ambient noise levels will be increased by the use of catch basin inserts. To the contrary it is expected that since the design of many of these inserts act to prevent trash from entering the catch basins, the frequency of cleanouts of these basins may be reduced as a result of reduced trash loading. In the unlikely event, however, that there should be an increase in noise levels generated by current clean-out practices, the

source, path and receptor control measures presented in Table 12 should be applied. Therefore, increases in ambient noise levels are expected to be less than significant once measures have been properly applied to reduce potential impacts.

Trash Nets

Installation of trash nets should not involve any construction activity or the use of major equipment therefore no significant increase in ambient noise levels is anticipated. Maintenance of the trash nets involves replacing the nets when full or after each major storm event as necessary. Frequency of maintenance would depend on the trash volumes generated in the catchment area of the net. Equipment used to detach and haul away the trash nets may result in temporary increases in ambient noise levels. In the unlikely event that there should be an increase in noise levels generated by the equipment used to detach and haul away nets, the source, path and receptor control measures presented in Table 12 should be applied. Therefore, increases in ambient noise levels are expected to be less than significant once measures have been properly applied to reduce potential impacts.

Gross Solid Removal Devices

Gross Solids Removal Devices are the full capture systems being used by Caltrans for highway drainage systems and as such would be located adjacent to freeways and major highways under Caltrans' jurisdiction. Installation of Gross Solids Removal Devices would involve activities similar to those for vortex separation system installation. Clean-outs of Gross Solids Removal Devices are expected to occur only once per year. Equipment and/or machinery employed in this exercise may not significantly increase ambient noise levels as the potential sites for these units would already be subject to high traffic noise levels. In addition, increase in noise levels due to clean-outs would be of low frequency and short duration. Therefore, the installation of Gross Solids Removal Device is not expected to cause any potentially significant impacts.

Increased Street Sweeping

Increased street sweeping would involve an increase in current street sweeping frequencies in order to reduce the amount of trash accumulating on streets between cleanings. Any increases in street sweeping frequencies would be geared towards high trash generation areas such as those with commercial and industrial land-uses. The increase in ambient noise levels is expected to be limited in duration. Therefore, any increase in ambient noise levels over baseline conditions are expected to be less than significant.

Other Institutional Controls

Litter enforcement, ordinances, and public education are not expected to create any increases in ambient noise levels, and no mitigation would be required.

6.10.6 Summary

Installation and maintenance of some structural trash-reduction BMPs could result in potentially significant environmental effects with regard to noise. Measures, however, can be applied to reduce and/or eliminate these impacts are available as described

above. These mitigation measures are within the responsibility and jurisdiction of the responsible agencies subject to the final Trash Amendments and can or should be adopted by them. The State Water Board does not direct which compliance measures responsible agencies choose to adopt or the mitigation measures they employ. The State Water Board does, however, recommend that appropriate measures be applied to reduced or avoid potential environmental impacts. It is foreseeable that these measures may not always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. Although there is no information on the record that this would occur, in the event that a specific mitigation measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the final Trash Amendments.

6.11 Public Services

6.11.1 Thresholds of Significance

A project would normally have a significant effect on the environment if it would result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services: (a) Fire protection, (b) Police protection, (c) School, (d) Parks, and (e) Other public facilities. (See Environmental Checklist in Appendix B for discussion).

6.11.2 Impacts and Mitigation

While, implementation of the final Trash Amendments may require some activities at or in the vicinity of public service facilities, the final Trash Amendments would not require the establishment of new or altered government facilities to provide the services outlined above. However, response times for fire and police protection may be temporarily affect during installation of trash collection devices and are discussed below.

Catch Basin Inserts

Although the delays due to installations would be more localized and of shorter duration than installation of vortex separation systems, since the installation of catch basin inserts is not as complicated as the other structural BMPs, more maintenance may be required depending on the design of these units, since the capacity for trash collection may be limited to the size of the unit. However, the environmental impacts, and mitigation for those impacts, associated with the installation, maintenance and monitoring of catch basin inserts are expected to be similar to those for the vortex separation systems. Therefore, the potential delays in response times for fire and police vehicles due to installation of catch basin inserts after mitigation are less then significant.

Vortex Separation Systems

There is potential for temporary delays in response times of fire and police vehicles due to road closure/traffic congestion during installation of the vortex separation systems. To mitigate potential delays the responsible agencies could notify local emergency and police service providers of construction activities and road closures, if any, and coordinate with the local fire and police providers to establish alternative routes and traffic control during the installation activities. Most jurisdictions have in place established procedures to ensure safe passage of emergency and police vehicles during periods of road maintenance, construction, or other attention to physical infrastructure, and there is no evidence to suggest that installation of these structural devices would create any more significant impediments than other such typical activities. Any construction activity would be subject to applicable building and safety codes and permits. Therefore, the potential delays in response times for fire and police vehicles after mitigation are less then significant.

Since the installation of vortex separation systems would not result in development of land uses for residential, commercial, and/or industrial uses nor would the these units result in an increase of growth, it is reasonably foreseeable that the vortex separation systems would not result in a need for new or altered fire or police protection services. In addition, Emergency Preparedness Plans could be developed in consultation with local emergency providers to ensure that the new vortex separation systems would not contribute to an increase in the cumulative demand for fire and police emergency services.

Once the vortex separation systems are installed and operating, maintenance and monitoring of the devices would be required to verify that the structural BMP is performing properly and as expected. Maintenance and monitoring activities may also cause road closures and/or traffic congestion, but the same measures can be implemented as those for installation of the structures.

Trash Nets

The environmental impacts associated with the installation, maintenance and monitoring of trash nets are similar to those for the catch basin inserts. As with the catch basin inserts, more maintenance may be required depending on the design of these units since, the capacity for trash collection may be limited to the size of the trash net. With implementation of the mitigation presented for the vortex separation systems, this impact would be less than significant.

Gross Solids Removal Devices

There is potential for temporary delays in response times of fire and police vehicles due to road closure/traffic congestion during installation of the Gross Solids Removal Devices. To mitigate potential delays the responsible agencies could notify local emergency and police service providers of construction activities and road closures, if any, and coordinate with the local fire and police providers to establish alternative routes and traffic control during the installation activities. Most jurisdictions have in place established procedures to ensure safe passage of emergency and police vehicles during periods of road maintenance, construction, or other attention to physical

infrastructure, and there is no evidence to suggest that installation of these structural devices would create any more significant impediments than other such typical activities. Any construction activity would be subject to applicable building and safety codes and permits. Therefore, the potential delays in response times for fire and police vehicles after mitigation are less then significant.

Since, the installation of Gross Solids Removal Devices would not result in development of land uses for residential, commercial, and/or industrial uses nor would the these units result in increased growth, it is reasonable foreseeable that the vortex separation system units would not result in a need for new or altered fire or police protection services. In addition, Emergency Preparedness Plans could be developed in consultation with local emergency providers to ensure that the new Gross Solids Removal Devices would not contribute to an increase in the cumulative demand for fire and police emergency services.

Once the Gross Solids Removal Devices are installed and operating, maintenance and monitoring of the devices would be required to verify that the structural BMP is performing properly and as expected. Maintenance and monitoring activities may also cause road closures and/or traffic congestion, but the same measures can be implemented as those for installation of the structures.

Increased Street Sweeping

Non-structural BMPs may include increased street sweeping. The impacts of these increases can be minimized by efficient timing of the increased street sweeping, for example, prior to storm events. By identifying land uses where trash production is high (e.g., commercial retail), an increase in street sweeping would yield the greatest results.

Ordinances

Ordinances are not expected to create any impacts to public services, and no mitigation would be required.

6.11.3 Summary

Installation and maintenance of structural trash-reduction BMPs could result in less than significant environmental effects with regard to public services. Measures, however, can be applied to reduce and/or eliminate these impacts, as described above. These mitigation measures are within the responsibility and jurisdiction of the responsible agencies subject to the final Trash Amendments and can or should be adopted by them. The State Water Board does not direct which compliance measures responsible agencies choose to adopt or the mitigation measures they employ. The State Water Board does, however, recommend that appropriate measures be applied to reduced or avoid potential environmental impacts. It is foreseeable that these measures may not always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. Although there is no information on the record that this would occur, in the event that a specific mitigation measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the final Trash Amendments.

6.12 Transportation/Traffic

6.12.1 Thresholds of Significance

A project would normally have a significant effect on the environment if it would:

- Conflict with an applicable plan, ordinance or amendment establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including, but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit.

- Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways.

- Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks.

- Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment). Result in inadequate emergency access.

- Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities.

6.12.2 Impacts and Mitigation

Implementation of the final Trash Amendments would not result in a change in air traffic patterns or substantially increase hazards due to design features or incompatible uses.

Vortex Separation Systems

The installation of vortex separation systems may result in additional vehicular movement. These impacts would be temporary and limited in duration to the period of installation. Maintenance requirements for trash removal devices demonstrate that devices could be emptied when they reach 85 percent capacity. Trash removal devices, however, can be designed so that they need be cleaned only once per storm season.

For example, the Los Angeles Water Board staff estimated that 3700 vortex separation systems would be needed in the Los Angeles River watershed. Assuming that these devices are cleaned once per storm season (November 1 to March 31, or 150 days), this translates to approximately 25 vehicle trips per day in the Los Angeles River watershed. An additional 25 trips per day, watershed-wide, would not foreseeably result in a substantial or significant change to traffic flow, other than short-term congestion on limited roadway segments. The approximately 25 trips per day are fewer than the number of trips that would trigger the requirement of a traffic impact analysis per the Los Angeles County Congestion Management Plan (Metropolitan Transit Authority 2004).

Consequently, the proposed project would be in conformance with the existing Los Angeles County Congestion Management Plan, and this impact would be less than significant (Los Angeles Water Board 2007f). As traffic in Los Angeles County represents the maximum impacts related to traffic congestion, impacts of the final Trash Amendments to traffic circulation are expected to be less than or similar to these results throughout the state.

To the extent that site-specific projects entail excavation in roadways, such excavations should be marked, barricaded, and traffic flow controlled with signals or traffic control personnel in compliance with authorized local police or California Highway Patrol requirements. These methods would be selected and implemented by responsible local agencies considering project level concerns. Standard safety measures should be employed including fencing, other physical safety structures, signage, and other physical impediments designed to promote safety and minimize pedestrian/bicyclists accidents. It is not foreseeable that this proposal would result in significant increases in traffic hazards to motor vehicles, bicyclists or pedestrians, especially when considered in light of those hazards currently endured in an ordinary urbanized environment.

In order to reduce the impact of construction traffic, implementation of a construction management plan for specified facilities could be developed to minimize traffic impacts upon the local circulation system. A construction traffic management plan could address traffic control for any street closure, detour, or other disruption to traffic circulation. The plan could identify the routes that construction vehicles would use to access the site, hours of construction traffic, and traffic controls and detours. The plan could also include plans for temporary traffic control, temporary signage, location points for ingress and egress of construction vehicles, staging areas, and timing of construction activity which appropriately limits hours during which large construction equipment may be brought on or off site. Potential impacts could also be reduced by limiting or restricting hours of construction so as to avoid peak traffic times and by providing temporary traffic signals and flagging to facilitate traffic movement. It is anticipated that impacts after mitigation would be less than significant.

Catch Basin Inserts

No construction activity or use of heavy equipment is anticipated for catch basin insert installation. Therefore additional vehicular movement during installation of the catch basin inserts to control trash is unlikely to be significant. Also, it is not anticipated that any such increase would have an adverse effect on traffic and transportation, as they would be limited and short-term. With respect to maintenance, catch basins need to be cleaned regularly. Frequency of cleaning depends on the amount of trash flowing in through the insert. This implementation measure does not require an increase in cleaning frequency above baseline conditions for what is already required for existing permits, therefore no significant increase in traffic is anticipated. Impacts from other maintenance activities, such as street sweeping, are not expected to be significant.

Trash Nets

The number of end-of-pipe trash nets installed would be limited by the number of suitable locations. Installation and maintenance of trash nets would create environmental impacts similar to those of the vortex separation systems.

Mitigation measures to be applied would be the same as those for the vortex separation systems. It is anticipated that impacts after mitigation would be less than significant.

Gross Solids Removal Devices

Gross Solids Removal Devices are the implementation alternatives developed by Caltrans for trash reduction from roadways. Hence their installation would foreseeably be limited to rights of way over which Caltrans has jurisdiction. Clean-outs of Gross Solids Removal Devices are expected to occur only once per year. Therefore, fewer Gross Solids Removal Devices would be installed than vortex separation systems within a given jurisdiction and, cleanout would be less frequent, so the impacts of installation and maintenance of Gross Solids Removal Devices on traffic are expected to be much less than those of vortex separation systems. Consequently, this impact would be a less than significant impact.

Increased Street Sweeping

The number of trips generated by increased street sweeping would depend of the magnitude of increase in sweeping frequency determined by any responsible agency choosing to use this implementation alternative. Increased street sweeping would not foreseeably be implemented alone for the final Trash Amendments. It is not clear how often street sweeping would be increased to comply with the final Trash Amendments at this point. If the stakeholders make decisions on the frequency of street sweeping, the impacts on traffic and transportation caused by increased street sweeping could be analyzed at the project level. Nevertheless, the impacts of increased street sweeping have been included in the reasonably foreseeable methods of compliance, such as catch basin inserts, that may also include increased street sweeping. It is not anticipated that such increases would have a significant impact on traffic and transportation.

Ordinances

Ordinances are not expected to create any impacts to transportation/traffic, and no mitigation would be required.

6.12.3 Summary

The foreseeable methods of compliance may entail short-term disturbances during installation of treatment controls to control trash. The specific project impacts can be mitigated by appropriate mitigation methods during installation. To the extent that significant adverse traffic impacts occur in a given locality, those effects are already occurring and should be considered baseline impacts. Nevertheless, to the extent the locality that originated the trash would become newly exposed to increased traffic from the need to properly dispose of trash generated locally instead of downstream jurisdictions; those impacts could be potentially significant in those locales. Under the final Trash Amendments, municipalities would abate locally generated trash, rather than causing the downstream cities and other stakeholders to suffer the effect of the trash or the cost of cleaning up the trash.

Installation and maintenance of full capture systems and treatment controls could result in potentially significant environmental effects with regard to transportation/traffic. Mitigation measures are available to be applied to reduce and/or eliminate these

impacts; these are described above. These mitigation measures are within the responsibility and jurisdiction of the responsible agencies and can or should be adopted by them. The State Water Board does not direct which compliance measures responsible agencies choose to adopt or which mitigation measures they employ. The State Water Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided. It is foreseeable that these mitigation measures may not always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. Although there is no information on the record that this would occur, in the event that a specific mitigation measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the final Trash Amendments.

6.13 Utilities/Service Systems

6.13.1 Thresholds of Significance

A project would normally have a significant effect on the environment if it would:

- Exceed wastewater treatment requirements of the applicable Regional Water Board. (See Environmental Checklist in Appendix B for discussion).
- Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects. (See Environmental Checklist in Appendix B for discussion).
- Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects.
- Have insufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed. (See Environmental Checklist in Appendix B for discussion).
- Result in a determination by the wastewater treatment provider which serves or may serve the project that it has inadequate capacity to serve the project's projected demand in addition to the provider's existing commitments. (See Environmental Checklist in Appendix B for discussion).
- Be served by a landfill with insufficient permitted capacity to accommodate the project's solid waste disposal needs. (See Environmental Checklist in Appendix B for discussion).
- Fail to comply with federal, state, and local statutes and regulations related to solid waste. (See Environmental Checklist in Appendix B for discussion).

6.13.2 Impacts and Mitigation

Potential projects undertaken to comply with the final Trash Amendments would not result in the need for a new or substantial alteration to water supply utilities. The implementation of the final Trash Amendments would not result in the development of any large residential, retail, industrial or any other development projects that would significantly increase the demand on the current water supply facilities or require new water supply facilities. There would be no impacts related to water supply and no mitigation is required.

Implementation of the final Trash Amendments involves a progressive reduction in trash discharges to the water bodies of the State through structural BMPs, enforcement of existing litter laws, and institutional controls. These strategies to reduce trash are not related to sewer systems[17] and would not affect Publicly Owned Treatment Works nor would they impact any septic tank systems. The implementation of the final Trash Amendments would not result in the need for a new or alterations to existing sewer or septic tank systems. The structural BMPs that may be implemented such as catch basin inserts would be implemented to update the storm drain system and reduce trash entering state waters. Except as otherwise noted, storm drain systems in California are completely separate from the sewer systems and septic tank systems. Thus, there would be no impacts related to sewer and septic tank systems and no mitigation is required.

Compliance with the final Trash Amendments would require that significant amounts of solid waste that would otherwise enter storm drains, be collected by institutional controls and structural methods for collecting trash, or by source control and proper litter disposal by citizens. To the extent that decreases in available landfill space may occur in a local upstream region, those effects are likely already occurring in downstream communities as a result of the improper disposal of trash by the upstream communities; such effects should be considered baseline impacts, as they are presently carried by downstream communities.

For example, the City of Long Beach uses “clam shell” tractors, other heavy duty equipment, and many, many truck trips to cart away the tons of trash generated from all the upstream cities. So while upstream communities may see an increase in the amount of solid waste delivered to their landfill as a result of the final Trash Amendments, downstream communities would see a proportionate decrease. The overall capacity of landfills throughout the state would not be affected. Furthermore, it is reasonably foreseeable that the final Trash Amendments would precipitate education about the environmental and economic effects of litter, and thereby stimulate greater

[17] The City of Sacramento (downtown area) and the City and County of San Francisco have combined sewer and storm water systems where storm water is conveyed to the Publicly Owned Treatment Works. (The City of Fresno also has a combined system, but its wastewater is discharged to infiltration basins, not to surface water.) Since any trash carried by storm water to the Publicly Owned Treatment Works would be collected at the Publicly Owned Treatment Works and not discharged to surface waters, these systems would not be subject to the final Trash Amendments. However, the Publicly Owned Treatment Works owners may want to implement the controls identified for the proposed Trash Amendments to reduce the amount of trash entering their facilities.

efforts to use less disposable materials, and to recycle more, thus reducing the use of resources and the amount of trash entering the landfills. Increased recycling would be considered a positive environmental impact.

In addition, to trash collected as part of compliance with the final Trash Amendments, there would be nominal amounts of construction debris generated by the installation of structural BMPs. Existing landfills should have adequate capacity to accommodate this limited amount of construction debris. In addition, many municipalities have construction and demolition debris recycling and reuse programs. Recycling and reuse of construction and demolition material has been shown to considerably reduce the amount of debris sent to landfills. For example, according to the County of Los Angeles, except under unusual circumstances, it is feasible to recycle or reuse at least 50% of construction and demolition debris (Los Angeles County Department of Public Works 2005). Impacts on the disposal of solid waste would be less than significant and no mitigation is required.

Storm Water Drainage

In order to achieve compliance with the final Trash Amendments, the storm water drainage systems may need to be retrofitted with structural BMPs such as catch basin inserts and or full capture systems. These structural BMPs have the potential to significantly impact the storm water drainage system. Impacts to the storm drains may range from potentially significant to less than significant with mitigation depending on the specific structural BMP implemented. The agencies implementing and complying with the final Trash Amendments would plan and implement the best full capture systems for their municipality. Overall, the installation of full and partial capture systems may substantially alter storm drain systems.

The most critical potential impact related to implementation of full or partial capture systems is the risk of increased flooding due to improperly designed or maintained structural controls. The trash collected by these devices (not the devices themselves) has the potential to impede the course and flow of flood waters through the storm drain system. This risk is considerably lower with properly designed and maintained full capture systems that include a flood event bypass system. Under large storm conditions, the trash capture unit would be bypassed and the storm water flows and the trash would be directly discharged to the receiving waters. The risk of increased street flooding is greater for the catch basin inserts. In general, the inserts are simple screens that are placed inside the catch basin to prevent large pieces of trash from being discharged into water bodies. If under storm conditions these screens were to become clogged with trash it would impede the flow of the storm water and could possibly cause flooding and adversely affect the operation of the public service facility (also discussed in Section 6.8 Hydrology/Water Quality).

The potential risk of increased flooding can be mitigated by proper design and maintenance. For example, the screens can be engineered to be removable and or retractable; the screens could be removed prior to forecasted large storm events to reduce the risk of flooding and adversely affect the operation of the public service facility (also discussed in Section 6.8 Hydrology/Water Quality).

The prevention and removal of trash from state waters through structural BMPs of catch basin inserts and full capture systems ultimately would lead to improved water quality and protection of aquatic life and habitat; expansion of opportunities for public recreational access; enhancement of public interest in our rivers, lakes, and ocean; public participation in restoration activities; and enhancement of the quality of life of riparian and shoreline residents. These improvements outweigh the risk of potentially increased flooding and adversely affect the operation of the public service facility (also discussed in Section 6.8 Hydrology/Water Quality); furthermore, proper design and maintenance of structural BMPs, as discussed above, would mitigate this risk. This impact is considered potentially significant and mitigation should be incorporated.

Recommended mitigation measures: (i) Design and install full capture systems by a licensed civil engineer or environmental engineer in consultation with a hydrologist to ensure there would be adequate capacity for storm water flows and or a storm water bypass system; and, (ii) Regularly maintain full capture systems to remove trash and to prevent the accumulation of trash -- especially prior to forecasted storm events.

Installation and maintenance of full capture systems and treatment controls would result in potentially significant environmental effects with regard to storm water drainage. Mitigation measures, which can be applied to reduce and/or eliminate these impacts, however, are available as described above. These mitigation measures are within the responsibility and jurisdiction of the agencies responsible for implementing the final Trash Amendments and can or should be adopted by them. The State Water Board directs neither the compliance measures responsible agencies choose to adopt, nor the mitigation measures they employ. The State Water Board does, however, recommend that appropriate mitigation measures be applied in order that potential environmental impacts be reduced or avoided. It is foreseeable that these mitigation measures may not always be capable of reducing these impacts to levels that are less than significant in every conceivable instance. Although there is no information on the record that this would occur, in the event that a specific mitigation measure or alternative may not reduce impacts to levels that are less than significant, the project proponent may need to consider an alternative strategy or combination of strategies to comply with the final Trash Amendments.

6.14 Other Dischargers

The final Trash Amendments would apply to discharges of trash not covered by a NPDES permit. The Water Boards may require the implementation of trash controls in areas or facilities that may generate trash, such as, high usage campgrounds, picnic areas, beach recreation areas, marinas, etc. The discharge of trash into water bodies from these areas usually occurs by direct deposition into the water or wind-borne deposition of trash from nearby areas.

The most likely means of compliance for these areas would be institutional controls including public education (e.g., signage to dispose of trash properly) and providing an appropriate level of trash collection (e.g., the frequency of trash collection is appropriate to prevent the overflow and spillage of trash from trash bins, which can then make its way to nearby waterways). Potential environmental impacts from these activities are

similar to those discussed for institutional controls in the previous sections. The implementation of institutional controls in these areas would not have a significant impact on the environment.

6.15 Time Extension

The proposed Trash Amendments provided a time extension to MS4 Phase I and II permittees with regulatory authority over land uses for each regulatory source control adopted by a MS4 Phase I or II permittee. Each regulatory source control adopted by a permittee could provide such permittee with a one-year time extension to achieve final compliance with either Track 1 or Track 2. The time extension option was proposed to receive public input on the potential advantages and disadvantages to this approach. However, subsequent to the State Water Board's public workshop and the public hearing on the proposed Trash Amendments, Senate Bill 270 (2014 Stats. Ch. 850) was enacted. That new law enacts a state-wide plastic bag carry-out ban pertaining to grocery stores and pharmacies that have a specified amount of sales in dollars or retail floor space, which goes into effect July 1, 2015, and imposes the same ban on convenience stores and liquor stores a year later. Such product ban was generally the type of regulatory source control contemplated and discussed with regard to consideration of the time extension option. Effectively enactment of Senate Bill 270 removed the need for regulatory source controls in the proposed Trash Amendments. With the enactment of Senate Bill 270, the final Trash Amendments omit "regulatory source controls" from a method to comply with Track 2. As a result, the final Trash Amendments omit any allowance of time extensions and will not be evaluated further.

6.16 Low-Impact Development Controls and Multi-Benefit Projects

The final Trash Amendments include compliance options referred to as LID controls and multi-benefit projects. Examples of LID controls are treatment controls that employ natural and constructed features that reduce the rate of storm water runoff, filter out pollutants, facilitate storm water storage onsite, infiltrate storm water into the ground to replenish groundwater supplies, or improve the quality of receiving groundwater and surface water. Examples of multi-benefit projects include projects that are designed to infiltrate, recharge or store storm water for beneficial reuse, develop or enhance habitat and open space through storm water and non-storm water management, prevent water pollution, and/or reduce storm water and non-storm water runoff volume.

Because LID controls and multi-benefit projects are part of a larger suite of compliance options and because these types of projects are highly site specific, the array of potential LID and multi-benefit projects is too vast to discuss within this statewide analysis. The range of potential environmental impacts can vary greatly between projects. For example, the City of Anaheim prepared a Mitigated Negative Declaration for its Brookhurst Street Improvement Project and found potential significant impacts to air quality, biological resources, and cultural resources unless mitigation measures were incorporated into the project (City of Anaheim 2010). The City of Pasadena is preparing an EIR for its Hahamongna Multi-Benefit/Multi-Use Project (City of Pasadena 2012). It has tentatively identified potential impacts to aesthetics, air quality, biological resources,

cultural resources, greenhouse gas emissions, hydrology and water quality, noise, and transportation/traffic.

Potential environmental impacts from LID or multi-benefit projects would depend on the size and location of the project. It is foreseeable that the overall project could have a significant effect on the environment. It would be speculation, however, as to what those impacts might be at this level of review. Furthermore, measures that may be incorporated into the project to account for trash issues would most likely be a minor part of the project as a whole. The final Trash Amendments would not affect what those impacts might be, and as such would not cause or increase the level of impact future LID or multi-benefit projects may or may not have. The permitting authority responsible for future LID and/or multi-benefit projects would need to conduct project-specific environmental reviews pursuant to CEQA, as appropriate.

6.17 Regulatory Source Controls (Ordinances)

"Regulatory source controls" was included in the proposed Trash Amendments as one of the several treatment controls that could be utilized by MS4 permittees with regulatory authority over priority land uses to comply with the prohibition of trash under Track 2. "Regulatory source controls" was defined in the proposed Trash Amendments as:

> Institutional controls that are enforced by an ordinance of the municipality to stop and/or reduce pollutants at their point of generation so that they do not come into contact with storm water. Regulatory source controls could consist of, but not be limited to, bans of single use consumer products.

Single use plastic bag bans are not anticipated to be enacted as ordinances in response to the Trash Amendments because (1) Senate Bill 270 has already enacted a mandatory statewide single use plastic bag ban, (2) the upcoming referendum on Senate Bill 270 won't succeed without a statewide majority vote, and (3) approximately 140 cities and counties have already adopted similar bans, which reflects a significant level of popular support for such bans. If, however, a permittee were to adopt a single use plastic bag ban or other ban as a means of complying with Track 2, it is expected that any such bans would be enacted in a manner similar to those previously adopted, in that they would not result in product substitutions or any significant environmental impacts. As with previously-adopted bans, the impacts of any new bans would be evaluated by the permittee. The courts have already upheld the use of negative declarations or categorical exemptions from CEQA for single use plastic bag bans. As a result, this Final Staff Report does not provide an environmental analysis of a ban on single use plastic bags.

Similar to the prior draft, however, the proposed Final Staff Report retains "institutional controls" as a permissible method an MS4 permittee could employ to comply with Track 2. The proposed final Trash Amendments' definition for "institutional controls" includes "ordinances":

> Institutional controls are non-structural best management practices (i.e., no structures are involved) that may include, but not be limited to, street sweeping, sidewalk trash bins, collection of the trash, anti-litter

educational and outreach programs, producer take-back for packaging, and ordinances.

Pursuant to that definition, a permittee's enactment of an ordinance remains an allowable type of institutional control which may be implemented to comply with Track 2, even though the proposed final Trash Amendments removed "regulatory source controls" as a permissible method. Contrary to ordinances or laws which prohibit distribution of plastic carry-out bags, which are typically accompanied with requirements and/or incentives to utilize reusable bags to avoid a product-substitution effect (such as Senate Bill 270), other types of product bans enacted by ordinance, such as take-out items, may involve a substitution of the banned item. Mere substitution would not result in reduced trash generation if such product substitution would be discarded in the same manner as the banned item. Any such product ban enacted by ordinance would not reduce trash and would not be an allowable Track 2 method to assist in achieving compliance. It is possible that an MS4 permittee's adoption of other types of ordinances (e.g., anti-litter laws or bans on smoking), may still be a reasonably foreseeable method of compliance, but those types of ordinances are not expected to cause potential environmental impacts through use of replacement products or through other indirect impacts.

The other types of institutional controls (e.g., street sweeping, sidewalk trash bins, collection of the trash, etc.) available for a permittee to comply with the trash prohibition under Track 2 are evaluated in the preceding sections under the resource potentially at issue.

7 OTHER ENVIRONMENTAL CONSIDERATIONS

This section of the Final Staff Report identifies and evaluates potential growth-inducing impacts[18] and cumulative impacts[19] that may arise from the final Trash Amendments.

7.1 Growth-Inducing Impacts

In compliance with the requirements to prepare a draft SED and meet the substantive requirements of CEQA, this section describes the potential for the final Trash Amendments to cause potential environmental impacts through the inducement of growth (see also Appendix B, Environmental Checklist, Population and Housing). Growth inducement occurs when projects affect the timing or location of either population or land use growth, or create a surplus in infrastructure capacity. Direct growth inducement occurs when, for example, a project accommodates populations in excess of those projected by local or regional planning agencies. Indirect growth inducement occurs when, for example, a project that accommodates unplanned growth consequently (i.e., indirectly) establishes substantial new permanent employment opportunities (for example, new commercial, industrial, or governmental enterprises). Another example of indirect growth is if a construction project generates substantial short-term employment opportunities that indirectly stimulate the need for additional housing and services.

7.1.1 Types of Growth

The primary types of growth that occur are: (1) development of land and (2) population growth. (Economic growth, such as the creation of additional job opportunities, also

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[18] The State CEQA Guidelines describe growth-inducing impacts as follows:

> …[T]he ways in which a proposed project could foster economic or population growth, or the construction of additional housing, either directly or indirectly, in the surrounding environment. Included in this are impacts which would remove obstacles to population growth…Increases in the population may tax existing community service facilities, requiring construction of new facilities that could cause significant environmental effects... [In addition,] the characteristics of some projects...may encourage and facilitate other activities that could significantly affect the environment, either individually or cumulatively. It must not be assumed that growth in any area is necessarily beneficial, detrimental, or of little significance to the environment. (14 CCR § 15126.2(d).)

[19] The State CEQA Guidelines define cumulative impacts as follows:

> "Cumulative impacts" refers to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts:
>
> (a) The individual effects may be changes resulting from a single project or a number of separate projects.
>
> (b) The cumulative impact from several projects is the change in the environment, which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects. Cumulative impacts can result from individually minor but collectively significant projects taking place over a period of time. (14 CCR § 15355.)

could occur; however, such growth generally would lead to population growth and, therefore, is included indirectly in population growth.)

Growth in Land Development

Growth in land development considered in this analysis is the possible physical development of residential, commercial, and industrial structures in and around where implementation of the final Trash Amendments and reasonably foreseeable methods of compliance may be located. Land use growth is subject to general plans, community plans, parcel zoning, and applicable entitlements and is dependent on adequate infrastructure to support development.

Population Growth

Possible population growth considered in this analysis is the possible growth in the number of persons that live and work in the areas in and around where implementation of the final Trash Amendments and reasonably foreseeable methods of compliance may be located. Population growth occurs from natural causes (births minus deaths) and net emigration from or immigration to other geographical areas. Emigration or immigration can occur in response to economic opportunities, life style choices, or for personal reasons. Although land use growth and population growth are interrelated, land use and population growth could occur independently from each other. This has occurred in the past where the housing growth is minimal, but population within the area continues to increase. Such a situation results in increasing population densities with a corresponding demand for services, despite minimal land use growth.

Overall development in the state is governed by local General Plans (developed by counties or cities), which are intended to plan for land use development consistent with California law. The General Plan is the framework under which development occurs, and, within this framework, other land use entitlements (such as variances and conditional use permits) can be obtained.

7.1.2 Existing Obstacles to Growth

The environmental analysis is required to discuss ways in which the proposed project could foster economic or population growth or the construction of additional housing. Included in this analysis is consideration as to whether the final Trash Amendments (or reasonably foreseeable methods of compliance) remove obstacles to population growth or may encourage and facilitate other activities that could significantly affect the environment. See 14 CCR section 15126.2(d). Obstacles to growth could include such things as inadequate infrastructure or public services, such as an inadequate water supply that results in rationing, or inadequate wastewater treatment capacity that results in restrictions in land use development. Policies that discourage either natural population growth or immigration also are considered to be obstacles to growth.

7.1.3 Potential for Compliance with the Trash Amendments to Induce Growth

Direct Growth Inducement

As some of the reasonably foreseeable methods of compliance of the final Trash Amendments focus on non-structural BMPs and improvements to storm drain systems located throughout urbanized portions of the watershed, the final Trash Amendments

would not result in the construction of new housing and, therefore, would not directly induce growth.

Indirect Growth Inducement

Two areas of potential indirect growth inducement are relevant to a discussion of the final Trash Amendments: (1) the potential for compliance with the final Trash Amendments to generate economic opportunities that could lead to additional immigration; and, (2) the potential for the final Trash Amendments to remove an obstacle to land use or population growth.

Installation of full capture systems or other methods of compliance within Track 2 to comply with the final Trash Amendments would occur over a ten-year time period. Installation and maintenance spending for compliance would generate jobs throughout the region and elsewhere where goods and services are purchased or used to install full capture systems. The alternatives would result in direct jobs and indirect jobs.

Although the construction activities associated with implementation of the final Trash Amendments would increase the economic opportunities in an area or region, this construction is not expected to result in or induce substantial or significant growth related to population increase or land use development. The majority of the new jobs that would be created by this construction are expected to be filled by persons already employed and residing in the area or region. The second area of potential indirect growth inducement is through the removal of obstacles to growth. The final Trash Amendments would require retrofit of existing public services or additional design requirements to new services (services that would occur without the final Trash Amendments). The drainage systems would not increase as a result of the final Trash Amendments. As discussed above, any obstacles that may exist to the location of public services and commensurate land use development or to population growth within an area affected by the final Trash Amendments would not be altered by the implementation of the final Trash Amendments.

7.2 Cumulative Impacts Analysis

In compliance with the requirements to prepare a draft SED and meet the substantive requirements of CEQA, this section describes the potential for the final Trash Amendments to cause a considerable contribution to a cumulatively significant impact (see also Appendix B, Environmental Checklist, Mandatory Findings of Significance).The fundamental purpose of the cumulative impacts analysis is to ensure that the potential environmental impacts of any individual project are not considered in isolation. Impacts that may be individually less than significant on a project specific basis, could pose a potentially significant impact when considered with the impacts of other past, present, and probable future projects.

The cumulative impact analysis need not be performed at the same level of detail as a “project level” analysis but must be sufficient to disclose potential combined effects that could constitute a cumulative significant adverse impact. The CEQA Guidelines direct that the cumulative impacts analysis either include a list of the past, present and probable future projects producing related or cumulative impacts or provide a summary

of projections and cumulative impact analysis contained in an applicable adopted plan or related planning document. (§ 15130, subd. (b)(1).)

This draft SED discusses whether the proposed Trash Amendments' incremental effect is cumulatively considerable and, where that is the case, describes the significant cumulative impacts of the proposed project in combination with past, present, and probable future projects. CEQA Guidelines direct that this cumulative impact analysis be either provided through the "list approach" of "projections approach". The cumulative impacts from implementation of the final Trash Amendments are discussed, for this statewide analysis, through analyzing the possible projects that could occur to cause impacts in combination of the final Trash Amendments in relation to existing land use planning throughout the state, in the following two sections: (1) the program level cumulative impacts, and (2) the project level cumulative impacts. On the program level, impacts from reasonably foreseeable statewide water quality actions and regional activities, including multiple TMDLs and permit requirements, are analyzed across the nine regional water boards, on a statewide basis. On the project level, it is not possible to provide an environmental analysis of individual probable future projects that could occur to cause impacts that would combine with impacts of the final Trash Amendments. The cumulative impacts analysis entails a general consideration of construction and other project-level activities that may occur in the vicinity of trash control implementation measures.

7.2.1 Program Cumulative Impacts

The State Water Board currently is developing a wide range of Statewide Policies and Significant General Permits. The entire list of Statewide Policies and Significant General Permits can be found in the State Water Board's Executive Director's report, which is updated on monthly basis.[20] In the April 22, 2014 Executive Director's Report, the active Statewide Policies and Significant General Permits are listed in Appendix B of the report (State Water Board 2014). The majority of these actions are not yet formally proposed but are considered reasonably foreseeable probable future projects, within the temporal scope of implementation of the final Trash Amendments.

Of the Statewide Polices and Significant General Permits actively being addressed by State Water Board, the following four projects have potential nexus to the scope of the final Trash Amendments thereby causing environmental impacts that may, in conjunction with impacts of the final Trash Amendments, cause a cumulative impact: (1) Proposed Toxicity Amendment to the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California (Toxicity Provisions); (2) Water Quality Control Policy for Wetland Area Protection and Dredge or Fill Permitting (Wetlands Policy); (3) Proposed Amendment to the Statewide Water Quality Control Plan for Ocean Waters to Address Desalination Intakes and Discharges, and to Incorporate Non-Substantive Changes (Desalination Amendment); and (4) Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary (Bay-Delta Plan).

[20] State Water Board Executive Director's Reports are accessible at: http://www.waterboards.ca.gov/board_info/exec_dir_rpts/

The State Water Board anticipates creating the ISWEBE Plan through the adoption of Toxicity Provisions. The goals of the Toxicity Provisions include: (a) a new method to determine the toxicity of discharges, (b) statewide numeric objectives, and (c) further standardization of toxicity provisions for NPDES dischargers and facilities subject to WDR and conditional waivers.

The Wetlands Policy has the goal of developing: (a) a wetland definition that would reliably define the diverse array of California wetlands based on the United States Army Corps of Engineers' wetland delineation methods to the extent feasible, (b) a regulatory mechanism for discharges of dredged or fill material into waters of the state, based on the 404 (b)(1) guidelines (40 C.F.R. parts 230-233) that includes a watershed focus, and (c) an assessment method for collecting wetland data to monitor progress toward wetland protection and to evaluate program development.

As with the Trash Amendments, the Desalination Amendment proposes to amend the Ocean Plan. The Desalination Amendment has four components: (a) implementation procedures for regional water boards to evaluate the best site, design, technology, and mitigation measures to minimize adverse impacts to aquatic life at new or expanding desalination facilities; (b) industry specific receiving water limits for salinity; (c) alternative implementation procedures for discharges of waste brine; and (d) provisions protecting sensitive habitats, species, Marine Protected Areas, and State Water Quality Protection Areas from degradation associated with desalination intakes and discharges.

The State Water Board is pursuing a four-phased process to develop and implement updates to the Bay-Delta Plan and flow objectives for priority tributaries to the Delta to protect beneficial uses in the Bay-Delta watershed. Phase 1 proposes to update the San Joaquin River flow and southern Delta water quality requirements included in the Bay-Delta Plan. Phase 2 proposes other comprehensive changes to the Bay-Delta Plan to protect beneficial uses not addressed in Phase 1. Phase 3 focuses on changes to water rights and other measures to implement changes to the Bay-Delta Plan from Phases 1 and 2. Phase 4 involves developing and implementing flow objectives for priority Delta tributaries outside of the Bay-Delta Plan updates.

In addition to the State Water Board actions, the regional water boards are in the process of developing a variety of basin plan amendments including TMDLs for different pollutants, as well as issuing various permits throughout the state. Examples include: Aquatic Ecosystem Restoration Policy (North Coast Water Board), Stream and Wetland Protection Policy (San Francisco Bay Water Board), TMDLs for Nitrogen Compounds and Orthophosphates in the Lower Salinas River Watershed (Central Coast Water Board), Implementation Plans for the TMDLs for Metals in the Los Cerritos Channel and for Metals and Selenium in the San Gabriel River and Impaired Tributaries (Los Angeles Water Board), Central Valley Salinity Alternatives for Long-Term Sustainability (Central Valley Water Board), Pesticide Prohibition Basin Plan Amendment (Lahontan Water Board), Revise Indicator Bacteria for a 17-Mile Reach of the Coachella Valley Storm Water Channel (Colorado River Water Board), Recreation Standards for Inland Fresh Surface Waters (Santa Ana Water Board), and Rainbow Creek Nitrogen and Phosphorus TMDLs (San Diego Water Board).

The goal of all of the Water Board's actions is to protect and improve the quality of the state's waters. Implementation measures identified during the development of these policies, amendments, and Basin Plan amendments, as well as the reasonably foreseeable methods of compliance for these actions, may have similar potential impacts as those identified for the final Trash Amendments. As such, there may be a cumulative impact to certain resources depending on the location and timing of the implementation measures. Potential cumulative impacts are discussed further in the following section.

7.2.2 Project Cumulative Impacts

Implementation of the final Trash Amendments would occur throughout the entire state and it would be speculative to attempt to estimate the specific project-level actions that could occur in and around the areas of implementation that would contribute to a cumulative effect of the final Trash Amendments and reasonably foreseeable methods of compliance. The reasonably foreseeable methods of compliance would typically occur in urban areas. The other types of actions that may occur in and around these urban areas are infrastructure maintenance, redevelopment projects, and infill projects. The impacts of these types of actions typically involve air quality, noise and traffic associated with construction and, depending on the timing of the implementation of the reasonably foreseeable methods of compliance, these impacts could combine with the potential impacts of the final Trash Amendments. The cumulative impacts of specific projects that will comply with the requirements of the final Trash Amendments should be considered by the implementing municipality or agency. Implementation of projects related to other nearby projects, however, may result in cumulative effects of the following nature:

1. Noise and Vibration - Local residents in the near vicinity of installation and maintenance activities related to compliance with the final Trash Amendments may be exposed to noise and possible vibration. The cumulative effects, both in terms of added noise and vibration at multiple implementation sites, and in the context of other unrelated projects, would most likely not be considered cumulatively significant due to the typically minor and temporary nature of the installation and maintenance activities that could cause the noise and possible vibration. However, if deemed a considerable contribution to a cumulative impact, mitigation methods include: (1) scheduling installation and maintenance activities during daytime hours; (2) noise and vibration monitoring; (3) noise testing and inspections of equipment; and (4) an active community liaison program.

2. Air Quality - Implementation of the final Trash Amendments, including the reasonably foreseeable methods of compliance, may cause additional emissions of criteria pollutants and slightly elevated levels of carbon monoxide during trash device installation activities and, to a lesser extent, possible maintenance activities. Implementation of the final Trash Amendments, in conjunction with all other activities within the area, may contribute to a region's nonattainment status during the installation period. Since installation and maintenance-related emissions are typically minor and temporary, compliance with the final Trash Amendments is not expected to not result in long-term significant cumulative air quality impacts. In the

short-term, cumulative impacts could be significant if the combined emissions from the individual projects exceed the threshold criteria for the individual pollutants. In this case, mitigation measures include: (1) use of construction, and maintenance vehicles with lower-emission engines; (2) use of soot reduction traps or diesel particulate filters; and (3) use of emulsified diesel fuel.

3. Transportation and Circulation - Compliance with the final Trash Amendments may involve contemporaneous installation activities at a number of sites. Further, installation of treatment controls may occur in the same general time and space as other related or unrelated projects. In these instances, construction activities from all projects could produce cumulative traffic effects which may be significant, depending upon a range of factors including the specific location involved and the precise nature of the conditions created by the dual construction activity. Mitigation to address this potentially significant cumulative impact would involve special coordination efforts by local, regional, and state entities regarding the timing of various construction and other activities adversely affecting traffic. Overall, with this mitigation, significant cumulative impacts are not anticipated since coordination can occur and, as appropriate, transportation mitigation methods are available as discussed previously.

4. Utilities and Service Systems – Compliance with the final Trash Amendments would involve the disposal of trash that is removed or prevented from entering state waters. The amount of trash collected as a result of the final Trash Amendments is not expected to increase substantially over baseline conditions. In addition, the final Trash Amendments are not expected to substantially affect other public services. Therefore, the cumulative effects of compliance activities, construction activities and other related projects on utilities such as land disposal sites is not a considerable contribution to the cumulative impact.

5. Greenhouse Gas Emissions - Compliance with the final Trash Amendments may involve contemporaneous installation activities at a number of sites. Further, installation of trash devices and other compliance measures, including maintenance activities and additional street sweeping, may occur in the same general time and space as other related or unrelated projects. In these instances, construction activities from all projects could produce greenhouse gas emissions which may have a significant cumulative impact, depending upon a range of factors (e.g., location, vehicular activity, machinery usage, etc.). As stated previously, the construction and maintenance activities associated with implementation of the final Trash Amendments would be short term and are not expected to cause substantial greenhouse gas emissions. However, the cumulative effect of greenhouse gases has been identified as a concern within California, the United States, and global climate and, therefore, this impact are considered potentially significant. With the incorporation of BMPs (see Section 6.6.2) and compliance with greenhouse gas reduction plans, amendments, or regulations, the cumulative effect of greenhouse gas emissions could be reduced to less-than-significant levels.

8 ALTERNATIVES ANALYSIS

State Water Board regulations require this SED to contain an analysis of range of reasonable alternatives to the project and reasonably foreseeable methods of compliance that could feasibly meet the project objectives and to avoid or substantially reduce any potentially significant adverse environmental impacts.[21] The State Water Board has identified the following six alternatives for analysis in the SED.

8.1 No Project Alternative

The purpose of assessing a No Project Alternative in an environmental document such as this SED is to allow decision makers and the public to compare the impacts of approving the proposed project with the impacts of not approving the proposed project. The No Project Alternative would involve the State Water Board deciding not to approve any amendments to the Ocean Plan or the ISWEBE Plan.

Under the No Project Alternative, trash would continue to accumulate in state waters and the adverse effects identified in Section 1 and Appendix A would continue to occur. Consistent with baseline conditions, beneficial uses of water would not be protected. Additionally, the number of trash-related 303(d) listing and TMDLs would continue for an increasing number of water bodies with a lack of statewide consistency. The lack of consistency would continue from a lack of a water quality objective specific for trash and variability between existing trash-related water quality objectives among Basin Plans. For this reason, the State Water Board determines that this is not the preferred alternative.

8.2 Regional Water Board Alternative

In the Regional Water Board Alternative, each regional water board would either adopt a water quality objective for trash to the respective basin plan or adopt individual TMDLs for 303(d) listed water bodies for trash. If the individual amendments and TMDLs (as well as their respective implementation strategies) were similar to the final Trash Amendments, the potential environmental impacts would also be similar. There is, however, the potential that the individual regional water boards would develop different trash water quality objectives and implementation provisions, resulting in a continued lack of statewide consistency. Furthermore, it would be an inefficient use of staff time (and corresponding costs) to develop up to eight different approaches to trash-control in state waters. For these reasons, the State Water Board determines that this is not the preferred alternative.

8.3 Full Capture System Alternative

The Full Capture System Alternative would meet the goals of preventing trash from entering state waters, provide consistency statewide, and establish a water quality objective. In this alternative, NPDES permittees would have installation, operation and maintenance requirements across all land uses, regardless of trash generation rates,

[21] 23 CCR § 3777, subd. (b)(3).

and only have a single option for compliance. The potential, however, for environmental impacts to occur would increase due to the increase in the amount of required construction and maintenance. Furthermore, costs associated with implementing this alternative would be significantly higher than under the final Trash Amendments. The incremental improvement of this alternative over using the final Trash Amendments' targeted land-use approach with dual compliance track options, which include institutional controls in combination with treatment controls and multi-benefit projects, does not appear to provide substantial benefits related to trash removal versus potential impacts to the environment. For these reasons, the State Water Board determines that this is not the preferred alternative.

8.4 Institutional Control Alternative

The Institutional Control Alternative would meet the goal of preventing trash from entering state waters, provide consistency, and establish a water quality objective. In this alternative, NPDES storm water permits would contain requirements that permittees increase their use of institutional controls (such as street sweeping, clean-up events, education programs, additional public trash cans and increased collection frequency expanded recycling and composting efforts, and adoption of ordinances) in order to comply with the prohibition of discharge. This alternative's focus on the use of institutional controls rather than full capture systems could potentially decrease the environmental impacts from the installation of full capture systems and retrofitting of catch basins. The increase of institutional controls, such as street sweeping, collection of trash cans, and construction of recycling and composting facilities, however, could also result in environmental impacts, such as increased noise and vibration, or and poorer air quality caused by the increased frequency of street sweeping. Because street sweeping trucks move slowly, there may be an impact on transportation within high trash generating areas, which would require coordination with street parking rules. Nevertheless, the potential environmental impacts from this Institutional Control Alternative are not predicted to be significant. Permittees should have flexibility to determine the most effective means of controlling trash because of particular conditions within each jurisdiction, such as conditions of sites, types of trash, and the resources available for maintenance and operation. Therefore, the Trash Amendments propose the dual compliance options of Track 1 and Track 2.

8.5 Reduced Land Use Alternative

To reduce potential environmental impacts from trash control strategies, the Reduced Land Use Alternative would focus on a fewer number of land uses within a municipality. As a representative example, the City of Los Angeles monitored trash generation rates and found that the three highest trash generating land uses were residential (36 percent), commercial (33 percent), and industrial (19 percent) (City of Los Angeles 2002). The priority land uses for the Reduced Land Use Alternative would focus on the top two trash generating land uses: residential (high density and mixed urban) and commercial. Reducing the number of priority land uses would still reduce the discharge of trash from a municipality and reduce the number of treatment and institutional controls that would need to be implemented by permittees in California.

In addition, the Reduced Land Use Alternative would provide consistency statewide, establish a water quality objective, and prevent some trash from entering state waters; however it would not reduce the discharge of trash as much as the final Trash Amendments would. The final Trash Amendments focus on controlling the discharge of trash from more high trash generating areas than this alternative would, namely: high-density residential, commercial, industrial, mixed urban, and public transportation station land uses.

By reducing the number of implementation measures necessary for compliance, the potential environmental impacts of this approach would also be reduced. The reduction in impacts could include less noise and vibrations from installation and maintenance of full capture systems, comparatively fewer emissions of criteria pollutants, carbon monoxide, and greenhouse gases due to the reduced amount of construction and installation of full capture systems, and less impact to land disposal sites. This Alternative, however, would not be as protective of beneficial uses as the final Trash Amendments would be, because land uses such as industrial land uses, would not be captured. The goals of the project to protect beneficial uses and reduce the discharge of trash would only be partially achieved under this alternative. For these reasons, the State Water Board determines that this is not the preferred alternative.

8.6 Reduced NPDES Permittee Alternative

The Reduced NPDES Permittee Alternative would reduce the number of permits with specific trash-control requirements. While the Reduced NPDES Permittee Alternative would establish a water quality objective, and prevent some trash from entering State Waters, it would not reduce the discharge of trash as much as the final Trash Amendments. The final Trash Amendments focus on controlling the discharge of trash from the dominant transport pathway – storm water. Thus, the final Trash Amendments require implementation provisions to be incorporated into NPDES permits, namely the MS4 Phase I, MS4 Phase II, Caltrans, IGP, and CGP.

The potential for the transport of trash via storm water to receiving water bodies is highest among the MS4 Phase I, MS4 Phase II, and Caltrans permittees due to the combination of land use types, area of land, and number of people within these MS4 permittees' respective jurisdictions. At present, the IGP and CGP already contain components of the final Trash Amendments. Specifically, the IGP has a prohibition of discharge of preproduction plastics, and the CGP contains a prohibition of discharge of any debris from construction sites. Therefore, the Reduced NPDES Permittee Alternative would focus specific requirements for trash in MS4 Phase I, MS4 Phase II, and Caltrans permits.

In this alternative, comparatively fewer permittees would be required to institute increased trash controls. To this end, programmatically is it is possible that there would be reduced environmental impacts. The reduction in impacts may include less noise and vibrations from installation and maintenance of full capture systems, comparatively fewer emissions of criteria pollutants, carbon monoxide, and greenhouse gases due to the construction and installation of full capture systems, and less impact to land disposal sites. At a programmatic level, the potential environmental impacts may be slightly reduced with the Reduced NPDES Permittee Alternative. This Alternative, however,

would not be as protective of beneficial uses, as trash from light industrial facilities would not be removed from storm water. The goals of the project to protect beneficial uses and reduce the discharge of trash would only be partially achieved under this Alternative. For these reasons, the State Water Board determines that this is not the preferred alternative.

9 WATER CODE SECTIONS 13241 AND 13242 AND ANTIDEGRADATION

California Water Code section 13241 requires assessment of specific factors when adopting water quality objectives. These factors consist of:

- Past, present, and probable future beneficial uses of water.
- Environmental characteristics and water quality of the hydrographic unit under consideration.
- Water quality conditions that could be reasonably attained through coordinated control of all factors affecting water quality.
- Economic considerations.
- The need for developing new housing.
- The need to develop and use recycled water.

The final Trash Amendments would alter existing water quality objectives for state waters; therefore, CWC section 13241 does apply to these final Trash Amendments.

9.1 Past, Present and Future Beneficial Uses of Water

The presence of trash impairs the established beneficial uses present in basin plans and the Ocean Plan, as discussed in Section 1 and Appendix A.

The final Trash Amendments, including the water quality objective for trash, would protect all beneficial uses in state waters. The final Trash Amendments support the Water Boards' existing water quality control plans and policies, and provide a better means to ensure that any future beneficial uses are also protected from trash impairments.

9.2 Environmental Characteristics and Water Quality of the Hydrographic Unit Under Consideration

The final Trash Amendments apply to all waters of the state. More specifically, the final Trash Amendments are primarily focused on areas of high trash generation within the jurisdictions of NPDES MS4 Phase I and MS4 Phase II municipalities, Caltrans, and facilities and sites covered under the IGP and CGP. The environmental characteristics of all hydrographic units affected by the final Trash Amendments are described in Section 3.

9.3 Water Quality Conditions that Could Reasonable be Attained Through Coordinated Control of All Factors Affecting Water Quality

The Water Boards are required to ensure that all discharges, regardless of type, comply with all water quality control plans and policies. The proposed water quality objective for trash can be implemented through a prohibition of discharge to all surface waters of the state, with the exception of those waters within the jurisdiction of the Los Angeles Water Board with trash or debris TMDLs that are in effect prior to the effective date of the Trash Amendments. Compliance of the prohibition of discharge would be specified through NPDES permits issued pursuant to section 402(p) of the Federal Clean Water Act, WDRs, and waivers of WDRs.

9.4 Economic Considerations

Under the requirements of Water Code sections 13170 and 13241, subdivision (d) and 23 CCR section 3777, subdivisions (b)(4) and (c), the State Water Board must consider economics when establishing water quality objectives. This consideration of economics is not a cost-benefit analysis, but a consideration of potential costs of a suite of reasonably foreseeable measures to comply with the final Trash Amendments. This economic analysis utilized two basic methods to estimate the incremental cost of compliance for permitted storm water discharge: the first method was based on cost of compliance per capita, and the second method was based on land cover.

This economic analysis estimated the incremental annual cost to comply with the requirements of the final Trash Amendments ranged from $4 to $10.67 per year per capita for MS4 Phase I NPDES permittees and from $7.77 to $7.91 per year per capita for smaller communities regulated under MS4 Phase II permits. For IGP facilities, the estimated compliance cost is $33.9 million or $3,671 per facility. To comply with the final Trash Amendments, expenditures by Caltrans are estimated to increase by $34.5 million in total capital costs and $14.7 million per year for operation and maintenance of structural controls.

The full economic consideration is described in Appendix C.

9.5 The Need for Developing Housing

The adoption of the final Trash Amendments is not expected to constrain housing development in California. The implementation requirements of the final Trash Amendments would need to be incorporated into the CGP and requirements for new urban development within MS4 Phase I or MS4 Phase II Permits. The trash requirements are anticipated to be minimal in cost to the overall costs of development. Additionally, the incorporation of trash treatment controls during the construction and development of storm drain inlets in new housing developments would be lower in cost than retrofitting storm drains with trash treatment controls. As a result, the final Trash Amendments would not interfere with the need for developing new housing.

9.6 The Need to Develop and Use Recycled Water

The adoption of the final Trash Amendments is not expected to restrict the need to develop and use recycled water. Currently, there are no restrictions on recycling of water due to trash. Therefore, the final Trash Amendments and possible alternatives are consistent with the need to develop and use recycled water. Removing trash from the wastewater should be beneficial to the recycled water treatment process.

9.7 Water Code Section 13242

California Water Code section 13242 requires that the program of implementation for achieving the water quality objective within the final Trash Amendments include a description of the nature of the actions which are necessary to achieve the objective, time schedules for actions to be taken, and a description of surveillance to be undertaken to determine compliance with the water quality objective. In compliance with CWC section 13242, the final Trash Amendments include a prohibition of discharge

and program of implementation in order to achieve the objective, time schedules for compliance, and monitoring and reporting requirements - all as described in Section 2 as well as Appendix D for the Ocean Plan and Appendix E for the ISWEBE Plan.

9.8 Antidegradation

Federal and state antidegradation policies found at 40 CFR section 131.12 and in State Water Board Resolution No. 68-16, respectively, impose levels of protection for state waters depending on the highest quality of the receiving water at issue since 1968 – the year that the State Water Board adopted California's antidegradation policy. Where a receiving water is of higher quality than applicable water quality standards, that higher quality must be maintained unless certain conditions are met.

The State Water Board does not anticipate any degradation of water quality as a result of the adoption and implementation of the final Trash Amendments. Upon adoption of the final Trash Amendments, the state would, for the first time, have a water quality objective for trash and implementation provisions that would apply to all surface waters of the state, with the exception of those waters within the jurisdiction of the Los Angeles Water Board with trash or debris TMDLs that are in effect prior to the effective date of the final Trash Amendments. The final Trash Amendments would not result in a degradation of water quality standards in those waters, as the existing TMDL provisions are more stringent than the final Trash Amendments.

Furthermore, the San Francisco Water Board's San Francisco Bay MRP (Order No. R2-2009-0074) requires MS4 permittees to develop and implement "Short-Term Trash Load Reduction Plans". This includes implementation of a mandatory minimum level of trash capture; cleanup and abatement progress on a mandatory minimum number of trash hot spots; and implementation of other control measures and best management practices, such as trash reduction ordinances, to prevent or remove trash loads from MS4s to attain a 40% reduction in trash loads by July 1, 2014. The San Francisco Bay MRP has an existing set of annual monitoring and reporting requirements. The required trash load reduction through the Short-Term Trash Load Reduction Plans does not conflict with the implementation provisions set forth in the proposed final Trash Amendments. The San Francisco Water Board can determine a San Francisco Bay MRP permittee implementing controls substantially equivalent to Track 2 has a submitted an implementation plan that is equivalent to the implementation plan requirement in the Trash Amendments. As such, the proposed final Trash Amendments would not result in a degradation of water quality standards in waters regulated by the San Francisco Bay MRP, because the final Trash Amendments are at least as protective of water quality as the San Francisco Bay MRP.

As a result, the adoption and implementation of the final Trash Amendments would not lead to the degradation of any water quality standards, and would instead enhance water quality across the state.

10 SCIENTIFIC PEER REVIEW

California Health and Safety Code section 57004 requires external scientific peer review of the scientific basis for any rule proposed by any board, office or department within CalEPA. Scientific peer review is a mechanism for ensuring that regulatory decisions and initiatives are based on sound science. Scientific peer review also helps strengthen regulatory activities, establishes credibility with stakeholders, and ensures that public resources are managed effectively. Scientific peer review on the scientific elements of the proposed Trash Amendments and Draft Staff Report was conducted through an Interagency Agreement between CalEPA and the University of California. The Peer Review process commenced on March 10, 2014 with a Request for External Scientific Peer Review and concluded on July 14, 2014. Three peer reviewers were selected and participated in reviewing the scientific elements of the Draft Staff Report. Peer Review was overall supportive of the proposed Trash Amendments and Draft Staff Report with recommendations to strength the scientific basis of the analysis. The proposed Final Staff Report contains the additional scientific studies recommended following Peer Review.

The three peer reviewers are following:

- Tamara Galloway, Ph.D.
  Professor of Ecotoxicology
  College of Life & Environmental Sciences
  University of Exeter
- David Barnes, Ph.D.
  Professor, Civil & Environmental Engineering
  College of Engineering and Mines
  University of Alaska
- Detlef Knappe, Ph.D.
  Professor, Department of Civil, Construction, & Environmental Engineering
  North Carolina State University

The Peer Review response is available at:
http://www.waterboards.ca.gov/water_issues/programs/peer_review/trash_control/

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APPENDIX A: TRASH BACKGROUND

I. Beneficial Uses Impacted by Trash

The final Trash Amendments are directed toward achieving the highest water quality consistent with the maximum benefit to California. Beneficial uses, as defined by Porter-Cologne section 13050, are the uses of surface water and groundwater that may be protected against water quality degradation. The Water Boards are charged with protecting these uses from pollution and nuisance that may occur as a result of waste discharges. Beneficial uses of surface waters, ground waters, marshes, and wetlands serve as a basis for establishing water quality objectives and discharge prohibitions to attain these goals and are defined in the basin plans for each regional water board and the Ocean Plan.

There are many beneficial uses in California, defined in the basin plans for each regional water board and the Ocean Plan, which can be impacted by trash. This section discusses the impacts of trash to beneficial uses associated with aquatic life and public health (Figure 27).

Trash is a threat to aquatic habitat and life as soon as it enters state waters. Mammals, turtles, birds, fish, and crustaceans are threatened following the ingestion or entanglement of trash (Moore et al. 2001, U.S. EPA 2002). Ingestion and entanglement can be fatal for freshwater, estuarine, and marine life. Similarly, habitat alteration and degradation due to trash can make natural habitats unsuitable for spawning, migration, and preservation of aquatic life. These negative effects of trash to aquatic life can impact twelve beneficial uses. A summary of specific impacts associated with each aquatic life beneficial use are presented in Table 13.



Figure 27. Trash Impacting Beneficial Uses (NOAA Marine Debris Program, Algalita Marine Research Institute, California Coastal Commission, and LA County Flood Control District).

Impacts of Trash to Aquatic Habitat and Life

Regardless of the method trash reaches waterways, trash is a threat to aquatic habitat and life as soon as it enters state waters. Mammals, turtles, birds, fish, and crustaceans are threatened following the ingestion or entanglement of trash (Moore et al. 2001, U.S. EPA 2002). Ingestion and entanglement can be fatal for freshwater, estuarine, and marine life. Similarly, habitat alteration and degradation due to trash can make natural habitats unsuitable for spawning, migration, and preservation of aquatic life. These negative effects of trash to aquatic life can impact several beneficial uses. A summary of specific impacts associated with each aquatic life beneficial use is presented in Table 13.

Table 13. Trash-Related Impacts to Aquatic Life Beneficial Uses.

Beneficial Use	Impact of Trash to Specific Aquatic Life Beneficial Use
Warm Freshwater Habitat Cold Freshwater Habitat	• Ingestion and entanglement by fish or wildlife (including invertebrates). • Freshwater habitat alteration or degradation. • Interference with ecosystem function, including interference with benthic communities. • Transportation of invasive species from floating trash.
Inland Saline Water Habitat	• Ingestion and entanglement by fish or wildlife (including invertebrates). • Saline water habitat alteration or degradation. • Interference with ecosystem function, including interference with benthic communities. • Transportation of invasive species from floating trash.
Estuarine Habitat	• Ingestion and entanglement by fish or wildlife (including estuarine mammals, waterfowl, and shorebirds). • Ingestion of toxic compounds (including shellfish) associated with trash. • Estuarine habitat alteration or degradation. • Interference with ecosystem function, including interference with benthic communities and shellfish. • Transportation of invasive species from floating trash.
Marine Habitat	• Ingestion and entanglement by fish or wildlife (including marine mammals, birds, and turtles). • Ingestion of toxic compounds (including shellfish) associated with trash. • Marine habitat alteration or degradation, including alterations to kelp habitat. • Interference with ecosystem function, including interference with benthic communities, shellfish and kelp. • Transportation of invasive species from floating trash.
Wildlife Habitat	• Ingestion and entanglement by wildlife (including mammals, birds, reptiles, amphibians, and invertebrates). • Terrestrial habitat alteration or degradation, including alterations to wildlife water and food sources. • Interference with ecosystem function. • Transportation of invasive species from floating trash.

Beneficial Use	Impact of Trash to Specific Aquatic Life Beneficial Use
Preservation of Biological Habitats	• Habitat alteration and degradation, including alterations to established refuges, parks, sanctuaries, and ecological reserves. • Interference with ecosystem function. • Transportation of invasive species from floating trash, potentially leading to species displacement.
Preservation of Areas of Special Biological Significance	• Habitat alteration or degradation of marine life refuges, ecological reserves, and designated Areas of Special Biological Significance. • Interference with ecosystem function, including interference with kelp propagation. • Transportation of invasive species from floating trash, potentially leading to species displacement.
Rare, Threatened, or Endangered Species	• Ingestion and entanglement by plant or animal species listed as rare, threatened or endangered. • Alteration or degradation of habitat that supports plant or animal species listed as rare, threatened or endangered. • Interference with ecosystem function. • Transportation of invasive species from floating trash, potentially leading to species displacement.
Migration of Aquatic Organisms	• Alteration or degradation of habitat that supports migration or other temporary activities by aquatic organisms. • Interference with ecosystem function.
Spawning, Reproduction, and/or Early Development	• Alteration or degradation of habitat that is suitable for reproduction and early development of fish. • Interference with ecosystem function.
Wetland Habitat	• Ingestion and entanglement by fish, invertebrates, and insects. • Ingestion of toxic compounds (including shellfish) associated with trash. • Natural or man-made wetland ecosystem alteration or degradation. • Interference with ecosystem function, including interference with benthic communities and shellfish. • Transportation of invasive species from floating trash.

Effects of Trash on Aquatic Habitat

Trash that settles to a riverbed, bottom of a bay, or ocean floor can interfere with normal ecosystem functions and have immediate and long-term effects on the aquatic habitat. Settled trash is a problem for bottom feeders and dwellers and can contribute to sediment pollution. Settled trash can smother the growth of aquatic vegetation, disrupt nurseries and spawning areas, and disturb benthic communities (United Nations Environment Program 2009). Trash can alter the aquatic habitat and impact the aquatic biodiversity as it introduces hard surfaces for colonization as well as provides increased places of refuge for mobile species. Hard surfaces may attract hard-substratum sessile species that may have been previously limited and, consequently, displace soft bottom species due to competition and predation (Katsanevakis et al. 2007). Serious alterations, such as hypoxia and anoxia conditions, can result when the gas exchange between the overlying waters and pore waters of the sediments is prohibited by the accumulation of trash, specifically plastic trash (Goldberg 1994). Settled trash can also disturb benthic communities by mechanical scouring as trash twists and moves with

flow, currents, and tides, damaging the bottom fauna (United Nations Environment Program 2009). Furthermore, aquatic life can be threatened by trash when it causes increased siltation and turbidity resulting in blocking of essential sunlight or smothering of sea grass species.

Trash is found settling in the deep-sea to depths of 13,028 feet. Specifically in the Monterey Canyon, trash is most abundant where aggregation and downslope transport of trash from the continental shelf are enhanced by canyon dynamics (Figure 28). Based on 1,149 video records over a 22-year time period, the majority of trash was plastic (33%) and metal (23%) with relatively high number of observations of trash in the deep-sea environment (Schlining et al. 2013). Thus, submarine canyons can function to transport trash from coastal to deep-sea habitats.



Figure 28. A Discarded Tire in Monterey Canyon (Monterey Bay Aquarium Research Institute).

Trash that does not settle can float and be suspended for great distances. Floating trash, specifically plastic trash, is capable of carrying and distributing potentially harmful, non-native species of animals and plants to foreign aquatic habitats (Winston 1982, Highsmith 1985, Minchin 1996, Barnes 2002, Masó et al. 2003). Trash is found to more than double the rafting opportunities for biota at 30 remote islands across subtropics locations and higher latitudes (Barnes 2002). Trash drifting on ocean currents eventually becomes home to entire communities of encrusting and attached organisms. Aquatic life that uses trash as transport includes bryozoans, barnacles, polychaete worms, hydroids, and mollusks (Barnes 2002). Plastics are not readily biodegradable, but travel slowly in oceans, making them a more effective invasive species dispersal mechanism than vessels or ballast water (Barnes 2002). Although plastics constitute the larger percentage of floating trash, other common anthropogenic floating objects include polystyrene, wooden items, and fishing gear (Barnes and Milner 2005). While these studies have largely focused on trash in marine waters, similar conditions are expected to occur in estuarine, freshwater, and saline systems.

Not only can trash serve as a vessel for aquatic life, but trash, particularly plastic trash, can serve as a transport medium for pollutants and sorb persistent organic pollutants in the marine environment (Carpenter et al. 1972, Mato et al. 2001, Derraik 2002). Although the quantities and effects of these contaminants have yet to be fully determined, plastic trash in the marine environment, including resin pellets, plastic fragments have been found to contain organic contaminants, including polychlorinated biphenyls, polycyclic aromatic hydrocarbons, petroleum hydrocarbons, organochlorine pesticides, phthalate ester plasticizers, polybrominated diphenylethers, and alkylphenols and bisphenol- A (Giam et al. 1978, Teuten et al. 2009; DG Europe

2011). Some of these compounds are added during plastic manufacture (e.g., nonylphenol, bisphenol- A, and polybrominated diphenylethers), while others (e.g., polychlorinated biphenyls and DDT) are sorbed from the surrounding seawater (Mato et al. 2001, Moore et al. 2005, Teuten et al. 2009, Hirai et al. 2011). Although plastic trash may have the capacity to sorb toxins, there is limited research on the extent of toxic exposure from plastic vectors compared to other exposure pathways such as atmospheric deposition and ocean currents (Gouin et al. 2011). Microplastics are unlikely to be an important global geochemical reservoir for historically released persistent organic pollutants such as polychlorinated biphenyls, dioxins, and DDT, and it is not clear if microplastics play a larger role as chemical reservoirs on smaller scales (NOAA 2008b).

Persistent organic pollutants found in or carried by trash may present potential threats in aquatic environments as they can leach from surface of trash to state waters. Leaching and degradation of plasticizers, polymers, and other plastic additives are complex phenomena dependent on environmental conditions and the chemical properties of each additive (Teuten et al. 2009). Persistent organic pollutants, however, have a high affinity for plastic in seawater, which may elevate POP concentrations on microplastic particles but reduce their bioavailability (NOAA 2008b).

Effects of Trash Ingestion on Wildlife, Freshwater, Estuarine, and Marine Aquatic Life

Many species, including mammals, birds, turtles, and fish, have been reported to ingest several different forms of trash. Ingestion of trash may occur either because of misidentification of trash items or accidental consumption during feeding and normal behavior. The effects of trash ingestion include starvation, suffocation, and internal injuries and infections. Ingested items can block air passages, prevent breathing, and be fatal (U.S. EPA 1992; 2002). In addition, some trash (e.g., diapers, medical and household waste, and chemicals) can be a source of bacteria, viruses, and toxic substances that can impact aquatic life. As described below, many studies have been completed on the impact of trash ingestion in marine environments; the effects of trash ingestion are expected to be the same in freshwater, saline, and estuarine environments.

For birds, ingestion of small plastic fragments and preproduction plastic pellets floating at the water surface pose a significant threat. At least 50 species of seabirds are known to ingest plastic debris (Day et al. 1985). Birds confuse these plastic fragments and preproduction plastic pellets with normal prey items, such as fish eggs or larvae, which are similar in both size and color.

Ingestion of trash by marine mammals has been reported to cause fatalities. In 2008, the ingestion of floating trash was fatal to two large sperm whales that were found stranded along the northern California coast (Jacobsen et al. 2010).

Sea turtles are especially prone to ingestion of marine trash, particularly plastics. Sea turtles, mistaking them for food, swallow plastic bags that block the turtle's digestive tract and lead to starvation (U.S. EPA 1992). Trash items that have been found in digestive tracts of turtles include plastic bags, tar, fishing lines, ropes, polystyrene, rubber, fishing hooks, charcoal, aluminum cans, aluminum foil, cardboard, net

fragments, cloth, plastic spherules, strings, wood, cigarette filters, cellophane, bottles, vinyl films, pieces of latex balloons, and beer crown corks (Balazs 1985, Gramentz 1988, Plotkin and Amos 1990, Bjorndal et al. 1994, Tomás et al. 2002). Numerous studies that have reported high incidence of trash ingestion include: 10 of 33 leatherback turtles (30.3%) (Sadove and Morreale 1990); 19 of 32 sea turtles (59.4%) (Duronslet et al. 1991); 25 of 51 sea turtles (49%) (Bjorndal et al. 1994), and 23 of 38 green turtles (60.5%) (Bugoni et al. 2001). Even small quantities of trash can be fatal as seen by the death of two sea turtles where the trash represented only 4.6 and 5.8 percent of wet mass and 3.2 and 9.8 percent of volume of gut contents of the two turtles, respectively (Bjorndal et al. 1994).

Ingestion of trash can be particularly detrimental to aquatic life when trash contains or carries toxic compounds. Trash, particularly plastic trash, has plastic additives and can sorb contaminants ambient in state waters such as polychlorinated biphenyls and DDT. These contaminants can be assimilated by aquatic life through ingestion. Ryan et al. (1988) found that the mass of ingested plastic in birds was positively correlated with polychlorinated biphenyls in their fat tissue and eggs. Also, Teuten et al. (2007) found that a priority pollutant, phenanthrene, was transmitted to a lugworm by plastic that was mixed into the sediments inhabited by the worm. Phenanthrene is not a plastic additive, but was sorbed by the plastic from the ambient water.

Although there is limited research on the bioaccumulation of toxic compounds associated with plastics, a preliminary experiment demonstrating the transfer of contaminants from plastics to higher trophic level organisms was performed by Endo et al. (2005). The results of this study suggest that plastic-derived polychlorinated biphenyls are transferrable to biological tissue of birds after ingestion, especially lower-chlorinated congeners commonly found in plastic resin pellets. Since lower-chlorinated congeners are easily metabolized and cannot be biomagnified through the food chain, their presence in animal tissue is indicative of plastic ingestion. This phenomenon was also demonstrated by Yamashita et al. (2011), which found that the mass of ingested plastic in short-tailed shearwaters in the North Pacific Ocean was positively correlated with concentrations of lower-chlorinated congeners. Given the limited research of the biological uptake and bioaccumulation of toxics from plastics, plastic trash is not a significant vector of toxics relative to other exposure processes, such as atmospheric deposition and ocean currents (Gouin et al. 2011). Using lungfish and North Sea cod as model species, Koelmans et al. (2014) determined the potential leaching of nonylphenol and bisphenol A in the intestinal tracts from plastic ingestion. They found that plastic ingestion will make a negligible contribution to the transfer of additive as compared to other routes of exposure. However, salinity has been shown likely to have a strong effect on the sorption of contaminants, especially polymers, on plastic (Velzeboer et al. 2014). The transport and movement of contaminants by plastic particles in the aquatic environment are greatly influenced by local conditions. The transport of pollutants, such as DDT and polyaromatic hydrocarbons, is from freshwater and estuarine to fully marine conditions (Bakir et al. 2014). Overall, while the uptake and bioaccumulation of pollutants from plastics has been shown to occur, there is limited understanding of the significance in comparison to other modes of pollutant transfer in the environment.

Ingestion of toxic compounds and aquatic fatalities in freshwater, estuarine, and marine water systems negatively impact beneficial uses of aquatic life. Fatalities induced by trash ingestion or toxicity can affect aquatic life in warm and cold freshwater, inland saline water, estuarine, marine, wetland, and terrestrial habitats. Beneficial uses can be impacted when the ingestion of trash causes aquatic life fatalities or physiological stress in ASBS, and mortality or physiological stress in rare, threatened, or endangered species. See Table 13 for a summary of specific impacts of trash ingestion associated with each aquatic life beneficial use.

Effects of Trash Entanglement on Wildlife, Freshwater, Estuarine, and Marine Aquatic Life

In addition to ingestion, entanglement can result when an animal becomes encircled or ensnared by trash. Entanglement can cause wounds and associated infections, strangulation or suffocation, and impair the ability of an animal to swim, fly, find food, and escape predators (Figure 29; U.S. EPA 1992). Once entangled, animals have trouble eating, breathing or moving, all of which can be fatal. Similar to the discussion on trash ingestion, the studies describing effects of trash entanglement in marine environments also apply to freshwater and estuarine environments since the impacts are the same, regardless of the aquatic habitat.



Figure 29. Trash Entanglement (NOAA Marine Debris Program 2013).

According to the US Marine Mammal Commission, 136 marine species have been reported in entanglement incidents, including six species of sea turtles, 51 species of seabirds, and 32 species of marine mammals (Marine Mammal Commission 1996). Marine animals, particularly seals and sea lions, become entangled because of the natural curiosity and tendency to investigate unusual objects in the environment. Between 1982 and 2006, 268 entanglements of the endangered monk seal were documented in the Northwestern Hawaiian Islands. Additionally, many birds, including ducks geese, cormorants, and gulls have been found entangled in six-pack rings (U.S. EPA 1992), and nearly one million seabirds are thought to die from entanglement or ingestion of floatable material each year (U.S. EPA 2002).

Although entanglement is considered a serious mortality factor, the mortality rate due to entanglement is difficult to quantify. Many species vulnerable to entanglement are oceanic or migratory and are scattered across wide areas. Animals that become entangled and die either quickly sink or are consumed by predators, eliminating them from potential detection (Laist 1987). For these reasons, the estimated mortality rates and the effects of trash entanglement may actually be underestimated.

Fatalities induced by entanglement can affect aquatic life in warm and cold freshwater habitats, as well as inland saline water, estuarine, marine, wetland, and terrestrial habitats. Aquatic life fatalities in these habitats impact the beneficial when entanglement causes aquatic life fatalities in preserved areas of biological significance and fatalities of rare, threatened, or endangered species. See Table 13 for a summary of specific impacts associated with trash entanglement on each aquatic life beneficial use.

Impacts of Trash on Public Health

Trash in state waters can impact humans by means of jeopardizing public health and safety and posing harm and hindrance to recreational, navigational, and commercial activities. Trash can also affect the traditional and cultural rights of indigenous people or subsistence fishers to waters of the state. Specific impacts associated with each public health beneficial use are presented in Table 14.

Table 14. Trash-Related Impacts to Public Health Beneficial Uses.

Beneficial Use	Impact of Trash to Specific Public Health Beneficial Use
Municipal and Domestic Supply	• Alterations or degradation to waters that are used for community, military, or individual water supply systems (including drinking water). • Health hazards due to ingestion of water where diseases were transported by trash.
Navigation	• Safety hazards (including hazards to boats, rafts or other vessels used for shipping, travel, or transportation by private, military or commercial vessels).
Water Contact Recreation	• Health and safety hazards (including hazards from bacteria, viruses, toxic substances, mosquito production, and injuries). • Health hazards due to consumption of fish with diseases transported by trash or ingestion of water where diseases were transported by trash. • Safety hazards (including hazards to boats, rafts or other recreational vessels). • Alterations or degradation to waters that support contact water recreation.
Non-Contact Water Recreation	• Safety hazards (including hazards to boats, rafts or other recreational vessels). • Alterations or degradation to waters that support non-contact water recreation.
Commercial and Sport Fishing	• Safety hazards (including hazards to boats, rafts or other commercial or recreational vessels). • Health hazards due to consumption of fish, shellfish, or other aquatic species with diseases transported by trash. • Alterations or degradation to waters that support commercial and sport fishing.
Aquaculture	• Health hazards due to consumption of aquatic plants or animals with diseases transported by trash. • Alterations or degradation to waters that support aquaculture.
Shellfish Harvesting	• Safety hazards (including hazards to boats, rafts or other commercial or recreational vessels). • Health hazards due to consumption of filter-feeding shellfish with diseases transported by trash. • Alterations or degradation to waters that support shellfish harvesting.

Beneficial Use	Impact of Trash to Specific Public Health Beneficial Use
Native American Culture	• Health hazards due to consumption of fish or shellfish with diseases transported by trash. • Elimination/reduction of native fish or shellfish populations that support the cultural and/or traditional rights of indigenous people. • Alteration or degradation to the habitat of or death to aquatic life that support the cultural beliefs of indigenous people. • Alterations or degradation to waters that support Native American culture.
Subsistence Fishing	• Health hazards due to consumption of fish or shellfish with diseases transported by trash. • Alterations or degradation to waters that support subsistence fishing.
Note: Not all kinds of trash impact the specific human life beneficial uses.	

Effects of Trash on Public Health

Trash poses health and safety hazards for the safety of fishermen, recreational boaters, and children playing in the waterways and beaches. Items such as broken glass, medical waste, rope, and fishing line pose immediate risks to human safety. Injuries incurred by incisions from glass and metal can expose a person's bloodstream to microbes in the stream's water that may cause illness (Los Angeles Water Board 2010). Swimmers, divers, and snorkelers can become entangled in submerged or floating trash such as rope or fishing line. Some trash (e.g., diapers and medical and household waste) can be a source of bacteria, viruses, and toxic substances (Musmeci et al. 2010). Medical and personal hygiene trash, for instance, can indicate the presence of pathogenic contaminants such as streptococci, fecal coliform, and other bacterial contamination. Consumption or contact with water contaminated with these pathogens could result in infectious hepatitis, diarrhea, bacillary dysentery, skin rashes, and even typhoid and cholera. Also, some debris, such as containers or tires, can collect water and support mosquito production and associated risks of diseases such as encephalitis and the West Nile Virus (Los Angeles Water Board 2010). Trash, specifically plastic waste, has a potential to expose humans to chemicals, such as bisphenol A and phthaletes (DG Europe 2011).

Trash in state waters can pose serious risks to recreational users including incisions and exposure to disease. Because of these health and safety hazards, trash may be an immediate threat to public health depending on the type of trash, where there is bodily contact with water, and where ingestion of water is reasonably possible. Therefore, waters designated with the beneficial use water contact recreation (Table 14) can be negatively impacted by the presence of trash. In addition, beneficial uses associated with the human consumption of water, shellfish, aquatic plants and animals, and commercial and sport fish, may be impacted by trash. Specifically, the ingestion of water or food that may be contaminated by bacteria, viruses, or toxic compounds found in trash poses a significant public health concern.

Effects of Trash on Contact & Non-Contact Water Recreation, Commercial and Sport Fishing, and Navigation

Beyond the immediate health and safety hazards caused by trash, the presence of trash in state waters can also affect beneficial uses of waters where there is less bodily contact with water. Damage to boats, rafts, and other recreational vessels through entanglement of equipment and propellers can lead to potentially hazardous and perhaps fatal situations for boaters (Figure 30). For these circumstances, trash present in waters designated for recreational activities and for transportation can impact the beneficial uses of non-contact water recreation and navigation, respectively.



Figure 30. Entangled Propeller (NOAA Marine Debris Program).

Effects of Trash on Native American Culture

Some waters within the jurisdiction of the North Coast Water Board are protected by the beneficial use, Native American Culture. This beneficial use describes waters that support the cultural and/or traditional rights of indigenous people such as subsistence fishing and shellfish gathering, basket weaving, jewelry material collection, navigation to traditional ceremonial locations, and ceremonial uses. Trash affects this use by reducing the numbers of fish and/or shellfish, and/or by introducing toxic compounds to the waters making the waters too dangerous or unsuitable for this beneficial use. The North Coast Water Board also has a subsistence fishing beneficial use that protects the use of waters for subsistence fishers. Many people living near freshwater or marine areas depend on food from their nearby water bodies for survival. Similar to the Native American Culture use, trash affects the subsistence fishing use if waters are void of fish and/or shellfish or if toxic compounds associated with trash impact the aquatic life. The effect on these uses is similar to the aquatic life and public health impacts of trash described above.

II. Trash in the Environment

The presence of trash in surface waters, especially in coastal and marine waters, is a serious issue in California. According to California's 2008-2010 Integrated Report, there are 73 water bodies listed as having impaired water quality due to the presence of large

amounts of trash. Trash discarded on land is frequently transported through storm drains and to waterways, shorelines, the seafloor, and the ocean. Statewide and local studies have documented the presence of trash in state waters and the accumulation of land-based trash in the ocean. Street and storm drain trash studies conducted in regions across California have provided insight into the composition and quantity of trash that flows from urban streets into the storm drain system and out to adjacent waters (Figure 31).



Figure 31. Don't Trash California (Caltrans).

Composition of Trash

Since 1986, the California Coastal Commission and the Ocean Conservancy have organized the Coastal Cleanup Day to collect trash from beaches, inland waterways, coastal waters, and underwater annually through voluntary efforts at sites around the world (Figure 32). In 2012, volunteers removed 854,496 pieces of trash totaling 1,444,546 from 2,023 miles of Coastal Cleanup sites throughout California. The top ten items collected from 1989-2012 were: (1) cigarette butts; (2) bags (paper and plastic); (3) food wrappers and containers; (4) caps and lids; (5) cups, plates, forks, knives, and spoons; (6) straws and stirrers; (7) glass beverage bottles; (8) plastic beverage bottles; (9) beverage cans; and (10) building materials. These items made up nearly 90 percent of the items removed and cataloged by Coastal Cleanup Day events. These data generated by the Coastal Cleanup Day efforts provide valuable information on the sources of debris, as well as the types and quantity of debris in California.

In addition to the dominance of consumer products in the waste stream, preproduction plastics pellets are a particular concern when the raw material is improperly disposed and reaches a water body. A 1998 study, conducted in Orange County by Moore et al., found the most abundant debris items on beach sites were preproduction plastics, foamed plastics, and hard plastics. A 2009 collaborative baseline study conducted by the Southern California Coastal Water Research Project and the State Water Board estimated that preproduction plastic made up 95 percent of the debris on California's beaches, and other plastic debris items made up an additional 4.6 percent (Moore et al. 2013). The densest distribution of debris was found in the San Diego, Orange, Los Angeles and San Francisco County Regions, and appears to correlate with the more densely populated coastal watersheds in California.

Plastic, the largest component and among the longest of life spans of trash materials, is an increasingly local and global threat to aquatic and marine life and environments.

Although plastics are one of the most common forms of trash and may have lasting and deleterious impacts, all forms of trash are a threat to state waters.



Figure 32. California Coastal Cleanup Day Advertisements (California Coastal Commission).

Transport of Trash in the Environment

Trash in state waters is related to the direct and indirect activities of inhabitants inland, along coastal shorelines, and offshore (NOAA 2008a). A major source of trash is either intentionally or accidentally improperly discarded waste, thrown or deposited on land and in water bodies. If trash occurs on land, it is commonly transported to nearby water bodies by wind and/or rain or dry weather runoff. The five primary sources and transport mechanisms for trash to state waters are (Figure 33):

1. Littering by the public on or adjacent to waterways;
2. Storm events draining watersheds and carrying trash originating from littering, inadequate waste handling or illegal dumping via the storm drain system to receiving waters;
3. Wind-blown trash, also originating from littering, inadequate waste handling or illegal dumping;
4. Illegal dumping into or adjacent to water bodies, and;
5. Direct disposal (overboard disposal and/or dumping) of trash into water bodies from vessels involved in commercial, military, fishing or recreational activities.

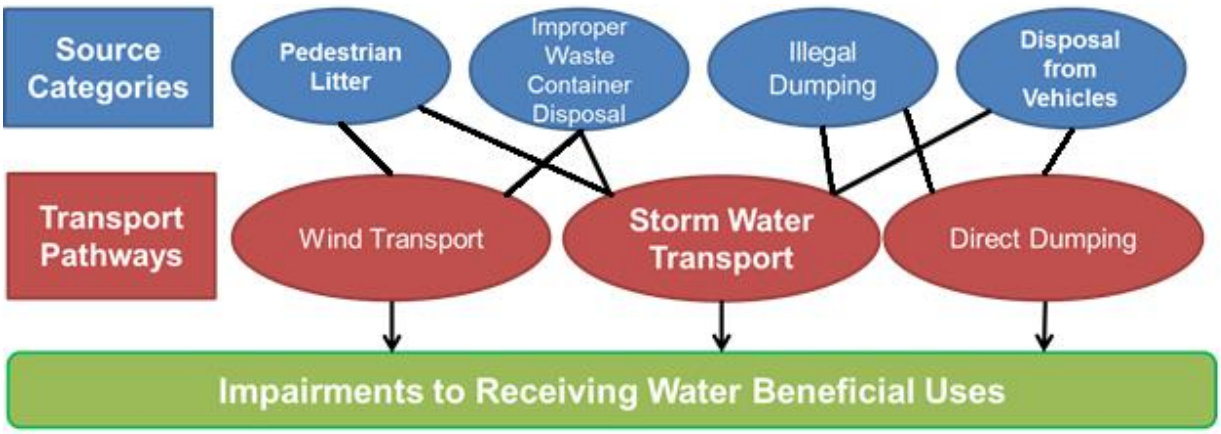


Figure 33. Transport of Trash to Waters of the State.

Littering is commonly the first route for trash to enter the environment. It is considered as a land-based source of trash and frequently accumulates in the vicinity of shopping centers, car parking lots, fast food outlets, railway and bus stations, roads, schools, public parks and gardens, garbage bins, landfill sites, and recycling depots. Results of trash generation studies conducted in Los Angeles County and City of Los Angeles in 2001 and 2004 concluded that high trash generation rates occur at highly populated and highly visited areas that attract vehicular and pedestrian traffic. Objects that can be easily transported by wind, such as plastic and paper trash, are a particular problem because they can become floatable trash even when originally disposed of in an appropriate manner. Uncontained trash can be blown directly into inland surface waters (including rivers, lakes, estuaries, and drains), enclosed bays, and the ocean, or it can be transported to the ocean if blown into a river, stream, or enclosed bay that empties to coastal waters (U.S. EPA 2002, San Diego CoastKeeper 2010).

Storm water can also wash trash into drainage systems, where it is able to travel via the storm water systems, streams, rivers, lakes, and estuaries until it eventually reaches coastal waters (Armitage and Rooseboom 2000, Richmond and Clendenon 2011). Trash will accumulate in areas of generation until the local authority either removes it or it is transported by wind and/or storm water runoff to nearby drainage systems and water bodies (Armitage and Rooseboom 2000). During storms and other periods of high winds or high waves, almost any kind of trash (including glass, metal, wood, and medical waste) can be deposited into the waters of the state (U.S. EPA 2002). A significant contribution from runoff has been shown in recent studies monitoring the density of marine trash before and after storm events. A study conducted on the Los Angeles and San Gabriel Rivers found the greatest abundance of plastic trash occurred after a rain event (Moore et al. 2011). A study conducted off the Southern California coast found trash increased after a storm event, reflecting inputs from land-based runoff and re-suspended matter (Lattin et al. 2004).

According to NOAA, it is estimated that 80 percent of marine trash comes from land-based sources (1999). Evidence of floating trash and trash on the seafloor suggests that trash from land-based sources can travel and impact waters downstream, along coastal shores, and in marine waters of the state. Trash that ends up on California beaches is indicative of trash accumulated from upstream sources, as well as other

sources such as visitor littering, poor management of waste containers, and recreational water activities. The transport of trash from land-based sources is not unique to California; the transport of trash is occurring globally. For example, the Danube River in Austria is reported to have a net flow rate of 4.2 tons of trash per day, with industrial raw materials accounting for over 70 percent of the reported items (Lechner et al. 2014). In the Tamar Estuary in London, plastics accounted for 82 percent of the trash found and the tidal cycle was a factor in the transport of trash (Sadri et al. 2014).

Illegal dumping and direct disposal of trash can take place in both fresh and marine waters. Trash is directly deposited into surface waters from accidental loss, improper waste management or by illegal disposal. Sources may include commercial fishing vessels; merchant, military and research vessels; recreational boats; cruise ships; and offshore petroleum platforms and associated supply vessels; beach recreation; and illegal encampments adjacent to waterways and water bodies. Trash deposition associated with recreational boating (Richmond and Clendenon 2001) also contributes to the problem, a majority of which is found to be plastic trash (Milliken and Lee 1990). One study that assessed trash generation along the shorelines of Orange County, suggested that water-based sources, such as overboard disposal were more significant than littering or wind deposition at these locations (Moore et al. 2001). While there are laws regulating the dumping of trash from boats and vessels in rivers, streams, marinas and seas, the global nature of trash, the inability to confine trash within territorial boundaries and the complexity of identifying trash sources have made laws difficult to develop and even harder to enforce.

Trash Assessment Studies

Potential sources of trash have been identified in trash assessment studies performed in the San Francisco Bay Region, Los Angeles River watershed and in Santa Clara County. Collectively, these trash assessments have identified the following as potential sources: direct littering and dumping, downstream transport and accumulation, recreational land-uses, industrial land-uses, urban runoff, pedestrians, vehicles, and improper management of waste containers (Santa Clara Valley Urban Runoff Pollution Prevention Program 2007, Surface Water Ambient Monitoring Program 2007, U.S. EPA 2012b).

Over the 2003-2005 monitoring period, the San Francisco Bay Region Rapid Trash Assessment study found that over 50 percent of the trash collected in urban streams was composed of plastic items. Glass (19%) and biodegradable items (10%) were also commonly found. Direct littering and dumping as well as downstream transport and accumulation were the two major transport mechanisms identified as responsible for the trash in streams in this region (Surface Water Ambient Monitoring Program 2007). High trash deposition rates were generally associated with wet weather, which reflects accumulation from upstream sources. As for dry season deposition, elevated deposition rates were primarily associated with localized littering and dumping, wind-blown trash from nearby sources, and, at certain sites, accumulation from upstream sources due to dry season runoff. Overall, trash levels generally increased in a downstream direction from headwaters to the mouth of the watershed. Other sources of trash near creek channels were identified as parks, schools, roads, or poorly kept commercial facilities.

In the Los Angeles River Watershed, the U.S. EPA and Los Angeles Water Board staff performed Rapid Trash Assessment in the lakes, along lakeshores, near fences and at the outlet of storm drains to document the impairment of Los Angeles area lakes. Rapid Trash Assessment site visits evaluated different land use types surrounding the lakes such as recreational use, industrial businesses, and urban runoff (U.S. EPA 2012b). The study suggests that trash in recreational areas surrounding the lake is likely transported from people littering in the area and from uncovered trash cans. In recreational areas, trash problems were primarily caused by overflowing trash cans and littering of small trash items, such as cigarette butts. Facilities in recreational areas, such as bathrooms and parking lots, were also identified as key hotspots for trash. Although industrial sites surrounding Peck Road Park Lake were too steep to appropriately conduct a quantitative trash assessment, items observed from a distance included plastic bags, milk jugs, a tire, a cooler, metal cable, and industrial scraps. Lastly, an inlet to Peck Road Park Lake was assessed to evaluate trash derived from urban runoff. This area demonstrated heavy accumulation of trash and evidence of trash dumping. Specific items found in the inlet of the lake included semiconductors, pepper sprays, spray paint cans, cigarette butts, large furniture items, foamed polystyrene, and plastic pieces (U.S. EPA 2012b).

Based on urban creek trash assessments in Santa Clara County, four source categories of trash have been identified by Santa Clara Valley Urban Runoff Pollution Prevention Program: pedestrians, vehicles, waste containers, and illegal dumping (Santa Clara Valley Urban Runoff Pollution Prevention Program 2007). Pedestrian locations are likely the greatest source of trash that ends up in local water bodies. Areas most affected by trash include high foot traffic locations (e.g., shopping plazas, convenience stores, and parks), transition points (e.g., bus stops, train stations, and entrances to public buildings), and special event venues (e.g., concerts, sporting events, and fairs). Drivers and passengers are also responsible for trash when they litter directly from vehicles or do not adequately cover their vehicles when transporting trash. Land areas that may accumulate trash from vehicles include roads, highways, and parking lots. Waste containers that are overflowing or uncovered and the improper handling of trash during curbside collection may also contribute to the problem. Illegal dumping of trash may occur within a watershed or directly into a waterway. High occurrences of illegal dumping often are by illegal encampments near or within riparian areas (Santa Clara Valley Urban Runoff Pollution Prevention Program 2007).

Land-Based Generation Studies

Studies show that trash is predominantly generated on land and then transported to a receiving water body. The main transport pathway of trash to receiving water bodies is through storm water transport. Several studies have been conducted to determine the sources of land-based trash generation and the rates of trash generation areas. The land areas evaluated in these studies typically included the following: high density residential, low density residential, commercial services, industrial, public facilities, education institutions, military institution, transportation, utilities, mixed urban, open space, agriculture, water, and recreation land uses.

In 2001, the City of Los Angeles Watershed Protection Division performed a geographical analysis of trash generation in the City of Los Angeles. The study showed

that trash is most severe in Central City (Downtown LA) and nearby communities where commercial, industrial, and residential land uses are predominant (City of Los Angeles 2002). According to the 2004 Trash Baseline Monitoring results in Los Angeles County, the highest trash-generating land-uses were high-density residential, mixed use urban, commercial, and industrial land uses in the Ballona Creek and Los Angeles River Watershed, respectively (County of Los Angeles Department of Public Works 2004a; 2004b). The results indicate that high generation of trash is commonly found at highly populated and highly visited areas that attract high vehicular and pedestrian traffic.

BASMAA worked collaboratively with the permittees of the San Francisco Bay Area's Regional Stormwater Permit to develop a regionally consistent method to establish baseline trash loads from their municipality. The project, BASMAA Baseline Trash Generation Rates Project, assisted the permittees in establishing a baseline by which to demonstrate progress towards trash load reduction goals. The project assessed the baseline trash generation rates at 137 monitoring sites at nine different land uses, determined that the four land uses with the highest trash generation rates are (1) retail and wholesale, (2) high-density residential, (3) K-12 schools, and (4) commercial/services and industrial, and developed a conceptual model for trash generation rates (EOA, Inc. 2012a). The project provided a scientifically-sound method for developing trash generation rates that can be adjusted, based on permittee/site specific conditions, and used to develop baseline loading rates and loads (EOA, Inc. 2012a). Baseline loads form the reference point for comparing trash load reductions achieved through control measure implementation (EOA, Inc. 2012b).

Outfall and Storm Drain Monitoring

Outfall and storm drain monitoring results are useful in determining the types of trash that is transported to receiving waters from inland locations. Paper, plastics, cigarette butts, and vegetation are common forms of trash collected in the outfalls and storm drains by Caltrans and municipalities such as Fresno and Stockton.

The Litter Management Pilot Study conducted in 1998 through 2000 by Caltrans identified that trash collected during outfall monitoring in the Los Angeles area consists of paper, plastic, wood, cigarette butts, foamed polystyrene, metal, and glass (Caltrans 2000). Further evaluation of the Litter Management Pilot Study data indicated that smoking- and food-related trash accounted for 20-30 percent of the trash by weight and volume and that approximately 90 percent of the trash collected at the storm drain outfall is floatable (Caltrans 2000). The high percentage of floatable trash can be indicative of the short residence time in the drainage system. Though plastics are one of the more common forms of trash in receiving waters (Moore et al. 2001, Moore et al. 2005; 2011), the Litter Management Pilot Study showed that non-plastics represent 67 percent of trash composition by weight, 57 percent by volume and 66 percent by count (Caltrans 2000). Caltrans reported that polystyrene items represented 5 percent by weight and 15 percent by volume. Plastic film including bags represented 7 percent by weight and 12 percent by volume.

During the 2001-2002 monitoring season, the Caltrans Public Education Litter Monitoring Study collected storm water trash data at Caltrans highway sites in Fresno and Stockton, California. The majority of material collected was vegetation. Trash,

however, as defined as manufactured items greater than 5 millimeters, ranged from 5 to 18 percent by weight and 11 to 43 percent by volume (Caltrans 2004).

Street and Storm Drain Trash Audits

Street and storm drain trash audits characterize trash that can be transported to surface waters by wind, runoff, or storm water collection systems. Trash audits reveal the composition of littered products depicting the materials (paper, plastic, metal, and glass), type of product (bottle, cup, can, and cigarette butt), and sometimes the land-based sources of littered items. In California, two studies that have collected and assessed trash for brands and identifiable sources are the Source Reduction Pilot Project in the San Francisco Bay area and the storm drain trash audit of the City of Oxnard. A street trash audit was conducted in San Francisco, but the sources of the trash were not identified.

In 2010-2011, Clean Water Action coordinated a Source Reduction Pilot Project in which trash was characterized at isolated sites in four jurisdictions: Oakland, Richmond, San Jose, and South San Francisco. The results of the project identified that cigarette butts were the most common item found in trash. The leading quantifiable type of trash on city streets was food and beverage packaging (67%) (Clean Water Action 2011a). Altogether, 81 percent of trash collected originated from food establishments, including fast food, cafes, grocery stores, and convenience food stores. The results of this study suggest that businesses that sell “take-out” food and beverages are the largest sources of trash after cigarette smokers. These studies are instructive because businesses and institutions that decide to purchase packaged and disposable products influence the quantity of potential material that is available to become littered, dumped, improperly disposed, and thus potentially transported to nearby waters.

In 2005, the City of Oxnard completed a study of trash in the open channel storm drain system. According to the Stormdrain Keeper program, the most common trash items collected were plastic, cellophane, paper products, and foamed polystyrene (Pumford 2005). While much of the trash removed from the storm drain open channel was unmarked, key contributors of marked trash were fast food businesses and markets.

A street trash audit was conducted in San Francisco in April 2007 and April 2008. Within this study, trash was classified as “large” for items over four square inches or as “small” for items smaller than four square inches. For both monitoring periods, the most significant type of large trash observed was paper products, followed by plastic materials. Plastic materials include plastic packaging, wrap, plastic bags, and beverage containers. As for small trash observations, the most significant type of small trash was chewing gum, followed by glass pieces (City and County of San Francisco 2007, City of San Francisco 2008).

III. Current Efforts to Address Concerns Related to Trash in California Waters

Regulations and policies are currently implemented in California to address trash in state waters. These efforts are discussed in the following sections.

State Laws and Local Ordinances

Statewide laws and local ordinances have been adopted in California to address trash. For instance, California prohibits littering where such litter "creates a public health and safety hazard, a public nuisance, or a fire hazard" (Penal Code § 374.4). The California Vehicle Code provides that no one may throw or trash, including cigarettes onto highways and adjacent areas (§ 23111 and 23112).

In 2006, California passed Assembly Bill (AB) 2449, the Plastic Bag Recycling Law. This law requires certain retail establishments (grocery stores and pharmacies) that make plastic bags available at checkout to set up in store recycling programs to accept plastic bags. AB 2449 restricted the ability of cities and counties to regulate single-use plastic grocery bags through the imposition of a fee on plastic bags. In 2012, Senate Bill (SB) 1219 repealed the provisions that preempted local regulatory action, and extended recycling requirements for large supermarkets that distribute plastic bags to collect them for recycling until 2020.

California is the leader in implementing local ordinances with goals of reducing trash, specifically plastics. The two types of ordinances passed by local governments focus on addressing single-use disposable items: expanded polystyrene foam and single-use plastic bags. At least 65 jurisdictions have either banned expanded polystyrene foam food containers completely or have prohibited use by government agencies or at public events. A few jurisdictions that have banned or partially banned polystyrene for takeout food packaging include San Francisco, Los Angeles County, Sonoma County, Malibu, and Berkeley (Clean Water Action 2011b).

In 2006, the City of San Francisco passed a ban on single-use plastic bags in grocery stores and pharmacies. Since then, at least 72 local jurisdictions have adopted city and county ordinances for single-use plastic bags (Environment California Research and Policy Center 2011). In 2013, the City of Los Angeles became the largest city in the United States to adopt a single-use carryout bag ordinance. Most ordinances have a paper bag fee as well as a ban on plastic due to the desire to promote reusable bags as the bag of choice. Some large retailers also offer a five cent credit or other discounts for bringing a reusable bag. Statewide, several attempts have been made to pass plastic bag ban bills over the past several years, including AB 1998 in 2010 and SB 405 in 2013, although none have been passed in the State Legislature (West Coast Governors' Alliance on Ocean Health 2013).

On September 30, 2014, Governor Edmund G. Brown Jr. signed the nation's first statewide ban on single-use plastic bags—Senate Bill 270 (Sen. Padilla)(2014 Stat. Ch. 850)(adding Chapter 5.3 to Part 3 of Division 30 of the Public Resources Code). Senate Bill 270 aligns state law with the ordinances passed by local governments in California to reduce plastic waste. The new law prohibits grocery stores and pharmacies that have a specified amount of sales in dollars or retail floor space from providing single-use carry-out plastic bags as of July 1, 2015, and enacts the same ban for convenience stores and liquor stores on or after the following year. The legislation prohibits stores from selling or distributing a recycled paper bag or compostable bags at the point of sale for at a cost of less than $0.10.

The proposals to ban plastic bags and polystyrene food containers could result in the use of alternative materials with a variety of potential impacts. Data from the City of San Francisco's Streets Litter Re-Audit report confirmed that eliminating all food-related polystyrene would simply change the type of litter found on our streets and in our waterways, and result in an increase in the non-polystyrene related litter items, thus, showing no overall reduction in litter (or trash to the waterways) (City of San Francisco 2008). Without a ban on all plastic and paper carryout bags, a ban on only plastic bags would simply cause a shift back to paper. According to some lifecycle data, which did not look at end-of-life impacts, greenhouse gas emissions would double due to releases associated with paper bag production and use (Boustead Consulting & Associates Ltd. 2007). In addition, some studies show that policies which force consumers to switch from plastic bags to paper will double energy use and quadruple the amount of waste generated. Similarly, bans on polystyrene food containers would cause a shift to materials with other significant environmental impacts (University of California at San Diego 2006).

No Existing Trash-Specific Water Quality Objectives

Each regional water board has adopted narrative objective(s) for pollutants in its basin plan (Table 15). These narrative objectives refer to trash-related pollutants and other pollutants such as foam and sediment in general terms (i.e., floatable, suspended, and settleable material), but do not specifically refer to trash as a specific pollutant. The Ocean Plan also has similar floatable, suspended, and settleable material objectives, but no specific mention of trash as a pollutant. As summarized in Table 15, there is variability among the existing narrative objectives in the basin plans and the Ocean Plan. Additionally, the ISWEBE Plan lacks a trash-related water quality objective.

Table 15. Trash-Related Water Quality Objectives.

Basin Plan / Ocean Plan	Water Quality Objective
North Coast	*For inland surface waters, enclosed bays and estuaries* Floating Material: Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses. Suspended Material: Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses. Settleable Material: Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or adversely affect beneficial uses.
San Francisco Bay	*For all surface waters except the Pacific Ocean* Floating Material: Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses. Suspended Material: Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses. Settleable Material: Waters shall not contain substances in concentrations that result in the deposition of material that cause nuisance or adversely affect beneficial uses.

Basin Plan / Ocean Plan	Water Quality Objective
Central Coast	*For all inland surface waters, enclosed bays and estuaries* Floating Material: Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses. Suspended Material: Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses. Settleable Material: Waters shall not contain settleable material in concentrations that result in deposition of material that causes nuisance or adversely affects beneficial uses.
Los Angeles	*For inland surface waters and enclosed bays and estuaries (including wetlands)* Floating Material: Floating materials can be an aesthetic nuisance as well as provide substrate for undesirable bacterial and algal growth and insect vectors. Waters shall not contain floating materials, including solids, liquids, foams and scum, in concentrations that cause nuisance or adversely affect beneficial uses. Solid, Suspended, or Settleable Materials: Surface waters carry various amounts of suspended and settleable materials from both natural and human sources. Suspended sediments limit the passage of sunlight into waters, which in turn inhibits the growth of aquatic plants. Excessive deposition of sediments can destroy spawning habitat, blanket benthic (bottom dwelling) organisms, and abrade the gills of larval fish. Waters shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses.
Central Valley Sacramento and San Joaquin Basins	*All surface waters in the basin* Floating Material: Water shall not contain floating material in amounts that cause nuisance or adversely affect beneficial uses. Settleable Material: Waters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses. Suspended Material: Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.
Central Valley Tulare Lake Basin	*For inland surface waters* Floating Material: Waters shall not contain floating material, including but not limited to solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses. Settleable Material: Waters shall not contain substances in concentrations that result in the deposition of material that causes nuisance or adversely affects beneficial uses. Suspended Material: Waters shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

Basin Plan / Ocean Plan	Water Quality Objective
Lahontan	*For all surface waters* Floating Materials: Waters shall not contain floating material, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect the water for beneficial uses. For natural high quality waters, the concentrations of floating material shall not be altered to the extent that such alterations are discernible at the 10 percent significance level. Settleable Materials: Waters shall not contain substances in concentrations that result in deposition of material that causes nuisance or that adversely affects the water for beneficial uses. For natural high quality waters, the concentration of settleable materials shall not be raised by more than 0.1 milliliter per liter. Suspended Materials: Waters shall not contain suspended materials in concentrations that cause nuisance or that adversely affects the water for beneficial uses. For natural high quality waters, the concentration of total suspended materials shall not be altered to the extent that such alterations are discernible at the 10 percent significance level. *Specific to Pine Creek Watershed* Settleable Material: The concentration of settleable material shall not be raised by more than 0.2 milliliter per liter (maximum) and by no more than an average of 0.1 milliliter per liter during any 30-day period.
Colorado River	*All surface waters* Aesthetic Qualities: All waters shall be free from substances attributable to wastewater of domestic or industrial origin or other discharges which adversely affect beneficial uses not limited to: - Settling to form objectionable deposits; - Floating as debris, scum, grease, oil, wax, or other matter that may cause nuisances; and - Producing objectionable color, odor, taste, or turbidity. Suspended Solids and Settleable Solids: Discharges of wastes or wastewater shall not contain suspended or settleable solids in concentrations which increase the turbidity of receiving waters, unless it can be demonstrated to the satisfaction of the Regional Water Board that such alteration in turbidity does not adversely affect beneficial uses. *Specific to New River (has Trash TMDL)* The waters of the River shall be essentially free from trash, oil, scum, or other floating materials resulting from human activity in amounts sufficient to be injurious, unsightly, or to cause adverse effects on human life, fish, and wildlife. Persistent foaming shall be avoided.

Basin Plan / Ocean Plan	Water Quality Objective
Santa Ana	*For enclosed Bays and estuaries* Floatables: Floatables are an aesthetic nuisance as well as a substrate for algae and insect vectors. Waste discharges shall not contain floating materials, including solids, liquids, foam or scum, which cause a nuisance or adversely affect beneficial uses. Solids, Suspended and Settleable: Settleable solids are deleterious to benthic organisms and may cause anaerobic conditions to form. Suspended solids can clog fish gills and interfere with respiration in aquatic fauna. They also screen out light, hindering photosynthesis and normal aquatic plant growth and development. Enclosed bays and estuaries shall not contain suspended or settleable solids in amounts which cause a nuisance or adversely affect beneficial uses as a result of controllable water quality factors. *For inland surface waters* Floatables: Floatables are an aesthetic nuisance as well as a substrate for algae and insect vectors. Waste discharges shall not contain floating materials, including solids, liquids, foam or scum, which cause a nuisance or adversely affect beneficial uses. Solids, Suspended and Settleable: Settleable solids are deleterious to benthic organisms and may cause anaerobic conditions to form. Suspended solids can clog fish gill and interfere with respiration in aquatic fauna. They also screen out light, hindering photosynthesis and normal aquatic plant growth and development. Inland surface waters shall not contain suspended or settleable solids in amounts which cause a nuisance or adversely affect beneficial uses as a result of controllable water quality factors.
San Diego	*For all inland surface waters, enclosed bays and estuaries, coastal lagoons and ground waters* Floating Material: Floating material is an aesthetic nuisance as well as a substrate for algae and insect vectors. Waters shall not contain floating material, including solids, liquids, foams, and scum in concentrations which cause nuisance or adversely affect beneficial uses. Suspended and Settleable Solids: Suspended and settleable solids are deleterious to benthic organisms and may cause the formation of anaerobic conditions. They can clog fish gills and interfere with respiration in aquatic fauna. They also screen out light, hindering photosynthesis and normal aquatic plant growth and development. Waters shall not contain suspended and settleable solids in concentrations of solids that cause nuisance or adversely affect beneficial uses.

Basin Plan / Ocean Plan	Water Quality Objective
Ocean Plan	*Objectives* 1. Floating particulates and grease and oil shall not be visible. 2. The discharge of waste shall not cause aesthetically undesirable discoloration of the ocean surface. 3. Natural light shall not be significantly reduced at any point outside the initial dilution zone as the result of the discharge of waste. 4. The rate of deposition of inert solids and the characteristics of inert solids in ocean sediments shall not be changed such that benthic communities are degraded. *Implementation Provisions* Waste discharged to the ocean must be essentially free of: 1. Material that is floatable or will become floatable upon discharge. 2. Settleable material or substances that may form sediments which will degrade benthic communities or other aquatic life. 3. Substances which will accumulate to toxic levels in marine waters, sediments or biota. 4. Substances that significantly decrease the natural light to benthic communities and other marine life. 5. Materials that result in aesthetically undesirable discoloration of the ocean surface.
ISWEBE Plan	No water quality objective applicable to trash.

Current NPDES Permits and Existing Trash TMDLs

The CWA establishes the NPDES permit as the primary mechanism for achieving water quality standards in navigable waters. NPDES permits are issued to point source dischargers and include effluent and receiving water limitations. Effluent limitations are based on the water quality objectives in the applicable basin plan and are designed to attain and maintain water quality standards in the receiving waters. Currently, existing NPDES permits, such as MS4 Phase I, MS4 Phase II, and Caltrans, have some existing requirements for trash reduction in the form of institutional controls, such as street sweeping and educational programs. These existing requirements can be applicable to multiple types of urban storm water pollutants, including trash.

For those waters that do not attain water quality standards even after NPDES permits are issued to point sources with the effluent limitations described above, the CWA requires states to adopt TMDLs for the pollutants causing the impairment in a water body. TMDLs are designed to restore water quality by controlling the pollutants that cause or contribute to such excursions. A TMDL assigns waste load allocations for specific pollutants to point sources discharging effluent pursuant to the terms and conditions of NPDES permits. A TMDL also assigns load allocations to nonpoint source discharges. Attainment of all load and waste load allocations would, in most cases, result in compliance with the water quality standards within a reasonable time period.

Additionally, discharges not subject to NPDES permits are regulated under Porter-Cologne through WDRs, waivers of WDRs, and prohibitions of discharge. WDRs are

issued by regional water boards and are issued individually for a specific discharge or generally to cover a category of discharges. WDRs may include effluent limitations or other requirements designed to implement applicable water quality control plans, and they may specify when and where a discharge of waste will not be permitted.

The presence of trash in California waters has resulted in a number of waters listed as impaired on the CWA section 303(d) list of Water Quality Limited Segments over the past several listing cycles. According to California's 2008-2010 section 303(d) list of impaired waters, there are 73 listings due to trash in California waters. These impairments will ultimately require some action to address the listing (e.g., TMDLs or other actions). According to the 2010 Integrated Report, 73 water bodies have approved TMDLs for impairments due to trash and debris. Although listings occur in four Regions (San Francisco Bay, Los Angeles, Colorado River Basin, and San Diego), TMDLs have only been developed to date in the Los Angeles Region and the Colorado River Basin Region. In the Colorado River Basin, a TMDL for trash was adopted for the New River (at the international boundary) that included a numeric target of zero trash (Colorado River Basin Water Board 2006). In the Los Angeles Region, fifteen TMDLs were adopted for trash and debris by either the Los Angeles Water Board or U.S. EPA: San Gabriel River East Fork, Ballona Creek, Los Angeles River Watershed, Revolon Slough, Beardsley Wash, Ventura River Estuary, Malibu Creek Watershed, Lake Elizabeth, Munz Lake, Lake Hughes, Legg Lake, Machado Lake, Santa Monica Bay Nearshore and Offshore, Peck Road Park Lake, Echo Park Lake, and Lincoln Park Lake (Table 16; Los Angeles Water Board 2000; 2004; 2007a; 2007b; 2007c; 2007d; 2007e; 2007f; 2008g; 2010, U.S. EPA 2012a).

The Los Angeles Water Board's trash and debris TMDLs set the numeric target for trash in the applicable water bodies to zero, as derived from the water quality objective in the basin plans. The TMDLs have all also defined trash to be "man-made litter," as defined by the California Government Code (§ 68055.1(g)). Implementation plans vary slightly but are mostly based on phased percent reduction goals that can be achieved through discharge permits, BMPs, and structural controls.

Table 16. Existing Trash and Debris TMDLs.

TMDL Name (Year TMDL Effective)	Numeric Target	Implementation
Los Angeles Water Board		
Santa Monica Bay Near and Offshore (2012)	0 (zero) trash and plastic pellets	For trash, the TMDL recommended implementation of full capture systems, MFAC program, or nonstructural BMPs (e.g., trash collection, public education, and bans on certain non-degradable items). For plastic pellets, industries must comply with the Statewide Industrial Permit or other general or individual industrial permits, which require a Stormwater Pollution Prevention Plan.
Peck Road, Lincoln Park, and Echo Park Lakes (2012)	0 (zero) trash	Recommended implementation of full capture systems, MFAC program, or nonstructural BMPs (e.g., trash collection, public education, and bans on certain non-degradable items).

TMDL Name (Year TMDL Effective)	Numeric Target	Implementation
Malibu Creek Watershed (2009)	0 (zero) trash	100% reduction, 8 years from effective date of TMDL using full capture systems or MFAC program for point sources; MFAC or appropriate alternative program for nonpoint sources
Lake Elizabeth, Munz Lake, and Lake Hughes (2008)	0 (zero) trash	10% reduction after third year and 20% per year thereafter using full capture systems or MFAC program for point sources; MFAC or appropriate alternative program for nonpoint sources
Legg Lake (2008)	0 (zero) trash	100% reduction, 8 years from effective date of TMDL using full capture systems or MFAC program for point sources; MFAC or appropriate alternative program for nonpoint sources
Los Angeles River (2008)	0 (zero) trash	40% reduction after first year and 10% per year thereafter using any combination of full/partial capture systems or institutional controls
Machado Lake (2008)	0 (zero) trash	Full capture systems or MFAC program for point sources; MFAC or appropriate alternative program for nonpoint sources
Revolon Slough and Beardsley Wash (2008)	0 (zero) trash	100% reduction, 8 years from effective date of TMDL Full capture systems or MFAC program for point sources; MFAC or appropriate alternative program for nonpoint sources
Ventura River (2008)	0 (zero) trash	100% reduction, 8 years from effective date of TMDL using full capture systems or MFAC program for point sources; MFAC or appropriate alternative program for nonpoint sources
Ballona Creek (2005)	0 (zero) trash	Phased reduction of 10% per year over a 10-year period using capture systems (e.g., catch basin inserts, structural vortex separation system, end of pipe nets) and/or institutional measures (e.g., street sweeping, enforcement of litter laws)
San Gabriel River East Fork (2001)	0 (zero) trash	Litter prevention, trash sweeps, patrol staff enforcing litter laws, trash receptacles and signs
Colorado River Basin Water Board		
New River (2007)	0 (zero) trash	75% reduction within 2 years from effective date of TMDL; 100% reduction within 3 years.

The San Francisco Bay Water Board uses provisions in the San Francisco Bay MRP to address trash in the 27 303(d) listed water bodies in the Region (Order R2-2009-0074). The San Francisco Bay MRP applies to 76 large, medium and small municipalities and flood control agencies in the San Francisco Bay Region. The San Francisco Bay MRP prohibits the discharge of "rubbish, refuse, bark, sawdust, or other solid wastes into surface waters or at any place where they would contact or where they would be eventually transported to surface waters, including flood plain areas." The trash-related receiving water limitations identified in the San Francisco Bay MRP do not place numeric targets on trash but use narrative language to prohibit trash discharges. In the San Francisco Bay MRP, trash is as defined in the California Government Code section 68055.1(g).

Compliance with the discharge prohibition and trash-related Receiving Water Limitations is met through a timely implementation of control measures, BMPs, and any trash reduction ordinances or mandatory full trash capture devices to reduce trash loads from MS4s by set percent reductions (San Francisco Water Board 2009). The San Francisco Bay MRP requires that permittees reduce trash from their storm sewer systems by 40 percent by July 1, 2014. The San Francisco Bay MRP permittees are developing and implementing a Short-Term Trash Load Reduction Plan. The implementation of the Short-Term Trash Load Reduction Plan includes a mandatory minimum level of trash capture systems, cleanup and abatement progress on a mandatory minimum number of Trash Hot Spots[22], and implementation of other control measures and BMPs, such as trash reduction ordinances, to prevent or remove trash loads from MS4s to attain a 40 percent reduction in trash loads by July 1, 2014 (City of Cupertino 2012, City of San Jose 2012).

State Policy Efforts

In response to the increasing problem of trash within the state, particularly plastic trash, policymakers have initiated efforts such as the California Ocean Protection Council's Resolution on Reducing and Preventing Marine Debris (2007) and subsequent Implementation Strategy for Reducing Marine Litter (2008). These policies respectively call for target reductions of trash within a set timeline, and prioritize state efforts for source reduction of "worst offender" plastic trash, such as cigarette butts, plastic bottle caps, plastic bags, and polystyrene. The Implementation Strategy also prioritizes extended producer responsibility for packaging waste, which has already been embraced in Canada, the EU, and other countries (California Ocean Protection Council 2007; 2008). Neither the California Ocean Protection Council Resolution nor the Implementation Strategy details methodologies for decreasing trash in the context of NPDES storm water permitting or other federal and state clean water laws.

In 2013, the West Coast Governor's Alliance on Ocean Health introduced a Marine Debris Strategy. The objectives of the Strategy are to prevent marine debris from entering the ocean or littering beaches; maximize recovery of marine debris in the ocean or on shore; reduce and prevent the negative impacts of marine debris; and enhance existing efforts through communication and collaboration among interested parties on the West Coast. The Strategy provides a toolbox of key actions that may be implemented collaboratively or individually by western states at its discretion and allows for the successful achievement of target milestones through various reduction methods.

[22] Trash Hot Spots are to be cleaned up to a level of "no visual impact" at least one time per year for the term of the permit. Trash Hot Spots shall be at least 100 yards of creek length or 200 yards of shoreline length.

APPENDIX B: ENVIRONMENTAL CHECKLIST

Background

PROJECT TITLE: Amendment to the Water Quality Control Plan for the Ocean Waters of California to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California

LEAD AGENCY: State Water Recourses Control Board

Division of Water Quality

1001 I Street

Sacramento, California 95814

CONTACT:

Primary Contact:

Dr. Maria de la Paz Carpio-Obeso, Ocean Standards Unit Chief

Office Phone: (916) 341-5858

Email: MarielaPaz.Carpio-Obeso@waterboards.ca.gov

Secondary Contact:

Johanna Weston, Ocean Standards Unit Environmental Scientist

Office Phone: (916) 327-8117

Email: Johanna.Weston@waterboards.ca.gov

PROJECT LOCATION: Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California, and Water Quality Control Plan for Ocean Waters of California.

DESCRIPTION OF PROJECT: The State Water Board is proposing an Amendment to the Water Quality Control Plan for Ocean Waters of California to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. The amendment to control trash and Part 1 Trash Provisions are collectively referred to as the "Trash Amendments".[23] The provisions proposed in the proposed final Trash Amendments include six elements: (1) water quality objective, (2) applicability, (3) prohibition of discharge, (4) implementation provisions, (5) time schedule, and (6) monitoring and reporting requirements. The

[23] The State Water Board intends to amend the Water Quality Control Plan for Enclosed Bays and Estuaries of California to create the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California Plan (ISWEBE Plan). The State Water Board intends that the Part 1 Trash Provisions will be incorporated into the ISWEBE Plan, once it is adopted.

proposed provisions would apply to all surface waters of the state, with the exception of those waters within the jurisdiction of the Los Angeles Water Board with trash or debris TMDLs that are in effect prior to the effective date of the Trash Amendments.

The State Water Board's project objective for the final Trash Amendments is to address the impacts of trash on surface water bodies across California (with the exception of those waters within the jurisdiction of the Los Angeles Water Board with trash or debris TMDLs that are in effect prior to the effective date of the Trash Amendments) through development of a statewide plan governing trash. The project objective for the final Trash Amendments is to provide statewide consistency for the Water Boards' regulatory approach to protect aquatic life and public health beneficial uses, and reduce environmental issues associated with trash in state waters, while focusing limited resources on high trash generating areas.

The reasonably foreseeable methods of compliance with the final Trash Amendments are described in Section 5, and the environmental effects are described in Section 6 of the Final Staff Report. The reasonably foreseeable methods of compliance are addressed by type of trash-control method, namely: treatment controls (e.g., catch basin inserts, vortex separation systems, trash nets, and Gross Solids Removal Devices), institutional controls (e.g., enforcement of litter laws, street sweeping, storm drain cleaning, public education, and ordinances), and LID and multi-benefit projects.

Environmental Impacts

The environmental factors checked below could be potentially affected by this project. See the Section 6 of the Final Staff Report for more details.

☐	Aesthetics	☐	Agriculture and Forestry Resources	☑	Air Quality
☑	Biological Resources	☑	Cultural Resources	☑	Geology/Soils
☑	Greenhouse Gas Emissions	☑	Hazards & Hazardous Materials ☐ Energy and Mineral Resources	☑	Hydrology/Water Quality
☑	Land Use/Planning	☐	Mineral Resources	☑	Noise
☐	Population/Housing	☑	Public Services	☐	Recreation
☑	Transportation/Traffic	☑	Utilities/Service Systems	☐	Mandatory Findings of Significance

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
AESTHETICS. Would the project:				
a) Have a substantial adverse effect on a scenic vista?	☐	☐	☑	☐

b)	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?	☐	☐	☐	☑
c)	Substantially degrade the existing visual character or quality of the site and its surroundings?	☐	☐	☑	☐
d)	Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?	☐	☐	☐	☑

Although the final Trash Amendments do not require land alteration, it is expected that some minimal land alteration would be associated with several of the reasonably foreseeable methods of compliance. While compliance may require the installment of full capture systems, it is unlikely that the aesthetics of the natural environment would be adversely affected by improvements to existing infrastructure.

The general aesthetic characteristic of those portions of the state where the final Trash Amendments would be implemented are densely urbanized. Implementing trash reduction measures should reduce the visual effects of litter generated within the jurisdiction and should reduce the visual effects of the high volumes of trash that collect downstream from the upstream sources. Trash may collect near storm water inlets where capture devices block trash from entering the storm water system. The amount of trash that may accumulate at these locations should not differ from baseline conditions, and the trash accumulating would not be entering the storm water system. Increased street sweeping and other institutional controls could lessen the amount of trash near storm water drop inlets, decreasing the amount of trash that may accumulate. Implementation of the final Trash Amendments would eventually improve the overall aesthetic appeal of the state by the removal of visible trash, thus resulting in a positive impact.

Since vortex separation system units and catch basin inserts would be installed within already existing storm drain networks, it is also not foreseeable that the installation of a vortex separation system or catch basin insert would substantially damage scenic resources and/or degrade the existing visual character or quality of any particular location and its surroundings. It is not foreseeable that the installation activities associated with these units would result in any substantial adverse effect on the scenic vistas of the location. Catch basin insert are unlikely to create an aesthetically offensive site after installation because they are installed at street level.

Installation of in-line trash nets would not foreseeably obstruct scenic vistas or opens views to the public as their installation will be limited to locations within the storm drain system and not in open channels. To the extent that a particular control at a particular site could obstruct scenic views, such an impact could be avoided by employing non-structural controls such as increased litter enforcement. End-of-Pipe trash nets are surface devices and could impair the aesthetics of the installation site. This impairment could be alleviated by employing alternative structural devices, such as in-line trash nets, or by employing nonstructural controls, such as increased litter enforcement.

Trash nets could also become targets of vandalism. Improved security measures and enforcement of anti-vandalism regulations could decrease instances of vandalism.

Gross Solids Removal Devices are subsurface devices and, as such, would not foreseeably obstruct scenic vistas or open views after installation. The installation of Gross Solids Removal Devices, however, may affect the aesthetics of the installation site. This effect on aesthetics could be lessened by using construction BMPs, such as screening off the construction site. Standard architectural and landscape architectural practices can be implemented to reduce impacts from aesthetically offensive structural impacts. Any effects would be short-term and not be considered to substantially degrade the existing visual character or quality of the site and its surroundings.

Gross Solids Removal Devices, as well as trash nets, could also become targets of vandalism. Vandalized structures may become an aesthetically offensive site. Vandalism, however, already exists to some degree in most urbanized areas and adding new structures are not likely to have any impact upon current vandalism trends over baseline conditions. Improved security measures and enforcement of anti-vandalism regulations could decrease instances of vandalism.

Neither increased street sweeping, enforcement of litter laws, ordinances, nor public education result in impairment of scenic and open views. Rather, these alternatives would pose a positive aesthetic impact by reducing visible trash.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

AGRICULTURAL AND FOREST RESOURCES. In determining whether impacts to agricultural resources are significant environmental impacts, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:

a) Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping & Monitoring Program of the California Resources Agency, to non-agricultural uses?	☐	☐	☐	☑
b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?	☐	☐	☐	☑
c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)) or timberland (as defined by Public Resources Code section 4526)?	☐	☐	☐	☑

d) Result in the loss of forest land or conversion of forest land to non-forest use?	☐	☐	☐	☑
e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?	☐	☐	☐	☑

The final Trash Amendments would not affect agriculture or farmland as they do not alter zoning laws or require conversions to different land uses. Significant trash generation is not expected on agricultural or forestry lands, therefore the use of structural BMPs is not likely in these areas.

Increased street sweeping would be implemented in currently urbanized areas, and it is unlikely that this implementation would cause the removal, disturbance or change in agricultural or forest resources. The implementation would not result in new population or employment growth at the extent that could create a need for new housing development on agricultural or forest land. The implementation also would not require any off-site road improvements or other infrastructure that could result in conversion of farmland to non-agricultural use or forest land to non-forest use.

Enforcements of litter laws, ordinances, and public education would be implemented in currently urbanized areas. There are no foreseeable impacts on agricultural or forest resources.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
AIR QUALITY. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a) Conflict with or obstruct implementation of the applicable air quality plan?	☐	☑	☐	☐
b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	☐	☑	☐	☐
c) Expose sensitive receptors to substantial pollutant concentrations?	☐	☐	☑	☐
d) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions that exceed quantitative thresholds for ozone precursors)?	☐	☑	☐	☐

e) Create objectionable odors affecting a substantial number of people?	☐	☑	☐	☐

Potential impacts to air quality due to implementation of the final Trash Amendments are discussed in Section 6.2 Air Quality of the Final Staff Report.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
BIOLOGICAL RESOURCES. Would the project:				
a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☑	☐	☐
b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?	☐	☐	☑	☐
c) Have a substantial adverse effect on federally-protected wetlands as defined by Section 404 of the federal Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, *etc.*) through direct removal, filling, hydrological interruption or other means?	☐	☐	☑	☐
d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory corridors, or impede the use of native wildlife nursery sites?	☐	☑	☐	☐
e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?	☐	☐	☑	☐
f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?	☐	☐	☑	☐

Potential impacts to biological resources due to implementation of the final Trash Amendments are discussed in Section 6.3 of the Final Staff Report.

	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant

Issues (and Supporting Information Sources):	Impact	Incorporated	Impact	No Impact
CULTURAL RESOURCES. Would the project:				
a) Cause a substantial adverse change in the significance of a historical resource as defined in § 15064.5?	☐	☑	☐	☐
b) Cause a substantial adverse change in the significance of an archaeological resource as defined in § 15064.5?	☐	☑	☐	☐
c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	☐	☑	☐	☐
d) Disturb any human remains, including those interred outside of formal cemeteries?	☐	☑	☐	☐

Potential impacts to cultural resources due to implementation of the final Trash Amendments are discussed in Section 6.4 Cultural Resources of the Final Staff Report.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
GEOLOGY and SOILS. Would the project:				
a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
i) Rupture of a known earthquake fault, as delineated in the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines & Geology Special Publication 42.	☐	☐	☐	☑
ii) Strong seismic ground shaking?	☐	☐	☐	☑
iii) Seismic-related ground failure, including liquefaction?	☐	☑	☐	☐
iv) Landslides?	☐	☐	☐	☑
b) Result in substantial soil erosion or the loss of topsoil?	☐	☑	☐	☐
c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?	☐	☐	☐	☑

d) Be located on expansive soils, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	☐	☐	☐	☑
e) Have soils incapable of adequately supporting the use of septic tanks or alternate wastewater disposal systems where sewers are not available for the disposal of wastewater?	☐	☐	☐	☑

Potential impacts to geological and soil resources due to implementation of the final Trash Amendments are discussed in Section 6.5 Geology/Soils of the Final Staff Report.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
GREENHOUSE GAS EMISSIONS. Would the project:				
a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	❒	☑	❒	❒
b) Conflict with any applicable plan, policy or regulation of an agency adopted for the purpose of reducing the emissions of greenhouse gases?	❒	❒	❒	☑

Potential impacts from greenhouse gas emissions due to implementation of the final Trash Amendments are discussed in Section

6.6 Greenhouse Gas Emissions of the Final Staff Report.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
HAZARDS and HAZARDOUS MATERIALS. Would the project:				
a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	☐	☑	☐	☐
b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	☐	☑	☐	☐
c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within ¼ mile of an existing or proposed school?	☐	☑	☐	☐

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code § 65962.5 and, as a result, would it create a significant hazard to the public or to the environment?	☐	☑	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or a public use airport, would the project result in a safety hazard for people residing or working in the project area?	☐	☑	☐	☐
f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?	☐	☑	☐	☐
g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?	☐	☑	☐	☐
h) Expose people or structures to a significant risk of loss, injury, or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?	☐	☐	☐	☑

Potential impacts from hazards or hazardous materials due to implementation of the final Trash Amendments are discussed in Section 6.7 Hazards and Hazardous Materials of the Final Staff Report.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
HYDROLOGY and WATER QUALITY. Would the project:				
a) Violate any water quality standards or waste discharge requirements?	☐	☐	☐	☑
b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (*e.g.*, the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?	☐	☐	☐	☑
Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation on- or off-site?	☐	☐	☐	☑

Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?	☐	☑	☐	☐
Create or contribute runoff water which would exceed the capacity of existing or planned storm water drainage systems or provide substantial additional sources of polluted runoff?	☐	☐	☐	☑
Otherwise substantially degrade water quality?	☐	☐	☑	☐
Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?	☐	☐	☐	☑
Place within a 100-year flood hazard area structures which would impede or redirect flood flows?	☐	☐	☐	☑
Expose people or structures to a significant risk of loss, injury, or death involving flooding, including flooding as a result of the failure of a levee or dam?	☐	☐	☐	☑
Inundation by seiche, tsunami, or mudflow?	☐	☐	☐	☑

Potential impacts to hydrology and water quality due to implementation of the final Trash Amendments are discussed in Section

6.8 Hydrology/Water Quality of the Final Staff Report.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
LAND USE AND PLANNING. Would the project:				
a) Physically divide an established community?	☐	☐	☐	☑
b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to, the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	☐	☐	☑	☐
c) Conflict with any applicable habitat conservation plan or natural community conservation plan?	☐	☐	☐	☑

Potential impacts to land use and planning due to implementation of the final Trash Amendments are discussed in Section

6.9 Land Use/Planning of the Final Staff Report.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
MINERAL RESOURCES. Would the project:				
a) Result in the loss of availability of a known mineral resource that would be of future value to the region and the residents of the State?	☐	☐	☐	☑
b) Result in the loss of availability of a locally-important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan?	☐	☐	☐	☑

The final Trash Amendments will not have a substantial impact on mineral resources. Any mineral resources that may occur within areas chosen for the installation of structural controls will have already been made unavailable by the existence of the current land uses and related infrastructure. Implementation of the final Trash Amendments will not further impact any potential mineral resources.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
NOISE. Would the project result in:				
a) Exposure of persons to, or generation of, noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	☐	☑	☐	☐
b) Exposure of persons to, or generation of, excessive groundborne vibration or groundborne noise levels?	☐	☑	☐	☐
c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☐	☐	☑
d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	☐	☑	☐	☐
e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing in or working in the project area to excessive noise levels?	☐	☑	☐	☐
f) For a project within the vicinity of a private airstrip, would the project expose people residing in or working in the project area to excessive noise levels?	☐	☑	☐	☐

Potential noise impacts due to implementation of the final Trash Amendments are discussed in Section 6.10 Noise and Vibration of the Final Staff Report.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
POPULATION AND HOUSING. Would the project:				
a) Induce substantial population growth in an area either directly (*e.g.*, by proposing new homes and businesses) or indirectly (*e.g.*, through extension of roads or other infrastructure)?	☐	☐	☐	☑
b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑
c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?	☐	☐	☐	☑

The final Trash Amendments would not induce population growth, affect housing, or displace individuals. See also Section 7.1 Growth-Inducing Impacts of the Final Staff Report for further discussion.

Vortex separation systems (i.e., Continuous Deflective Separation units) are installed below grade and are appropriate for highly urbanized areas where space is limited. The installation of vortex separation systems may require modification of storm water conveyance structures. These devices can be installed in existing storm drain infrastructure, therefore, no additional land is required nor is there a need to displace existing housing. Maintenance of the vortex separation system involves the removal of the solids either by using a vactor truck, a removable basket or a clam shell excavator depending on the design and size of the unit. Therefore, it is not reasonably foreseeable that the installation and maintenance of vortex separation systems would directly or indirectly induce population growth, displace people or existing housing, or create a demand for additional housing. To the extent that these devices, if employed, would displacement of available housing, it is not reasonably foreseeable that the responsible agencies would install such a device. Rather, an agency would foreseeably opt for non-structural control measures, such as enforcing litter ordinances.

The Gross Solids Removal Devices were developed by Caltrans to be retrofitted below grade into existing highway drainage systems or installed in future highway drainage systems. These devices are appropriate for highly urbanized areas where space is limited. The Gross Solids Removal Devices can be designed to accommodate vehicular loading. Maintenance of the devices involves the removal of the solids either by using a vactor truck or other equipment. The installation of Gross Solids Removal Devices may require modification of storm water conveyance structures; however, these units would generally be sited below grade and within existing storm drain infrastructure. The installation of Gross Solids Removal Devices is not expected to require additional

land nor is there a need to displace existing housing. To the extent that these devices, if employed, may conceivably require the displacement of available housing, it is not reasonably foreseeable that the responsible agencies would install such a device. Rather, an agency would foreseeably opt for non-structural control measures, such as enforcing litter ordinances.

It is not reasonably foreseeable that the installation and maintenance of trash nets or catch basin inserts would induce population growth, displace people or existing housing or create a demand for additional housing. These units are installed entirely within existing storm drain infrastructure.

It is not reasonably foreseeable that increased street sweeping would induce population growth, displace people or existing housing or create a demand for additional housing. Current street sweeping, whether infrequent or frequent, does not have this effect. It is not reasonably foreseeable that enforcement of litter laws would induce population growth, displace people or existing housing or create a demand for additional housing. Current litter laws do not have this effect. It is not reasonably foreseeable that public education and ordinances would induce population growth, displace people or existing housing or create a demand for additional housing.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact

PUBLIC SERVICES. Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service rations, response times or other performance objectives for any of the public services:

a)	Fire protection?	☐	☑	☐	☐
b)	Police protection?	☐	☑	☐	☐
c)	Schools?	☐	☐	☐	☑
d)	Parks?	☐	☐	☐	☑
e)	Other public facilities?	☐	☐	☐	☑

Because of the expected location of the proposed project and reasonably foreseeable methods of compliance, it is not expected to be in the vicinity of or affect the objectives for schools, parks, or other public facilities. Potential impacts to fire and police protection public services due to implementation of the final Trash Amendments are discussed in Section

6.11 Public Services of the Final Staff Report.

	Potentially Significant	Less Than Significant With Mitigation	Less Than Significant

Issues (and Supporting Information Sources):	Impact	Incorporated	Impact	No Impact
RECREATION. Would the project:				
a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?	☐	☐	☑	☐
b) Include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?	☐	☐	☑	☐

The final Trash Amendments would not have a substantial impact on recreation.

Treatment controls (e.g., vortex separation systems, catch basin inserts, etc.), can be installed at or below grade in existing storm drain systems, which should not require any additional land. Therefore, it is not reasonably foreseeable that park land, recreational of open space areas will be needed for the installation of structural controls.

Installation of treatment controls may temporarily impact the usage of existing recreational sites. For instance, bike lanes or parking locations for recreational facilities may be temporarily unavailable during installation of structural controls. These potential impacts will be short in duration and have a less-than-significant effect on recreation.

It is not reasonably foreseeable that increased street sweeping, enforcement of litter laws, ordinances, or public education would impact the quality or quantity of existing recreational opportunities. In addition, implementation of the final Trash Amendments is designed to improve the quality of the affected water bodies and associated beaches and shorelines. This will likely create a positive impact and increase recreational opportunities throughout the watersheds.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
TRANSPORTATION / TRAFFIC. Would the project:				
a) Exceed the capacity of the existing circulation system, based on an applicable measure of effectiveness (as designated in a general plan policy, ordinance, etc.), taking into account all relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	☐	☑	☐	☐
b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	☐	☑	☐	☐

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that result in substantial safety risks?	☐	☐	☐	☑
d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?	☐	☐	☐	☑
e) Result in inadequate emergency access?	☐	☑	☐	☐
f) Conflict with adopted policies, plans, or programs supporting alternative transportation (e.g., bus turnouts, bicycle racks)?	☐	☑	☐	☐

Potential impacts to transportation/traffic due to implementation of the final Trash Amendments are discussed in Section 6.12 Transportation/Traffic of the Final Staff Report.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
UTILITIES AND SERVICE SYSTEMS. Would the project:				
a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	☐	☐	☐	☑
b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	☐	☐	☐	☑
c) Require or result in the construction of new storm water drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental impacts?	☐	☑	☐	☐
d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?	☐	☐	☐	☑
e) Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	☐	☐	☐	☑
f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?	☐	☐	☑	☐
g) Comply with federal, state, and local statutes and regulations related to solid waste?	☐	☐	☐	☑

Potential impacts related to storm drainage to implementation of the final Trash Amendments are discussed in Section 6.13 Utilities/Service Systems of the Final Staff Report.

Issues (and Supporting Information Sources):	Potentially Significant Impact	Less Than Significant With Mitigation Incorporated	Less Than Significant Impact	No Impact
MANDATORY FINDINGS OF SIGNIFICANCE.				
a) Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	☐	☑	☐	☐
b) Does the project have impacts that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects)	☐	☑	☐	☐
c) Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	☐	☑	☐	☐

The final Trash Amendments would neither degrade the environment nor adversely affect cultural resources. The installation of structural controls may temporarily impact environmental resources, but as discussed in Section 6 of the Final Staff Report, implementation of the mitigation measures identified in the draft SED should reduce potential impacts to less-than significant levels.

As discussed in Section 7.2 Cumulative Impacts Analysis of the Final Staff Report, adoption of the final Trash Amendments would not result in significant cumulatively considerable impacts with implementation of mitigation measures. The overall effect of the final Trash Amendments would be a reduction in the amount of trash entering the State's water bodies thereby improving water quality and protecting the beneficial uses of those waters.

The final Trash Amendments would not, in any way, cause substantial adverse effects on human beings. Where temporary effects have been identified in the Final Staff Report (i.e., transportation/traffic), mitigation measures have also been identified to reduce those impacts to less-than-significant levels.

APPENDIX C: ECONOMIC CONSIDERATIONS FOR THE FINAL AMENDMENT TO THE WATER QUALITY CONTROL PLAN FOR THE OCEAN WATERS OF CALIFORNIA TO CONTROL TRASH AND PART 1 TRASH PROVISIONS OF THE WATER QUALITY CONTROL PLAN FOR INLAND SURFACE WATERS, ENCLOSED BAYS, AND ESTUARIES OF CALIFORNIA

CONTACT: Rafael Maestu, Economist
Office of Research, Planning and Performance
State Water Resources Control Board
Email: Rafael.Maestu@waterboards.ca.gov

Summary and Findings

California communities spend more than $428 million annually to control trash from entering waters of the state, or $10.71 per capita. This economic analysis estimates that between $2.93 and $7.77 more per resident might need to be spent each year for the next ten years to implement the final Trash Amendments. The economic analysis also finds that communities in the Los Angeles Region implementing a trash and debris Total Maximum Daily Load (TMDL) are spending an average of $5.3 per resident per year more than communities not implementing a trash or debris TMDL.

This economic analysis provides an estimate of the compliance costs and considers the incremental costs applicable National Pollutant Discharge Elimination System (NPDES) permitted storm water dischargers and other dischargers may need to incur based on the implementation provisions and time schedules in the final Trash Amendments. The NPDES storm water permits addressed in this economic analysis include Municipal Separate Storm Sewer Systems (MS4s) Phase I and Phase II, Department of Transportation (Caltrans), Industrial General Permit (IGP), and the Construction General Permit (CGP).

Two basic methods[24] to estimate the incremental cost of compliance were used in this economic analysis. The first method is based on cost of compliance per capita, and the second method is based on land cover.

The estimated incremental annual cost to comply with the requirements of the final Trash Amendments ranged from $4[25] to $10.67[26] per year per capita for MS4 Phase I NPDES permittees and from $7.77[27] to $7.91[28] per year per capita for smaller communities regulated

[24] The introduction includes a more detailed description of the methods used in this economic analysis.

[25] The estimated incremental cost of $4.09 is based on a mixture of full capture systems and institutional controls. See Table 18 ($67 M divided by a population of 16.4 M).

[26] The estimated cost is based on all capital expenditures occurring in one single year. See Table 13 ($176 M divided by a population of 16.4 M).

[27] The estimated incremental cost of $7.77 is based on a mixture of full capture systems and institutional controls. See Table 25 ($32.9 M divided by a population of 4.2 M).

under MS4 Phase II NPDES permits. For IGP facilities, the estimated compliance cost is $33.9 million or $3,671[29] per facility. Caltrans currently spends $52 million on trash control[30]. To comply with the final Trash Amendments, expenditures by Caltrans are estimated to increase by $34.5 million in total capital costs and $14.7 million per year for operation and maintenance of structural controls[31]. A summary of the findings are presented in Table 1 with detailed discussion in body of the economic analysis.

In addition to employing trash control, permittees would need to prepare implementation plans and submit monitoring reports. Cost associated with implementation plans and monitoring and reports were not included in this analysis due to the uncertainty of the costs of implementing these new requirements.

This economic analysis fulfills the requirements of Water Code sections 13170 and 13241, subdivision (d) that require the State Water Board to consider economics when establishing water quality objectives. This economic analysis is not a cost-benefit analysis, but a consideration of potential costs of a suite of reasonably foreseeable measures to comply with the final Trash Amendments.

[28] The estimated cost is based on all capital expenditures occurring in one single year. See Table 21 ($33.5 M divided by a population of 4.2 M).

[29] See Table 28 and Table 30. Total cost divided by number of facilities.

[30] McGowen, Scott. California Department of Transportation. Letter to Diana Messina, State Water Resources Control Board. November 7, 2014.

[31] See Table 30.

Table 1. Summary of Estimated Compliance Costs of the Final Trash Amendments for NPDES Storm Water Permits

NPDES Storm Water Permit	Number of Entities Accessed	Population /Size	Baseline of Current Trash Control Costs: Total and Per Capita Per Year	Estimated Incremental Cost for Track 1:Total and Per Capita Per Year	Estimated Incremental Cost for Track 2:Total and Per Capita Per Year (at Year 10)
MS4 Phase I (Based on per capita estimate approach)	193 communities	16,498,556	$160 M Total ($9.7 per capita) $22 M for Full Capture System costs ($1.36 per capita) $138 M Institutional Controls ($8.34 per capita)	**Highest Annual Incremental Cost** [a]: $65 M (total) $3.95 (per capita) **Total Capital Cost** [b]: $123M (total) $7.47 (per capita) **Operation & Maintenance:** $52.8 M per year $3.20 (per capita)	$67,481,061 $4.09 per capita
MS4 Phase II (Based on per capita estimate approach)	148 communities	4,310,345	$49 M Total ($11.53 per capita) $6.8 M for Full Capture System ($1.62 per capita) $42 M Institutional Controls ($9.91 per capita)	**Highest Annual Incremental Cost**[a]: $12.4 M (total) $2.93 (per capita) **Total Capital Cost** [b]: $23.4M $5.54 (per capita) **Operation & Maintenance:** $10 M per year $2.37 (per capita)	$32,922,053 $7.77 per capita
MS4 Phase I and Phase II (Based on Land Coverage Approach)	262,302 acres of developed, high intensity land coverage	20,736,141	$209 M Total ($10.1 per capita) $29 M for Full Capture System ($1.39 per capita) $180 M Institutional Controls ($8.68 per capita)	**Highest Annual Incremental Cost**[a]: $81 M (total) $3.93 (per capita) **Total Capital Cost** [b]: $188.6 M (total) $9.1 (per capita) **Operation & Maintenance:** $80.8 M per year $3.90 (per capita per year)	Not Estimated

Industrial General Permit	9,251 facilities	N/A	Unknown	$33.9 M[d] $3,671 per facility	
Construction General Permit	6,121 facilities	N/A	Unknown	No expected increase	No expected increase
Caltrans	N/A	50,000 lane miles (15,000 centerline miles)	$80 M per year	**Total Capital Cost :** $34.5M **Operation & Maintenance:** $14.7 M per year	N/A

[a] Annual cost at Year 10 (highest cost year) is assumed to be 10% of the total capital cost plus the total operation and maintenance cost for treatment controls.

[b] Total capital costs are incremental total costs to achieve full compliance with the final Trash Amendments.

[c] Operation and maintenance costs are annual costs after full installation of all required treatment controls.

[d] Since the current baseline costs are unknown, all trash control costs are conservatively assumed to be incremental.

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1. INTRODUCTION

The presence of trash in surface waters, especially coastal and marine waters, is a serious issue in California. The State Water Resources Control Board (State Water Board) is proposing an Amendment to the Water Quality Control Plan for Ocean Waters of California to Control Trash and Part 1 Trash Provisions of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California. This economic analysis shall collectively refer to the amendment to control trash and Part 1 Trash Provisions as "Trash Amendments".[32] The final Trash Amendments would amend the Water Quality Control Plans for Ocean Waters of California (Ocean Plan) and be incorporated to the forthcoming Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWEBE Plan). The final Trash Amendments aim to provide statewide consistency for the Water Boards' regulatory approach to protect aquatic life and public health beneficial uses, and reduce environmental issues associated with trash in state waters, while focusing limited resources on high trash generating areas.

The final Trash Amendments would apply to all surface waters of the state: ocean waters, enclosed bays, estuaries, and inland surface waters, with the exception of those waters within the jurisdiction of the Los Angeles Regional Water Quality Control Board (Los Angeles Water Board) with trash or debris TMDLs that are in effect prior to the effective date of the Trash Amendments. The provisions proposed in the final Trash Amendments include six elements: (1) water quality objective, (2) applicability, (3) prohibition of discharge, (4) implementation provisions, (5) time schedule, and (6) monitoring and reporting requirements.

A central element of the final Trash Amendments is a land-use based compliance approach to focus trash control to areas with high trash generation rates. Within this land-use based approach, a dual alternative compliance Track approach is proposed for permitted storm water dischargers (i.e., MS4 Phase I, MS4 Phase II, Caltrans, IGP, and CGP) to implement the prohibition of discharge for trash. Table 2 outlines the proposed alternative compliance Tracks for permitted storm water dischargers. Specifics of the final Trash Amendments are described in Section 2 of the Final Staff Report.

[32] The State Water Board intends to amend the Water Quality Control Plan for Enclosed Bays and Estuaries of California to create the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California Plan (ISWEBE Plan). The State Water Board intends that the Part 1 Trash Provisions will be incorporated into the ISWEBE Plan, once it is adopted.

Table 2. Overview of Proposed Compliance Tracks for NPDES Storm Water Permits

	Track 1	Track 2
NPDES Storm Water Permit	MS4 Phase I and II IGP/CGP*	MS4 Phase I and II Caltrans IGP/CGP*
Plan of Implementation	Install, operate and maintain full capture systems in storm drains that capture runoff from one or more of the priority land uses/facility/site.	Implement a plan with a combination of full capture systems, multi-benefit projects, institutional controls, and/or other treatment controls to achieve full capture system equivalency.
Time Schedule	10 years from first implementing permit but no later than 15 years from the effective date of the Trash Amendments.**	10 years from first implementing permit but no later than 15 years from the effective date of the Trash Amendments.**
Monitoring and Reporting	Demonstrate installation, operation, and maintenance of full capture systems and provide mapped location and drainage area served by full capture systems.***	Develop and implement set of monitoring objectives that demonstrate effectiveness of the selected combination of controls and compliance with full capture system equivalency.***

* IGP/CGP permittees would first demonstrate inability to comply with the outright prohibition of discharge of trash.

** MS4 permittees designated after the effective date of the implementing permit would be in full compliance ten years after the date of designation. Where a permitting authority makes a determination that a specific land use or location generates a substantial amount of trash, the permitting authority has the discretion to determine a time schedule with a maximum of ten years. IGP/CGP permittees would demonstrate full compliance with deadlines contained in the first implementing permit.

*** No trash monitoring requirements for IGP/CGP, however, IGP/CGP permittees would be required to report trash controls.

This economic analysis provides an estimate of the compliance costs and considers the incremental costs permitted storm water dischargers and other dischargers may need to incur based on the implementation provisions and time schedules proposed in the final Trash Amendments. The economic analysis was conducted under a set of assumptions identified in each section. All costs are expressed in February 2014 dollars, unless otherwise noted.

a. Data Sources, Methodology and Assumptions, Limitations and Uncertainties

This analysis applies general economic principles and generally accepted methods of economic analysis. This section provides an overview of the data sources, a description of the methodology used, the assumptions and the limitations of the analysis.

Data Sources

The data used in this analysis has been obtained from secondary sources and previous studies conducted by universities and other organizations. All data and reports used are publicly available.

Data has been obtained primarily from three sources:

- Cost Considerations conducted for trash and debris TMDLs by the Los Angeles Water Board.
- Studies and surveys conducted by:
    - Kier Associates. The Cost of West Coast Communities of Dealing with Trash, Reducing Marine Debris. September 2012. Prepared for United States Environmental Protection Agency (U.S. EPA).
    - Kier Associates. Waste in Our Water: The Annual Cost to California Communities of Reducing Litter that Pollutes Our Waterways. August 2013. Prepared for the National Resources Defense Council (NRDC).
    - Black & Veatch. Quantification Study of Institutional Measures for Trash TMDL Compliance. November 2012. Prepared for the City of Los Angeles.
- Office of Water Programs, California State University. NPDES Stormwater Cost Survey. January 2005. Prepared for State Water Board.

The economic analysis used Federal 2010 Census data for estimates of land use, population and median household income. For other social and economic information, we relied on the information publicly released by the Demographic Research Unit of the California Department of Finance[33].

We compiled the available cost data and analyzed it by categories of costs[34]. Average and per capita costs were computed and tallied for each category based on the size of the communities. To control for anomalous spending patterns in communities, total annual expenditures were divided by total populations to yield weighted averages (within each population size group).

Methodology and Assumptions

This economic analysis provides a summary overview of the costs associated with reasonably foreseeable means of compliance permittees may select to be in compliance with the final Trash Amendments. This economic analysis is conducted at the macro level to assess the estimated overall impact of the final Trash Amendments. It does not specify the compliance cost for specific permittees. A more detailed analysis would be needed to estimate costs at the micro or project-specific level for each individual permittee.

With respect to MS4s Phase I and Phase II permittees, this economic analysis uses data gathered from individual municipalities regarding current trash control expenditures to establish the baseline of control costs. The economic analysis considers two potential methods to estimate compliance costs with the final Trash Amendments. The first method estimates the current expenditures of trash control per capita and the per capita costs to comply with the final Trash Amendments. The second method estimates the per acre cost for high intensity land cover, e.g., proxy for priority land uses.

The cost factors were used to estimate the potential cost of compliance with the final Trash Amendments to MS4 Phase I and Phase II permittees based on respective population sizes and urban areas classified as high intensity. The estimated incremental compliance costs represent the cost of the additional level of trash control above and beyond the current level of costs

[33] The Economic Research Unit prepares economic forecasts and analyses of various economic developments, advises state departments and local government agencies, and provides economic information to the public. Available at: http://www.dof.ca.gov/research/economic_research_unit/

[34] Categories of cost include, street sweeping, storm drain cleaning and maintenance, storm water capture devices, manual cleanup and public education.

incurred by MS4 Phase I or Phase II permittees subject to the final Trash Amendments. To avoid the disproportionate influence on the overall average cost of large communities, compliance costs were estimated based on population size group.

For IGP permittees, we assumed that smaller facilities would choose to comply with the final Trash Amendments implementing institutional controls rather than full capture systems. It is likely that only larger facilities would choose to install full capture systems. We identified two groups based on facility size. For Track 1 analysis, we estimated similar installation and annual operation and maintenance costs as the municipalities. For Track 2 analysis, we estimated the costs of institutional controls to include a $500 initial training and an annual cost of $300 in other measures. This approach is described in more detail in Section 7.

For Caltrans, the final Trash Amendments focus trash control to significant trash generating areas within its jurisdiction. Currently, there is a lack of information about the specific locations where additional trash control will be implemented. Using a GIS analysis, we made the conservative assumption that significant trash generating areas could be approximated using a percentage of Caltrans facilities located within urban areas. We estimated similar installation and annual operation and maintenance costs as the municipalities. This approach is described in more detail in Section 8.

Estimates Based on Costs per Capita

Humans are the only source of trash as defined in the final Trash Amendments. It is reasonable to assume that the amount of trash generated is directly proportional to the population of each community. Areas with high trash generation rates are influenced by land use type and population density. Factors to take into consideration when evaluating cost of compliance are the size of the community, population density and land use types[35].

To estimate the potential incremental costs of compliance with the final Trash Amendments for MS4 Phase I and Phase II permittees not included in the Los Angeles Region, the average annual per capita cost of implementing full capture systems (Track 1) is estimated using the current average per capita annual cost of areas that are already in compliance with the trash and debris TMDLs within the Los Angeles Region. Per capita cost factors were applied to the entire population in each MS4 Phase I and Phase II. By using this method, the potential cost of compliance with the final Trash Amendments is likely overestimated since not all members of the population would be living in high trash generating areas. At the same time, this method is more accurate at estimating the cost of complying with institutional controls that are proportional to the population size group. To address this potential source of error, we developed specific cost estimates for each MS4 Phase I and Phase II by population size group. This should mitigate for potential variability, such as an observed proportional relationship between high trash generating land uses and MS4 Phase I and Phase II population size groups[36].

Estimates Based on Land Uses

Trash generation rates can vary by land use, therefore a second method was used to estimate the compliance cost of a full capture system based on land coverage[37]. The number of storm

[35] Available land coverage data was used in proxy of land use information. See Section 6 of the Economic Analysis.

[36] See Section 4(b)(i) for a discussion of high density residential areas in proportion to population.

[37] Land cover data was utilized as a proxy to predictively identify priority land uses subject to the final Trash Amendments. The analysis assumes that priority land uses correlates with land cover information. This assumption may underestimate the total area subject to compliance with the final Trash Amendments.

drains per acre varies, depending on the type of land use (e.g., high density residential, commercial, mixed urban, and public transportation stations).

Land coverage data was used to calculate the number of storm drains within each segmented road and land cover. Information on land coverage specific for each specific community regulated under an MS4 Phase I and Phase II permit is not readily available. A total statewide number is estimated based on land coverage of high intensity[38].

This method is the most accurate method to estimate the cost of implementing full capture systems (Track 1)[39]. Using land coverage to estimate the total cost of compliance focuses on the actual priority land use area that would be impacted and excludes other low density populated areas. This methodological approach may reduce the error generated when using per capita estimates on large communities with large populations and proportionally low developed density. This method, however, may overestimate costs by including high intensity land coverage that is not part of an MS4. Since the final Trash Amendments define priority land uses based on the different types of land uses, using land coverage for the analysis may be underestimating the area subject to trash controls.

Limitations and Uncertainties

The economic analysis estimates the potential cost of compliance following two methodologies. The two selected methods have advantages and limitations. The first method is based on average cost per capita and may overestimate the total cost of compliance by assuming that all populations in each community will bear the cost of implementing full capture systems. The second method is based on area defined as developed, high-intensity land coverage, which is assumed to be a proxy for priority land uses as defined in the final Trash Amendments. The analysis, based on cost per capita, would provide best estimates for small and medium size communities with a smaller ratio of resident per acre of high density residential; however this may inflate the total cost for large communities with a small acreage of low density residential areas or communities with an even acreage range of low to high density residential areas. This method is more accurate to estimate the cost of complying with institutional controls that are proportional to the population size group, but this method is less accurate to estimate the cost of implementing full capture systems. Using both methods of analysis would help minimize the potential error in the estimates inherent to each method individually.

Assumption Regarding Compliance Schedules

The final Trash Amendments provide ten years from the first implementing permit for certain permittees to achieve full compliance[40]. Cost estimates for compliance in this economic analysis include the operational costs of treatment and institutional controls. These cost estimates assume a 10% per year expenditure of capital cost in order to achieve full implementation in ten years.

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[38] USGS Multi-Resolution Land Characteristics Consortium Land Cover Data 2006. Available at: http://www.mrlc.gov/nlcd06_leg.php

[39] It would be less accurate when estimating the cost of implementing Track 2, because means of compliance through Track 2 has high diversity with available trash controls. Some institutional trash control options, such as education, are not simply relatable to land use area in contrast to locations of full capture systems.

[40] The final Trash Amendments include a 15-year cap, so if a Water Board delays in adopting or reissuing, permittees may not have the full ten years to comply.

b. Organization of This Economic Analysis

The economic analysis is organized as follows. Sections 1, 2, and 3 describe the permitted storm water dischargers subject to the final Trash Amendments and their current trash control expenditures that are used as the baseline for the remainder of the economic analysis. Sections 4 and 5 estimate the potential incremental costs for MS4 Phase I and II permittees based on cost per capita. Section 6 estimates the potential incremental costs of compliance based on land coverage for MS4 Phase I and II permittees implementing full capture systems. Section 7 estimates the potential costs for facilities regulated under the IGP. Section 8 estimates the potential costs for Caltrans. Finally, Section 9 includes information on other dischargers subject to the final Trash Amendments. A summary of the conclusions reached in each section is stated at the outset of each section, for the convenience of the reader.

2. PERMITTEES SUBJECT TO THE FINAL TRASH AMENDMENTS

One of the main transport mechanisms of trash to receiving waters is through the storm water system. The final Trash Amendments therefore focus on trash control by requiring that NPDES storm water permits, specifically the MS4 Phase I and Phase II Permits, Caltrans Permit, the CGP, and the IGP, to contain implementation provisions that require permittees to comply with the prohibition of discharge. These provisions focus on trash control in the locations with high trash generation rates, in order to maximize the value of limited resources spent on addressing the discharge of trash into state waters.

As of August 6, 2013, the Water Boards reported[41] 16,996 storm water facilities regulated under the Storm Water Construction Facilities, Storm Water Industrial Facilities, and Storm Water Municipal NPDES Permits (Table 3).

Table 3. Facilities and Municipalities Regulated Under the Storm Water Permitting Program

Regional Water Board	Construction	Industrial	Municipal (Phase I and Phase II)	Total
1	179	337	14	538
2	1,069	1,316	109	2,494
3	457	401	45	903
4	1,193	2,683	100	3,976
5F	554	453	25	1,032
5R	173	198	3	374
5S	887	1,094	67	2,048
5 all.	*1,614*	*1,745*	*95*	*3,454*
6A	72	40	5	117
6B	307	190	5	502
6 all.	*379*	*230*	*10*	*619*
7	253	172	19	444
8	1,136	1,583	62	2,781
9	924	784	79	1,787
TOTAL	**7,204**	**9,251**	**532**	**16,996**

a. MS4 Phase I and Phase II Permits

The State Water Resources Control Board and Regional Water Quality Control Board's (collectively, the Water Boards) Municipal Storm Water Permitting Program regulates storm water discharges from MS4s. Storm water is runoff from rain or snow melt that runs off surfaces such as rooftops, paved streets, highways or parking lots and can carry with it trash. The runoff

[41] Water Boards' Fiscal Year 2012-2013 Performance Report released on September 2013. Available at: http://www.waterboards.ca.gov/about_us/performance_report_1213/regulate/21200_npdes_sw_facilities.shtml

with trash can then drain directly into a local stream, lake or bay. The MS4[42] permits are issued in two categories or phases: MS4 Phase I and MS4 Phase II.

Some permittees have provisions specific to the control of trash. For example, the San Francisco Bay Municipal Regional Stormwater Permit requires discharges to meet water quality objectives and ensure the protection of the beneficial uses of receiving waters and their associated habitats. Permittees must demonstrate compliance with trash-related receiving water limitations through implementation of structural controls and institutional controls to reduce trash loads from MS4s. The San Francisco Bay Water Board set load reductions for trash from storm water discharges at 40% by 2014.

In the Los Angeles Region, fifteen TMDLs were adopted for trash and debris by either the Los Angeles Water Board or U.S. EPA. The Los Angeles Water Board's trash and debris TMDLs set the numeric target for trash in the applicable water bodies to zero, as derived from the water quality objective in the basin plans. The TMDLs have all also defined trash to be "man-made litter," as defined by the California Government Code (§ 68055.1(g)). Implementation plans vary slightly but are mostly based on phased percent reduction goals that can be achieved through discharge permits, best management practices (BMPs), and structural controls.

In this economic analysis, the communities regulated under the MS4 NPDES program have been grouped based on factors such as size, land use zones, and population.

b. California Department of Transportation

Caltrans is responsible for the design, construction, management, and maintenance of the state highway system, including freeways, bridges, tunnels, Caltrans' facilities, and related properties. Caltrans is subject to the permitting requirements of CWA section 402(p). Caltrans' discharges consist of storm water and non-storm water discharges from state owned rights-of-way.

Before July 1999, discharges from Caltrans' MS4 were regulated by individual NPDES permits issued by the Regional Water Boards. On July 15, 1999, the State Water Board issued a statewide permit (Order No. 99-06-DWQ) which regulated all discharges from Caltrans MS4s, maintenance facilities and construction activities. On September 19, 2012, the Caltrans' permit was re-issued (Order No. 2012-0011-DWQ) and became effective on July 1, 2013.

Caltrans' System-Wide Management Program describes the procedures and practices used to reduce or eliminate the discharge of pollutants to storm drainage systems and receiving waters. A revised System-Wide Management Program must be submitted to the State Water Board for approval by July 1, 2014.

c. Permitted Storm Water Industrial and Construction Facilities

Under the industrial program, the State Water Board issues an NPDES Industrial General Permit to 9,200 dischargers associated with ten broad categories of industrial activities (Order No. 97-03-DWQ). The permit also requires that dischargers develop a Storm Water Pollution Prevention Plan (SWPPP) and a monitoring plan. Through the SWPPP, dischargers are

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[42] **Municipal Stormwater Phase I Facilities**: The Municipal Storm Water Permits regulate storm water discharges from MS4s. Under Phase I, which began in 1990, the Water Boards have issued NPDES MS4 permits to permittees serving populations greater than 100,000 people. Many of these permits are issued to a group of co-permittees encompassing an entire metropolitan area. These permits are reissued as the permits expire.

Municipal Stormwater Phase II Facilities: Under Phase II, the State Water Board adopted a General Permit for the Discharge of Storm Water from Small MS4s (WQ Order No. 2003-0005-DWQ) to provide permit coverage for smaller municipalities (10,000 to 100,000 people), including non-traditional small MS4s which are governmental facilities such as military bases, public campuses, prisons and hospital complexes.

required to identify sources of pollutants, and describe the means to manage the sources to reduce storm water pollution. For the monitoring plan, facility operators may participate in group monitoring programs to reduce costs and resources. The regulated industrial sites by regional water board are presented in Table 4.

Table 4: Facilities Regulated under the Storm Water Industrial and Construction Program **(as of June 30, 2013)**

Regional Water Board	Industrial Storm Water Facilities	Construction Storm Water Facilities
1	334	134
2	1,319	922
3	396	391
4	2,689	1,072
5	1,721	1,341
6	227	313
7	172	219
8	1,573	892
9	770	835
TOTAL	9,201	6,121

CGP permittees are already required to comply with a prohibition of debris discharge from construction sites[43]. Although current costs for trash control by CGP permittees are unknown, there is no expected increase of costs as a result of the final Trash Amendments.

d. Other Facilities and Activities Subject to the Proposed Trash Amendments

The final Trash Amendments include a prohibition of discharge for discharges not regulated under NPDES permits, waste discharge requirements (WDRs) or waivers of WDRs. The prohibition also applies to the discharge of preproduction plastic by manufacturers of preproduction plastics, transporters and users of preproduction plastics to surface waters of the state.

Also, the final Trash Amendments include a provision allowing the Water Boards to require trash controls in areas or facilities that may generate trash, such as high usage campgrounds, picnic areas, beach recreation areas, or marinas.

Due to the uncertainty surrounding the activities and facilities potentially subject to these requirements, these groups were not included in the economic analysis.

[43] State Board Action 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ. Prohibition III. D. page 21. Available at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/wqo2009_0009_dwq.pdf
Debris is defined as "Litter, rubble, discarded refuse, and remains of destroyed inorganic anthropogenic waste."

3. CURRENT TRASH CONTROL EXPENDITURES

Communities in California spend approximately $428 million per year to combat and cleanup trash, which is $10.71 per resident[44]. Communities within the jurisdiction of the Los Angeles Water Board are already complying with trash and debris TMDLs, and they are currently spending[45] $15.04 on average per resident per year to do so. This is 55% higher than the communities not implementing trash or debris TMDLs[46].

Caltrans spends approximately $80 million a year on "litter removal" (i.e., trash control), or approximately $1,600 per lane-mile[47].

Specific information about the current costs that IGP permittees incur to control trash is unknown. CGP permittees are already required to comply with a prohibition of debris discharge from construction sites[48], so though current costs for trash control by CGP permittees are unknown, they are not expected to increase as a result of the f Trash Amendments.

a. Summary of Existing Trash Control Studies

In 2012, Kier Associates published a study[49] for U.S. EPA to quantify the overall costs of managing trash. The study found that, on average, small and medium West Coast communities (in California, Oregon and Washington) spend at least $14 per year per resident in trash management and marine debris reduction efforts. The study concluded that the largest cities did not enjoy much in the way of "economies of scale". The largest cities are spending, conservatively, $13 per year per resident on trash management and marine debris reduction efforts.

In August 2013, NRDC released another study[50] (NRDC Study) assessing the annual cost to California communities of reducing litter that pollutes waterways. The NRDC Study is based on a direct survey of 221 randomly selected communities. The NRDC Study found that California communities spend $428,400,000 each year to combat and clean up litter and to prevent it from ending up in the state's rivers, lakes, canals and oceans. The NRDC Study indicated a large disparity in the annual average compliance cost per capita ranging between $8.94 and $18.33 per resident to manage litter (Table 5). The annual average statewide spending was $10.71 per resident (Figure 1). The highest reported expenditure was the City of Del Mar in San Diego County with an average of $71 per resident.

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[44] Kier Associates. 2013. Waste in Our Water: The Annual Cost to California Communities of Reducing Litter That Pollutes Our Waterways. Prepared for NRDC. Available at: http://docs.nrdc.org/oceans/files/oce_13082701a.pdf, page 19.

[45] Not including costs associated with beach cleanups specific to coastal communities.

[46] Communities not implementing trash or debris TMDL are spending an average of $9.68 per resident per year.

[47] See fn. 32, *ante*.

[48] State Board Action 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ. Prohibition III. D. page 21. Available at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/wqo2009_0009_dwq.pdf . Debris is defined as "Litter, rubble, discarded refuse, and remains of destroyed inorganic anthropogenic waste."

[49] Kier Associates. 2012. The Cost to West Coast Communities of Dealing with Trash, Reducing Marine Debris. Prepared for U.S. EPA, Region 9. Available at: http://www.epa.gov/region9/marine-debris/cost-w-coast-debris.html#report

[50] Kier Associates. 2013. Waste in Our Water: The Annual Cost to California Communities of Reducing Litter That Pollutes Our Waterways. Prepared for NRDC. Available at: http://docs.nrdc.org/oceans/files/oce_13082701a.pdf

The NRDC Study collected information from 95 communities ranging from 700 residents (Etna in Siskiyou County) to more than 4 million residents (the City of Los Angeles) regarding six categories of litter management:

- Waterway and beach cleanup
- Street sweeping
- Installation of storm water capture devices
- Storm drain cleaning and maintenance
- Manual cleanup of litter
- Public education

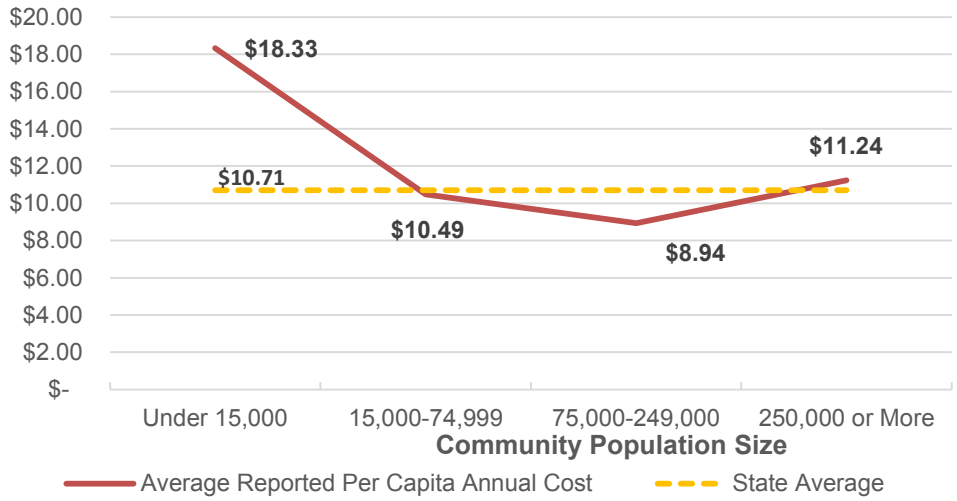
Table 5 and Figure 1 summarize the findings of the NRDC Study.

Table5. Estimated Current Annual Costs of Trash Control

Community Size	Population Range	Range of Annual Reported Cost	Average Reported Annual Costs	Average Reported Per Capita Cost
Largest	250,000 or more	$2,877,400-$36,360,669	$13,929,284	$11.24
Large	75,000-249,000	$350,158-$2,379,746	$1,131,156	$8.94
Midsize	15,000-74,999	$44,100-2,278,877	$457,001	$10.49
Small	Under 15,000	$300-$890,000	$144,469	$18.33

Source: NRDC Study 2013

Figure 1. Trash Annual Control Costs Per Capita by Community Population Size Group



b. Use of Existing Studies in This Economic Analysis

The final Trash Amendments include an exception for waters of the state where existing trash and debris TMDLs adopted by the Los Angeles Water Board or U.S. EPA are in effect prior to the final Trash Amendments. This may result in some limitations in extrapolating statewide costs directly from the studies described above. To address this limitation, we combined the data in the NRDC Study and the Kier Associates' U.S. EPA Study to calculate a baseline of current costs. The costs were stratified based on community type and size. The summary of the average annual cost per capita for communities outside of the Los Angeles Water Board boundaries by type of trash control type are presented in Table 6.

Table 6. Estimated Current Annual Average Cost Per Capita by Type of Trash Control and by Community Size of MS4 Phase I and Phase II (Not Including Communities within the Los Angeles Region)

MS4 Communities by Population Size (Not Including Los Angeles Communities)	Street Sweeping	Storm Drain Cleaning & Maint.	Storm Water Capture Devices	Manual Cleanup	Public Education	Total Annual Cost Per Capita
>500,000	$4.19	$3.28	$1.19	$1.27	$0.65	**$10.41**
100,000-500,000	$3.73	$2.24	$1.18	$0.51	$0.55	**$7.64**
75,000-100,000	$5.65	$1.07	$0.93	$1.89	$0.51	**$9.15**
50,000-75000	$5.33	$3.15	$1.53	$1.57	$0.42	**$10.20**
25,000-50,000	$3.94	$2.75	$1.90	$1.86	$0.37	**$9.73**
10,000-25,000	$3.61	$1.21	$3.26	$2.21	$0.50	**$10.09**
0-10,000	$9.26	$2.31	$1.25	$2.32	$1.69	**$15.34**
All MS4 Communities	**$4.38**	**$2.79**	**$1.29**	**$1.28**	**$0.58**	**$9.68**

Source: NRDC Study 2013

In comparison, the average cost per capita in communities within Los Angeles Water Board boundaries are presented in Table 7.

Table 7. Estimated Current Annual Average Cost Per Capita by Type of Trash Control and by Community Size within the Los Angeles Region

Los Angeles Region MS4 Communities by Population Size	Street Sweeping	Storm Drain Cleaning & Maint.	Storm Water Capture Devices	Manual Cleanup	Public Education	Total Annual Average Cost Per Capita
>500,000	$6.52	$1.23	$2.64	$4.16	$1.21	**$15.76**
100,000-500,000	$5.22	$2.26	$1.57	$0.05	$0.15	**$9.22**
75,000-100,000	$7.62	$0.26	$7.92	$1.19	$0.39	**$16.79**
50,000-75000	$6.57	$0.50	$6.42	$1.81	$0.22	**$14.46**
25,000-50,000	$5.28	$1.52	$0.75	$1.20	$0.46	**$7.79**
10,000-25,000	$10.58	$4.62	$16.00	$4.10	$0.85	**$29.84**
0-10,000						
All Los Angeles MS4 Communities	**$6.72**	**$1.87**	**$6.54**	**$2.25**	**$0.48**	**$15.04**

Source: NRDC Study 2013

On average, the annual expenditures per capita in communities in the Los Angeles Region are 55% greater than the average cost in the rest of California. The data was collected in 2011 and 2012; as such not all communities were in full compliance with the Los Angeles Water Board's existing trash and debris TMDLs.

Table 8 compares the total estimated annual current expenditures (including those in the Los Angeles Region) for trash control with economic factors such as State Domestic Product, per capita income, and other economic indicators. For example, the City of Los Angeles budget for FY 13-14[51] is $7.69 billion. The City of Los Angeles' annual total expenditures related to trash control identified in the NRDC Study are $36,360,669[52] which represents 0.473% of its annual budget. The City of San Diego[53] spends 0.51%[54] of its annual budget on trash control. At the other end of the spectrum, the City of San Anselmo, with a population of 12,336, expends $161,000 in trash controls or approximately 1.3% of its annual budget of $12.4 million[55].

Caltrans annually spends $80 million[56] on litter removal. This is approximately 6.7% of their $1.2 billion maintenance budget for FY 13-14. Caltrans manages over 50,000 lane-miles of roadways; owns and operates 265 state highways; and owns and manages 12,300 bridges and

[51] City of Los Angeles Budget for FY 13-14. Available at: http://cao.lacity.org/budget/summary/2013-14BudgetSummaryBooklet.pdf

[52] Kier Associates. Waste in Our Water. Appendix A, page XVI, Table 13.

[53] City of San Diego. Proposed 2014 Budget. Available at: http://www.sandiego.gov/fm/proposed/pdf/2014/vol1/v1executivesummary.pdf

[54] Calculated from Kier Associates-WASTE IN OUR WATER, Appendix B, page ii, Table 9 and City of San Diego's Proposed 2014 Budget.

[55] City of San Anselmo. 2012 Budget. Available at: http://www.marinij.com/ci_21546177/san-anselmo-council-approves-2012-budget

[56] See fn. 32, *ante*.

665 buildings and other structures. Caltrans spends an average of $1,600 per lane-mile on litter removal.

Table 8. Existing Trash Control Expenditures in Perspective

Statistic	Budget/Value	Annual Expenditures on Trash Control	Conclusion
California 2012 Gross State Domestic Product	$2.0035 trillion	$428[57] million	Californians spend **0.02%** of the State Domestic Product in trash controls.
California 2013 average income per capita	$28,341	$10.71	Californians spend **0.03%** of their average income per capita in trash controls.
California State Budget for FY 2013-14	$145.3 billion	$428 million	The California State budget is 7.25% of the California State Domestic product. The cost of trash controls is approximately **0.3%** of the State Budget.
The City of Los Angeles Budget for FY 13-14	$7.69 billion	$36.3 million	The City of Los Angeles spends **0.47%** of their annual budget on trash control.
City of San Diego Budget for FY 2014	$2.75 billion	$14[58] million	The City of San Diego spends **0.51%** of their annual budget on trash control.
City of San Anselmo Budget (population of 12,336)	$12.4 million	$161,000[59]	The City of San Anselmo spends **1.31%** of their annual budget on trash control.
Caltrans Division of Maintenance	$1.2 billion	$80 million	Caltrans spends **6.7%** of their annual maintenance budget on litter removal (approximately $1,600 per lane-mile).

c. Cost Information from Adopted Trash and Debris TMDLs

In the Los Angeles Region, fifteen TMDLs were adopted for trash and debris by either the Los Angeles Water Board or U.S. EPA. Six of the fifteen trash and debris TMDLs include cost considerations that identify the least expensive method of compliance to be catch basin inserts (CBI), which is a type of full capture system (Table 9). The six trash TMDLs were selected as a representative baseline for the cost of adopted trash TMLDs to provide a cost comparison to the proposed Trash Amendments. The existing trash and debris TMDLs are assumed an installation cost factor for a CBI unit of $800 and annual operations and maintenance cost of $342[60] per unit. Catch basin inserts must be monitored frequently and must be used in conjunction with frequent street sweeping. Based on the six trash TMDLs, the annual costs to

[57] Kier Associates. 2013. Waste in Our Water: The Annual Cost to California Communities of Reducing Litter That Pollutes Our Waterways. Prepared for NRDC. Available at: http://docs.nrdc.org/oceans/files/oce_13082701a.pdf, page 19.

[58] Kier Associates. Waste in Our Water. Appendix A, page XVII, Table 13.

[59] Kier Associates. Waste in Our Water. Appendix A, page XIX, Table 14.

[60] Los Angeles Water Board. 2007. Trash TMDL for Los Angeles River Watershed Final Staff Report dated August 9, 2007. Available at: http://www.waterboards.ca.gov/losangeles/board_decisions/basin_plan_amendments/technical_documents/2007-012/09_0723/L.%20A.%20River%20Trash%20TMDL_Final%20%20Staff%20Report_August%209,%202007.pdf Section VIII. Cost Considerations. Subsection B. Cost of Implementing Trash TMDL. Subdivision 1. Catch Basin Inserts. Paragraph 1. Page 38. The annual operations and maintenance of $342 is estimated based on the information provided in the Trash TMDL and is the result of dividing the $51.3 million required in servicing and capital costs (see Table 9 on page 38 of the Los Angeles River Trash TMDL) by the 150,000 catch basins that would need to be retrofitted with inserts to cover 574 square miles of the watershed. See paragraph 1 on page 38 of Los Angeles River 2007 trash TMDL.

install and operate full capture systems range between $5 per capita to $22.95 per capita, with an average of $14.33 cost per capita (Table 9).

Table 9. Costs Identified in Trash and Debris TMDLs Adopted by the Los Angeles Water Board

TMDL	Adoption Date	Population/ Household	Total Area and Developed, High Intensity Areas (in acres)	Capital Cost	Operations and Maintenance Annual Cost	Total Annualized Cost	Total Annual Cost Per Capita	Annual Cost Per Acre "Developed, High Intensity"
Los Angeles River Watershed 2007-012	Sept. 23, 2008	4,414,748 1,367,890 households	531,612 (42,730)	$120 million	$51.3 million	$63.3 million	$14.33	$1,481
Ventura River Estuary 2007-008	Mar. 6, 2008	15,630 4,867 households	26,176 (58)	$607,200	$303,600	$425,000	$27.19	$7,350
Malibu Creek 2008-007	July 7, 2009	59,461 21,794 households	48,438 (29)	$1,600,000	$785,000	$1,099,800	$18.5	$38,040
Ballona Creek 2004-023	Aug. 11, 2005	1,501,881 597,311 households	81,972 (16,264)	$25 million	$12.5 million	$15 million	$10	$922
Dominguez Channel 2007-006	Mar. 6, 2008	245,000 82,000 households	13,452 (7,680)	$1,805,000	$902,000	$1,082,500	$4.41	$141
Calleguas Creek 2007-007	Mar. 6, 2008	65,000 21,000 households	32,326 (505)	$1,200,000	$596,000	$835,000	$12.88	$1,653

Assumptions used in the TMDLs' cost considerations: Capital costs are fully spent in ten years. Operations and maintenance cost is based on full implementation. After ten years, full capture systems need to be fully replaced (10% a year). Total cost is estimated after implementation. Average of three persons per household. CBIs are considered the lowest cost method of compliance.

As part of the economic analysis, we analyzed the potential compliance costs for MS4 communities within the Los Angeles Water Board's jurisdiction implementing trash TMDLS as if they have to comply with the final Trash Amendments instead of full compliance with their current trash TMDLs.

The most significant difference between the Los Angeles Region trash and debris TMDLs and the final Trash Amendments is the focus on trash control in high trash generating areas. We estimated the compliance cost with Track 1 or the installation of full capture systems in "developed, high intensity" land coverage in Los Angeles Region, and compared the results with the current compliance costs.

The current annualized cost of compliance (Table 10) for the selected trash and debris TMDLs in the Los Angeles Region is calculated to be $81.7 million ($12.97 per capita). The estimated cost for the same communities if complying with only the final Trash Amendments would be $28.4 ($4.5 per capita); therefore those communities would have saved approximately $53 million a year ($8.47 per capita) if they had to comply only with the final Trash Amendments.

Table 10. Compliance Costs for Municipalities Complying with Select[61] Trash TMDLs Compared to Estimated Compliance Costs for the Final Trash Amendments

Trash TMDL	Population	Area "Developed, High Intensity" (acres)	Estimated Total Capital Cost (to comply with Trash Amendments only)	Estimated Cost Per Capita (to comply with Trash Amendments only)	Estimated O&M Annual Cost (to comply with Trash Amendments only)	Estimated Annualized Cost (to comply with Trash Amendments only)	*Current Annualized Costs of Compliance with trash TMDLs*	*Current Cost Per Capita*
Los Angeles River 2007-012	4,414,748	42,730	$34,184,000	$4.08	$14,613,660	$18,032,060	*$63,300,000*	*$14.33*
Ventura River 2007-008	15,630	58	$46,400	$1.57	$19,836	$24,476	*$425,000*	*$27.19*
Malibu Creek 2008-007	59,461	29	$23,200	$0.21	$9,918	$12,238	*$1,099,800*	*$18.50*
Ballona Creek 2004-023	1,501,881	16,264	$13,011,200	$4.57	$5,562,288	$6,863,408	*$15,000,000*	*$10.00*
Dominguez Channel 2007-006	245,000	7,680	$6,144,000	$13.23	$2,626,560	$3,240,960	*$1,082,500*	*$4.41*
Calleguas Creek 2007-007	65,000	505	$404,000	$3.28	$172,710	$213,110	*$835,000*	*$12.88*
TOTAL	**6,301,720**	**67,266**	**$53,812,800**	**$4.50**	**$23,004,972**	**$28,386,252**	***$81,742,300***	***$12.97***

[61] The six presented trash TMDLs in Table are the most representative trash TMDL that cover areas similar to the high trash generating areas of the final Trash Amendments.

4. MS4 Phase I Permittees: Cost Per Capita Method

a. MS4 Phase I Statistics

Data was obtained for MS4 Phase I permittees using the California Integrated Water Quality System (CIWQS). MS4 Phase I permittees were then grouped by population size. Of the 376 MS4 Phase I permittees, the permittees associated with Caltrans and those records that did not have complete information necessary for the analysis, such as population, were removed from the analysis. The remaining 289 MS4 permittees were used in this analysis (Table 11).

Table 11. MS4 Phase I Permittees by Regional Water Board

Number of MS4 Phase I Communities by Population Size	Regional Water Board 1	2	3	4	5	6	7	8	9	Grand Total
>500,000		1		2	1				1	5
100,000-500,000		11	1	16	4			17	4	53
75,000-100,000		5		10	2			6	5	28
50,000-75,000		12		13	4			15	6	50
25,000-75,000		20		24	3		6	8	9	70
10,000-25,000		12		22	3	1	3	9	5	55
0-10,000		8		10	1	2	1	4	2	28
Grand Total		**69**	**1**	**97**[62]	**18**	**3**	**10**	**59**	**32**	**289**

Out of the 289 MS4 Phase I permittees identified for the economic analysis, 192[63] are located outside the Los Angeles Water Board boundaries and would be subject to the final Trash Amendments. Table 12 shows the population living in locations regulated under a Phase I MS4 permit.

[62] The 97 facilities are subject to an existing trash and debris TMDLs and thus removed from this economic analysis.

[63] Of the 193 MS4 Phase I permittees outside the Los Angeles Region, one was a duplicate in the database and removed from the analysis.

Table 12. Population Regulated Under MS4 Phase I Permits

MS4 Phase I Communities by Population Size	Regional Water Board 1	2	3	4	5	6	7	8	9	Grand Total
>500,000		894,943		4,917,745	799,407				1,223,400	7,835,495
100,000-500,000		1,715,218	150,441	2,380,622	1,498,871			3,191,801	911,063	9,848,016
75,000-100,000		407,979		865,587	175,603			523,614	411,052	2,383,835
50,000-75,000		749,499		785,896	234,054			889,346	339,605	2,998,400
25,000-75,000		658,814		904,866	112,580		233,462	323,637	356,748	2,590,107
10,000-25,000		201,038		385,651	62,781	23,609	59,535	157,235	104,895	994,744
0-10,000		40,063		36,533	1,420	8,890	3,816	28,528	5,609	124,859
Grand Total		**4,667,554**	**150,441**	**10,276,900**	**2,884,716**	**32,499**	**296,813**	**5,114,161**	**3,352,372**	**26,775,456**

The number of MS4 Phase I permittees considered in this economic analysis is limited to 289, which represents a total population of 26,775,456 or 72% of the population of California (37,253,959[64]). The 192 MS4 Phase I permittees outside the Los Angeles Region have a total population of 16,498,556 or 45% of California population.

b. Potential Compliance Options

The final Trash Amendments propose a dual alternative Track approach for compliance with the prohibition of discharge of trash.

i. Track 1: Full Capture Systems

To determine the incremental cost of compliance, we needed to establish the baseline cost for the MS4 Phase I permittees in this analysis using available cost data from the NRDC (Table 6). For those permittees without the NRDC Study cost data, the average NRDC Study cost factors were applied for each permittee size group (assuming a similar level of current expenditures). Based on that data, the 192 MS4 Phase I permittees are spending $22,412,501 ($1.36 per capita) per year to install, operate and maintain full capture systems.

Generally, larger communities have a larger proportion of developed, high intensity in proportion to their population. To compensate for this, a Geographic Information Systems (GIS) analysis was used to determine the ratio of high intensity land coverage for each permittee population size group. We estimated separate per capita cost for each community size based on existing land coverage data for permittees outside the Los Angeles Region. The areas of San Francisco and Sacramento serviced by a combined sewer system were excluded. We used the actual

[64] U.S. Census Bureau. 2010.

land coverage area classified as high intensity to estimate, for each community size, the number of acres that would need to install full capture systems. The estimated capital cost for each full capture system were assumed as $800, the annual operations and maintenance is $342, and an average of one full capture system per acre. The cost estimate assumes all costs are incurred in the same year (Year 10).

The increased cost of implementing full capture systems is estimated to be $176 million or $10.67 more on average per capita per year, assuming all full capture systems are installed in a year. This estimate includes the operation and maintenance of the full capture systems (Table 13). This incremental cost per capita varies based on the size of the permittee. For example, some permittees may have an increase of $13.76 per capita per year, while others may only see an increase of $5.61 on average per capita per year.

Table 13. Incremental Cost of Compliance for MS4 Phase I Communities Using Full Capture Systems by Community Size

MS4 Phase I Community Size	MS4 Phase I Communities	Total Population (A)	Current Cost (baseline)	Current Cost Per Capita (baseline B)	Estimated Annual Cost Per Capita (After Full Implementation in Year 10) (C+D)	*Estimated Total Capital Costs Per Capita (C)*	*Estimated Annual O&M Per Capita (in Year 10) (D)*	Total Estimated Incremental Cost Of Compliance (C+D-B) X A
>500,000	3	2,917,750	$2,451,409	$0.84	$14.60	*$10.22*	*$4.38*	$40,077,769
100,000-500,000	37	7,467,394	$10,469,051	$1.40	$12.80	*$8.96*	*$3.84*	$85,245,951
75,000-100,000	18	1,518,248	$1,293,517	$0.85	$10.50	*$7.35*	*$3.15*	$14,646,291
50,000-75,000	37	2,212,504	$3,059,738	$1.38	$11.00	*$7.70*	*$3.30*	$21,335,016
25,000-75,000	46	1,685,241	$3,033,531	$1.80	$8.70	*$6.09*	*$2.61*	$11,629,598
10,000-25,000	33	609,093	$2,028,291	$3.33	$7.70	*$5.39*	*$2.31*	$2,675,719
0-10,000	18	88,326	$78,965	$0.89	$6.50	*$4.55*	*$1.95*	$490,845
Total	192	16,498,556	$22,414,501	$1.36	$12.03	*$8.42*	*$3.61*	$176,101,189

In summary, the 192 MS4 Phase I permittees analyzed are currently spending approximately $22.4 million annually to install and operate full capture systems[65]. To comply with Track 1 of the proposed Trash Amendments, an estimated additional cost of $176 million or an additional $10.67 ($12.03 – $1.36) per capita on the year that full compliance is achieved. The total capital costs are estimated at $8.42 per capita or $139 million. Once the full capture systems are installed (capital costs), the annual operations and maintenance costs are estimated at $3.2 per capita or $52.8 million. Assuming permittees install 10% of the structural controls each year, the incremental capital, operation and maintenance costs in Year 10 (highest cost year) would be $65 million for all affected permittees ($3.95 per capita).

[65] The NRDC data does not break down the costs into capital and operation and maintenance.

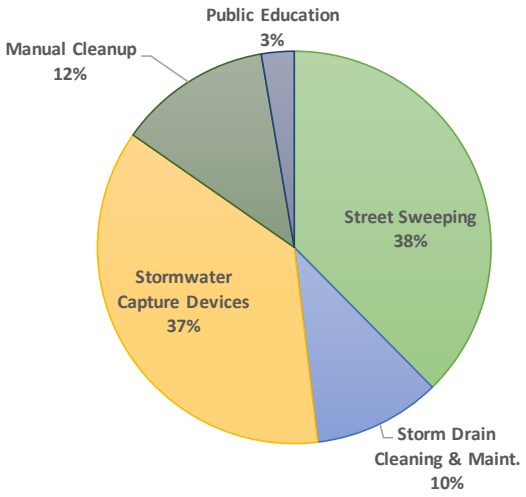
ii. Track 2: Combination of Full Capture Systems, Other Treatment Controls, Institutional Controls, Multi-Benefit Projects

A 2012 study[66] conducted by the California Coastal Commission and the Algalita Marine Research Institute and partially funded by the State Water Board concluded that:

"There is no one method for completely controlling trash in stormwater. Institutional controls may provide the best long-term solution, especially those focused on prevention. However, depending on the magnitude of the problem, institutional controls may be inadequate. Focusing on enforcement of litter laws is considered by many to provide the most "bang for the buck". However, most urban municipalities will have to do more to physically capture and control trash in urban waterways or to prevent it from reaching the waterway."

Previous studies have demonstrated that mixed institutional controls and full capture systems provide a high level of performance/compliance. For example, the City of Los Angeles has implemented a comprehensive trash prevention program involving both structural and institutional measures. The Los Angeles' program has included the installation of full capture and partial capture systems in catch basins, as well as ongoing efforts to implement institutional measures such as public outreach, street sweeping and catch basin cleaning.

Figure 2. Percentage of Expenditures by Trash Control Category in the Los Angeles Region (Source: NRDC Study



The final Trash Amendments specify that Track 2 must be implemented to achieve the equivalent level of performance to the exclusive use of full capture systems (Track 1) in the priority land uses.

On November 6, 2012, a study[67] prepared for the City of Los Angeles by Black & Veatch, assessed the effectiveness of institutional measures for trash TMDL compliance. The study conducted in Los Angeles show that institutional measures can be effective in medium and low trash-generating areas but may not achieve the same level of compliance in high trash-generating areas. The results show a 12.5% trash reduction in 2012 from the 2007 baseline in medium and low trash generating areas.

The question that remains is what ideal mixture of institutional controls, other treatment controls, multi-benefit projects and full capture systems permitted dischargers might choose to comply with the final Trash Amendments at a minimum cost.

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[66] Gordon, Miriam, and Ruth Zamist. "Municipal Best Management Practices for Controlling Trash and Debris in Stormwater and Urban Runoff." n.d. California Coastal Commission; Algalita Marine Research Foundation. 31 Jul 2012 <http://plasticdebris.org/Trash_BMPs_for_Munis.pdf>.

[67] Black & Veatch. 2012. Quantification Study of Institutional Measures for Trash TMDL Compliance.

Based on the data provided in the NRDC Study, permittees in the Los Angeles Region are currently[68] spending approximately 37% of trash control expenditures in implementing full capture systems (Figure 2). This percentage varies significantly depending on the size of the permittee's jurisdiction, population density, and area of priority land uses. Larger sized permittees dedicate 17% of trash control expenditures to full capture systems, and smaller sized permittees dedicate 46% of trash control expenditures to full capture systems (Table 14 and Figure 3).

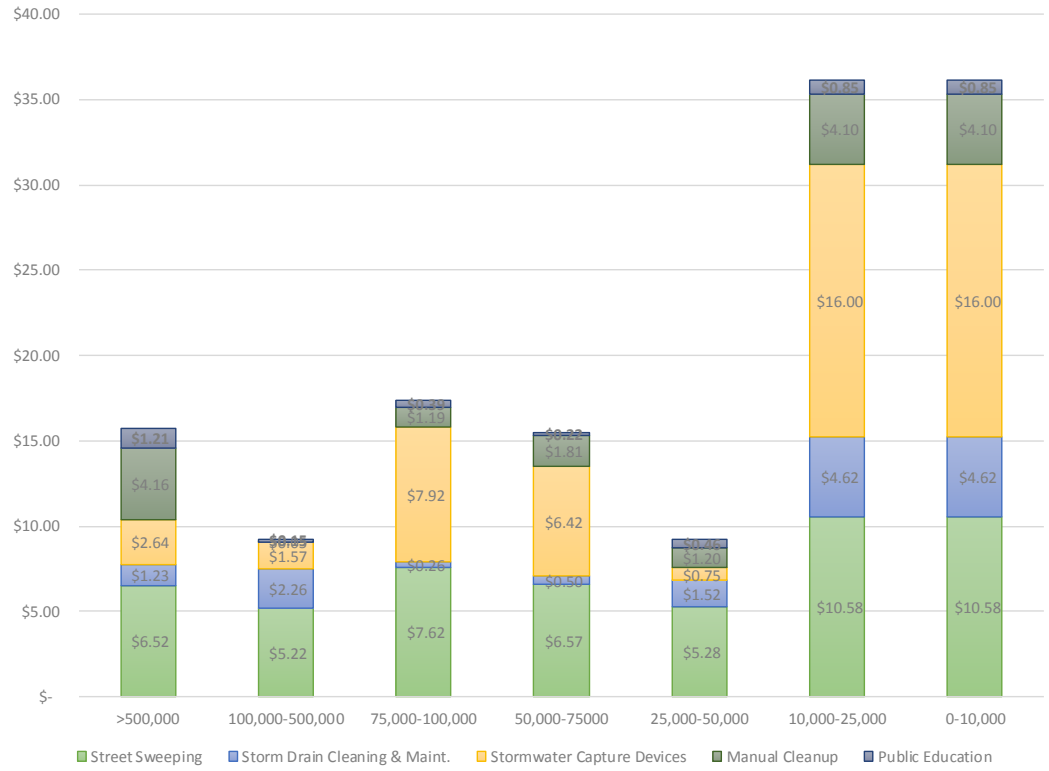
Table 14. Current Expenditures in Trash Control by Category in the Los Angeles Region

Los Angeles Region MS4 By Population Size	Street Sweeping	Storm Drain Cleaning & Maint.	Stormwater Capture Devices	Manual Cleanup	Public Education	Total Annual Average Cost Per Capita
>500,000	$ 6.52	$ 1.23	$ 2.64	$ 4.16	$ 1.21	**$ 15.76**
100,000-500,000	$ 5.22	$ 2.26	$ 1.57	$ 0.05	$ 0.15	**$ 9.22**
75,000-100,000	$ 7.62	$ 0.26	$ 7.92	$ 1.19	$ 0.39	**$ 16.79**
50,000-75000	$ 6.57	$ 0.50	$ 6.42	$ 1.81	$ 0.22	**$ 14.46**
25,000-50,000	$ 5.28	$ 1.52	$ 0.75	$ 1.20	$ 0.46	**$ 7.79**
10,000-25,000	$ 10.58	$ 4.62	$ 16.00	$ 4.10	$ 0.85	**$ 29.84**
0-10,000						
Grand Total	**$ 6.72**	**$ 1.87**	**$ 6.54**	**$ 2.25**	**$ 0.48**	**$ 15.04**

Source: NRDC Study 2013

[68] Current expenditures in Los Angeles Region are not necessarily the total amount of expenditures needed to comply with the final Trash Amendments since the communities in Los Angeles Region were not scheduled to be in full compliance with their TMDLs as of the date that NRDC collected the data. This information is only illustrative to estimate the adequate distribution of full capture and institutional control expenditures.

Figure 3. Current Trash Controls Per Capita by Permittee Size in the Los Angeles Region



Source: NRDC Study 2013

The data shows that permittees in Los Angeles Region are already implementing full capture systems in combination with institutional controls.

In comparison, the data collected for MS4 Phase I permittees outside the Los Angeles Region have a substantially different cost structure of trash control related to the use of institutional controls, regardless of the size of the permittee's jurisdiction.

Permittees outside the Los Angeles Region dedicate 13% of their trash-control resources to full capture systems. This percentage varies significantly depending on size (population density and land use area). For example, larger sized communities dedicate 11% to 14% of trash control resources to full capture systems, and smaller sized communities dedicate a larger percentage (up to 30%) to full capture systems (Figure 4 and Table 15).

Figure 4. Percentage of Expenditures by Trash Control Category Outside the Los Angeles Region (Source: NRDC Study 2013)

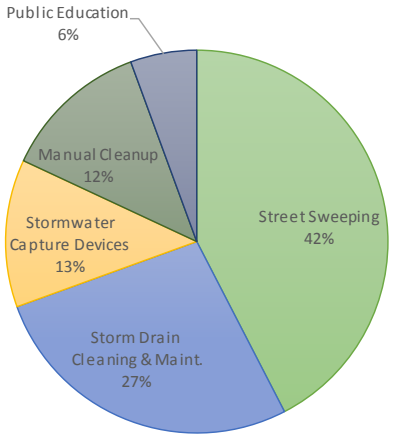


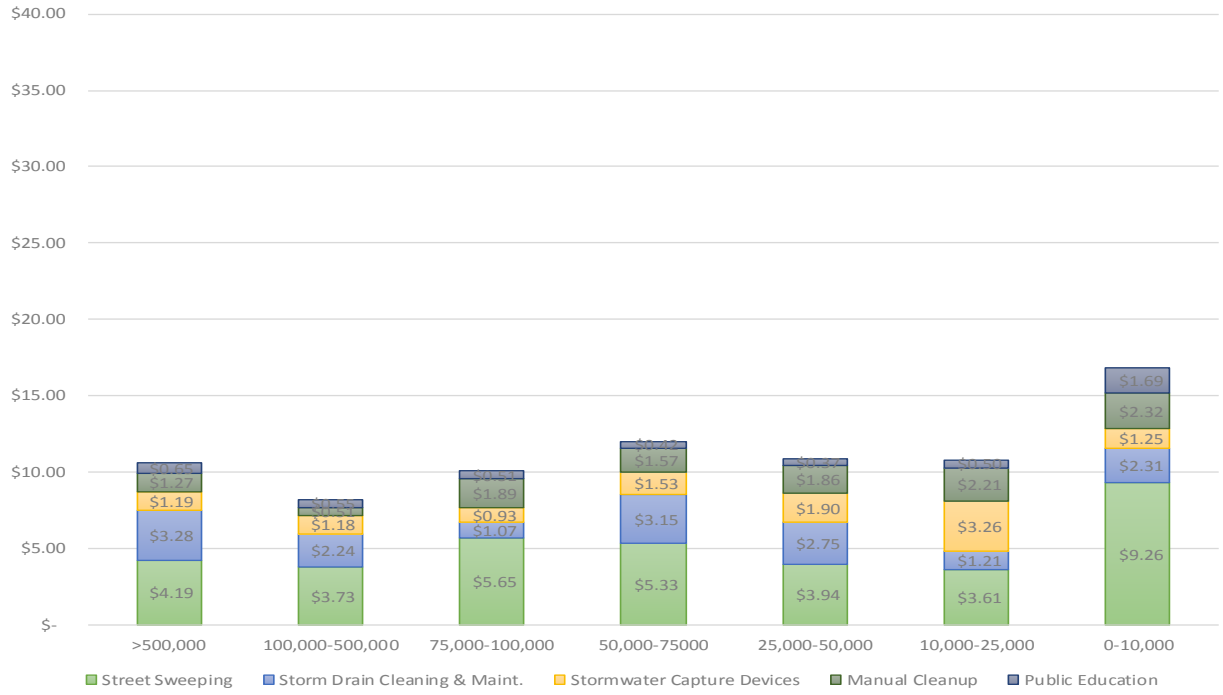
Table 15. Current Annual Per Capita Expenditures in Trash Control by Category Outside the Los Angeles Region

MS4 By Population Size	Street Sweeping	Storm Drain Cleaning & Maint.	Stormwater Capture Devices	Manual Cleanup	Public Education	Total Annual Cost Per Capita
>500,000	$ 4.19	$ 3.28	$ 1.19	$ 1.27	$ 0.65	**$ 10.41**
100,000-500,000	$ 3.73	$ 2.24	$ 1.18	$ 0.51	$ 0.55	**$ 7.64**
75,000-100,000	$ 5.65	$ 1.07	$ 0.93	$ 1.89	$ 0.51	**$ 9.15**
50,000-75000	$ 5.33	$ 3.15	$ 1.53	$ 1.57	$ 0.42	**$ 10.20**
25,000-50,000	$ 3.94	$ 2.75	$ 1.90	$ 1.86	$ 0.37	**$ 9.73**
10,000-25,000	$ 3.61	$ 1.21	$ 3.26	$ 2.21	$ 0.50	**$ 10.09**
0-10,000	$ 9.26	$ 2.31	$ 1.25	$ 2.32	$ 1.69	**$ 15.34**
Grand Total	**$ 4.38**	**$ 2.79**	**$ 1.29**	**$ 1.28**	**$ 0.58**	**$ 9.68**

Source: NRDC Study 2013

This information is represented in Figure 5.

Figure 5. Current Trash Controls Per Capita by MS4 Phase I Permittee Size Outside the Los Angeles Region



Source: NRDC Study 2013

We determined the baseline costs for current use of institutional controls using cost factors obtained using data from the NRDC Study. The cost factors were applied to the population within each population size group. Table 16 summarizes the current estimated expenditures for MS4 Phase I permittees.

Table 16. Estimated Current Total Annual Expenditures in Trash Control by Category in MS4 Phase I Permittees Outside the Los Angeles Region

Baseline Expenditures. MS4 By Population Size	Street Sweeping	Storm Drain Cleaning & Maint.	Stormwater Capture Devices	Manual Cleanup	Public Education	Total Annual Cost
>500,000	$ 12,239,133	$ 9,577,468	$ 3,468,147	$ 3,703,492	$ 1,895,704	**$ 30,369,032**
100,000-500,000	$ 27,841,905	$ 16,706,970	$ 8,801,453	$ 3,775,087	$ 4,132,958	**$ 57,066,650**
75,000-100,000	$ 8,572,112	$ 1,629,968	$ 1,412,616	$ 2,870,335	$ 770,787	**$ 13,890,738**
50,000-75000	$ 11,788,359	$ 6,971,166	$ 3,388,229	$ 3,473,392	$ 928,365	**$ 22,558,015**
25,000-50,000	$ 6,648,246	$ 4,634,900	$ 3,197,960	$ 3,135,473	$ 629,481	**$ 16,405,397**
10,000-25,000	$ 2,198,389	$ 736,123	$ 1,987,132	$ 1,346,130	$ 305,923	**$ 6,143,977**
0-10,000	$ 817,704	$ 203,876	$ 110,750	$ 205,061	$ 148,889	**$ 1,355,031**
Grand Total	**$ 72,188,075**	**$ 46,050,511**	**$ 21,225,758**	**$ 21,193,701**	**$ 9,542,549**	$ 159,741,928

No studies identified the mix of institutional control measures and full capture systems that would be used by any given community to comply with Track 2, as the most effective means of controlling trash are highly dependent on the particular site conditions, types of trash, and the available resources for maintenance and operation.

This economic analysis therefore considers several compliance options using the data from the NRDC Study. We has applied the current mixture of institutional controls and full capture systems from communities implementing trash and debris TMDLs in the Los Angeles Region, and compared this information with the information obtained from MS4 Phase I permittees located outside the Los Angeles Region. We then calculated the difference in the level of expenditures for each community group based on population size. The differences were used to estimate the total incremental cost for MS4 Phase I permittees located outside the Los Angeles Region (Table 17).

The data collected on institutional control expenditures show that the average expenditures by Los Angeles Water Board MS4 Phase I permittees are greater than non-Los Angeles Water Board MS4 Phase I permittees, not just for full capture systems but also for expenditures on several types of institutional controls (Table 17).

Table 17. Institutional Control Expenditures Per Capita in the Los Angeles Region and by Other Phase I MS4 Permittees

Average Trash Controls Cost	Los Angeles Region	Other Communities	Difference
Stormwater Capture Devices	$ 6.54	$ 1.29	**$ 5.25**
Street Sweeping	$ 6.72	$ 4.38	**$ 2.34**
Storm Drain Cleaning & Maint.	$ 1.87	$ 2.79	**$ (0.92)**
Manual Cleanup	$ 2.25	$ 1.28	**$ 0.97**
Public Education	$ 0.48	$ 0.58	**$ (0.10)**
Total Current Annual (True) Average Cost Per Capita	**$ 15.04**	**$ 9.68**	**$ 5.36**

The data in Table 17 suggests that for the more that is spent on full capture systems means that less needs to be spent on institutional controls, such as storm drain cleaning, maintenance and public education.

In some cases, the estimated per capita costs in categories such as full capture systems, manual cleanup and public education, for permittees outside of the Los Angeles Region is already greater than for permittees implementing trash and debris TMDLs. For those cases, the current level of expenditures was applied and no incremental costs would be necessary to comply with the final Trash Amendments.

Table 18 presents the estimated annual incremental cost if all MS4 Phase I permittees select Track 2. The total annual cost is estimated to be approximately $67 million ($4.09 per capita) in the year when full compliance is achieved. Therefore on average, the cost of compliance with Track 2 would be lower than complying with Track 1 (i.e., only using full capture systems).

Table 18. Estimated Incremental Costs of Compliance with Track 2 for MS4 Phase I Permittees Outside the Los Angeles Region

Estimated Increase in Total Trash Controls Cost by Population Community Size Group	>500,000	100,000-500,000	75,000-100,000	50,000-75000	25,000-50,000	10,000-25,000	0-10,000	Total
Stormwater Capture Devices	$4,234,713	$2,922,356	$10,611,908	$10,816,046	$0	$7,758,356	$1,302,809	**$37,646,188**
Street Sweeping	$6,784,597	$11,137,892	$2,996,938	$2,747,793	$2,249,827	$4,245,815	$116,590	**$30,279,451**
Storm Drain Cleaning & Maint.	($5,988,636)	$169,341	($1,235,224)	($5,864,914)	($2,073,334)	$2,077,887	$204,033	**($12,710,847)**
Manual Cleanup	$8,434,348	$0	$0	$531,240	$0	$1,151,151	$157,220	**$10,273,959**
Public Education	$1,634,774	$0	$0	$0	$145,730	$211,806	$0	**$1,992,310**
Total Incremental Cost	**$15,099,795**	**$14,229,588**	**$12,373,622**	**$8,230,165**	**$322,223**	**$15,445,015**	**$1,780,652**	**$67,481,061**

Other Compliance Costs

In addition to compliance tracks, the final Trash Amendments includes monitoring, evaluation and reporting requirements. These would potentially increase the cost of compliance with the final Trash Amendments. This economic analysis does not include an estimate of those potential costs. These costs are expected to be negligible relative to capital and operation and maintenance costs.

c. Compliance Schedules

The final Trash Amendments propose a time schedule for permittees to comply ten years from the effective date of the first implementing permit.[69] One potential compliance schedule is 10% completion of controls per year. We have estimated the average annual cost to comply with Track 1 and Track 2 once the permittees have achieved full implementation. Capital costs were distributed evenly in order to achieve full compliance within ten years (10% each year).

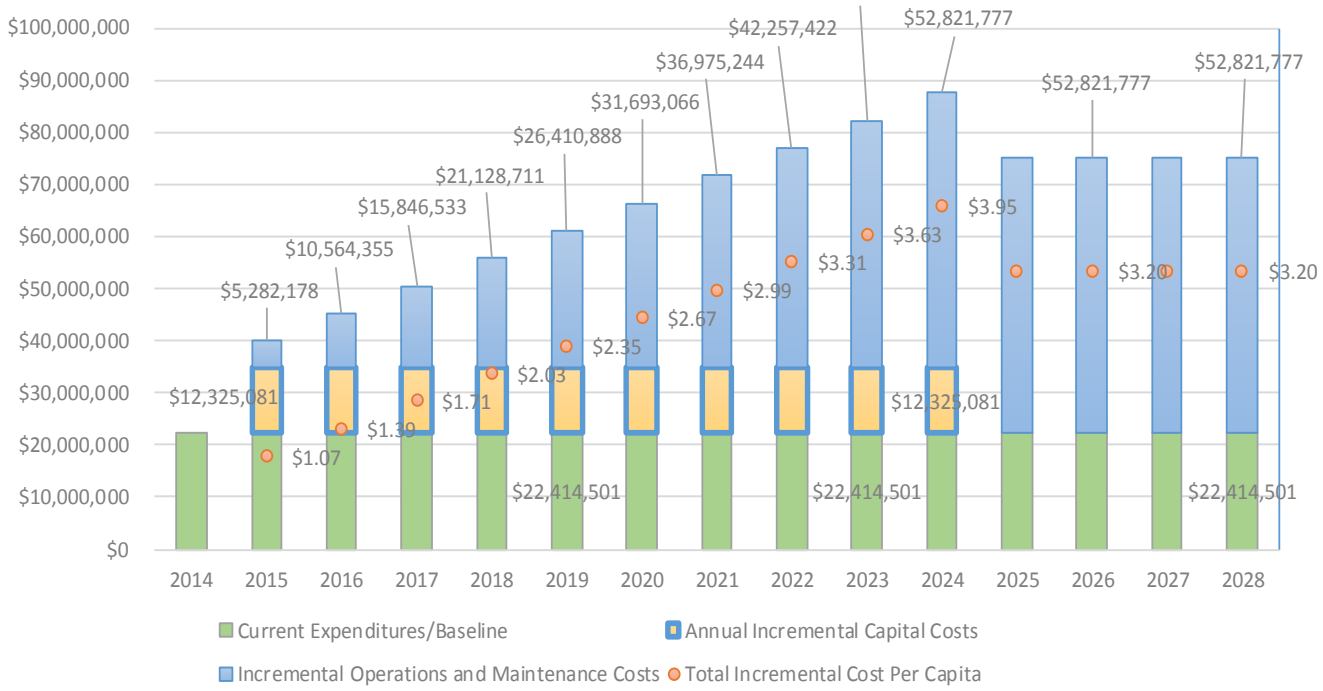
To estimate the annual incremental cost of compliance, the following cost factors and assumptions are used:

- Compliance starts in January 2015.
- The installation of a full capture system is $800 per unit.

[69] See fn. 42, *ante*.

- The annual cost of operations and maintenance for a full capture system is $342 per unit install.
- The total cost to install, operate and maintain a full capture system in Year 1 is $1,142.
- Full capture systems were installed in 10% increments over ten years.
- Maintenance cost for each year includes the cost of operating and maintaining each full capture system. For example, the operations and maintenance cost in Year 2 is the sum of the 10% full capture systems installed in Year 1 plus the 10% installed in Year 2.

Figure 6. Compliance Schedule with Track 1 for MS4 Phase I Permittees Estimated Total Costs 2014-2024



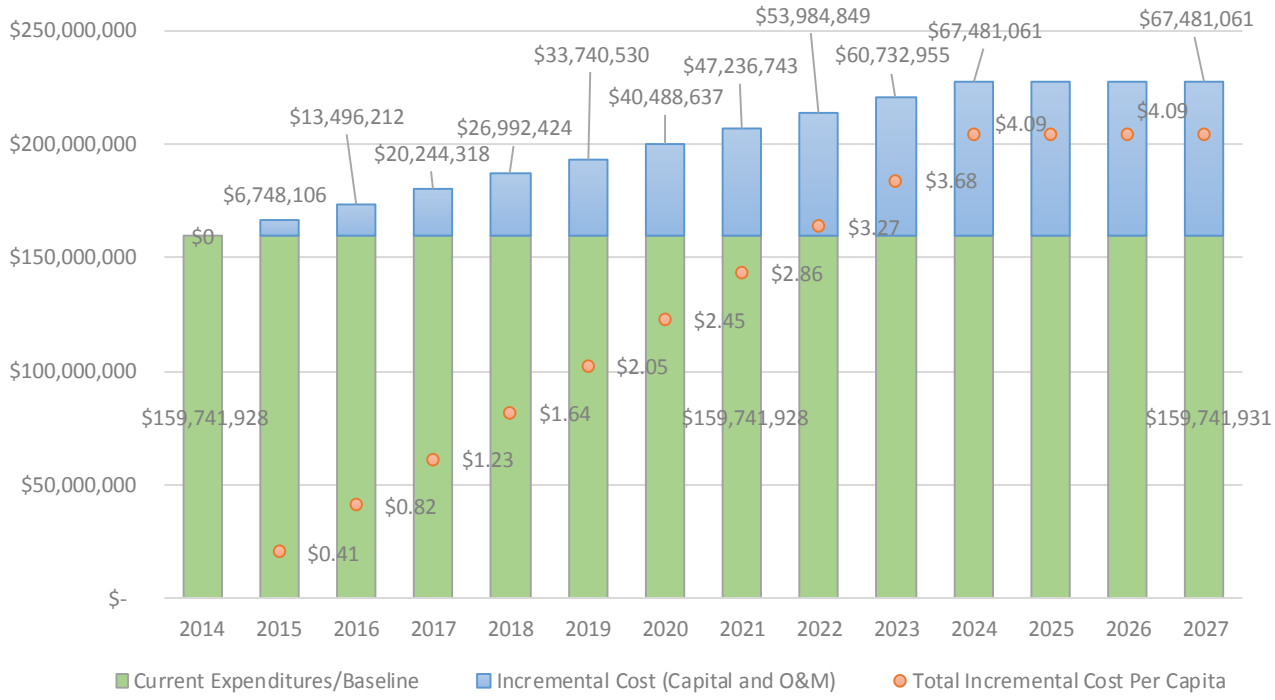
Assuming communities install 10% of the structural controls each year, the capital, operation and maintenance costs in Year 10 (highest cost year) would be $65 million for all Phase 1 affected permittees ($3.95 per capita). The total cost of installing (capital costs) full capture systems in MS4 Phase I permittees is estimated at $8.42 per capita or approximately $123 million. Spread out over ten years equally is approximately $12.3 million per year. Operations and maintenance of the installed full capture systems increases based on the accumulated installed units (capital costs). As a result, operations and maintenance cost per capita fluctuates from $0.32 in Year 1 to $3.2 in Year 10.

Compliance Schedule with Track 2

The incremental cost in the year of full compliance with the final Trash Amendments is approximately $67.5 million or $4 per capita[70] (Figure 7).

[70] After Year 10 the incremental cost is assumed to remain constant at $67.48 million per year.

Figure 7. Compliance Schedule with Track 2 for MS4 Phase I Permittees



d. Limitations and Uncertainties

Current cost of trash controls implemented through MS4 permits in California ranged from $3 per person a year for municipalities with a population of 500,000 or more to up to $60 per year for small municipalities. The selection of the method of compliance with the final Trash Amendments will highly depend on the site specific conditions of every permittee, such as:

- Compliance alternatives
- Costs of controls
- Types of trash
- Site characteristics
- Compliance schedules
- Current compliance rates (for establishing the baseline)
- Other economic factors, technology, inflation, risks, regulatory framework

5. MS4 PHASE II PERMITTEES: COST PER CAPITA METHOD

a. MS4 Phase II Statistics

Data for MS4 Phase II permittees was obtained using CIWQS and grouped by population size. Of the 156 MS4 Phase II listed permittees, eight were removed due to incomplete information necessary for the analysis[71]. 148 MS4 Phase II permittees were identified for the analysis (Table 19).

Table 19. MS4 Phase II Permittees by Regional Water Board

Number of MS4 Phase II	Regional Board												
Population Size	1	2	3	4	5F	5R	5S	6A	6B	7	8	9	Grand Total
>500,000													
100,000-500,000			1				1						2
75,000-100,000			2		2	1	2						7
50,000-75,000		4	4		1	1	6		3				19
25,000-50,000	2	4	11		5		9			3			34
10,000-25,000	6	2	12		5	1	14	1		2			43
0-10,000	4	15	8		3		11	1	1				43
Grand Total	**12**	**25**	**38**		**16**	**3**	**43**	**2**	**4**	**5**			**148**

There are no permittees listed in CIWQS under Phase II in the jurisdiction of the Los Angeles Water Board, Santa Ana Water Board, and San Diego Water Board[72]. Table 20 shows the population living in municipalities regulated under the MS4 Phase II permit.

[71] Additionally, the City of Avalon and other non-traditional Phase II permittees in the Los Angeles Region are new enrollees to MS4 Phase II permit and lack data on CIWQS. Thus, the new enrollees were not included in the analysis.

[72] There are ten MS4 Phase II permittees in Los Angeles Region, eleven MS4 Phase II permittees in the Santa Ana Region and nine MS4 Phase II permittees in the San Diego Region that are tracked in the Storm Water Multiple Application and Report Tracking System (SMARTS) database but were not included in the CIWQS database at the time of the economic analysis.

Table 20. Population for Municipalities Regulated Under MS4 Phase II Permits

Number of MS4 Phase I Municipalities by Population Size	Regional Water Board 1	2	3	4	5	6	7	8	9	Grand Total
>500,000										
100,000-500,000			144,000		112,581					256,581
75,000-100,000			190,053		410,070					600,123
50,000-75,000		254,276	219,526		492,190	194,000				1,159,992
25,000-75,000	66,832	145,456	361,578		558,983		126,005			1,258,854
10,000-25,000	96,229	22,785	201,976		304,542	13,000	35,334			673,866
0-10,000	31,371	100,176	49,676		95,346	11,600				288,169
Grand Total	**194,432**	**522,693**	**1,166,809**		**1,973,712**	**218,600**	**161,339**			**4,237,585**

In summary, 148 municipalities regulated under Phase II of the MS4 program with a total population of 4,237,585, representing 11.5% of California population (2010 Census) are considered in this analysis.

Using the information provided in the referenced studies, a baseline of current costs was created based on municipality type and size. The NRDC Study was relied upon for the data obtained from a direct survey of 221 California municipalities. The summary of the current average annual cost per capita by category of trash control is presented in Table 6. This methodology as previously described for MS4 Phase I permittees was replicated for the MS4 Phase II permittees.

b. Potential Compliance Options

1. Track 1: Full Capture Systems

An analysis of the increased annual average cost for the 148 MS4 Phase II permittees shows that the total potential incremental cost for all Phase II MS4s is $33 million (Table 21).

Table 21. Incremental Cost of Compliance for MS4 Phase II Communities Using Full Capture Systems by Municipality Size

MS4 Phase II Municipality Size	MS4 Phase II	Total Population (A)	Current Cost (baseline)	Current Cost Per Capita (baseline B)	Estimated Annual Cost Per Capita (After Full Implementation in Year 10) (C+D)	*Estimated Total Capital Costs Per Capita (C)*	*Estimated Annual O&M Per Capita (in Year 10) (D)*	Total Estimated Incremental Cost Of Compliance (C+D-B) X A
>500,000								
100,000-500,000	2	256,581	$321,137	$1.25	$12.82	*$8.96*	*$3.84*	$2,967,648
75,000-100,000	7	600,123	$533,630	$0.89	$10.50	*$7.35*	*$3.15*	$5,766,952
50,000-75,000	19	1,159,992	$1,462,858	$1.26	$11.03	*$7.70*	*$3.30*	$11,327,048
25,000-75,000	34	1,258,854	$2,084,477	$1.66	$8.70	*$6.09*	*$2.61*	$8,868,698
10,000-25,000	43	673,866	$2,156,399	$3.20	$7.72	*$5.39*	*$2.31*	$3,047,851
0-10,000	43	288,169	$300,253	$1.04	$6.45	*$4.55*	*$1.95*	$1,558,787
Total	**148**	**4,237,585**	**$6,858,754**	**$1.62**	**$9.53**	***$6.67***	***$2.86***	**$33,536,983**

In summary, the 148 MS4 Phase II communities analyzed are currently spending $6.8 million per year to install and operate full capture systems. To comply with Track 1 in one year is estimated to be an additional cost of $33.5 million or an additional $7.91 (difference between $9.53 and $1.62) per capita in the year that full compliance is achieved. The incremental total capital costs are estimated at $5.54[73] per capita or $23.4 million. Once full capture systems are installed (capital costs), the annual operation and maintenance costs are estimated at $2.37[74] per capita or $10 million. Assuming permittees install 10% of the structural controls each year, the capital, operation and maintenance costs in Year 10 (highest cost year) would be $12 million ($2.93 per capita) (Figure 9).

2. Track 2: Combination of Full Capture Systems, Other Treatment Controls, Institutional Controls, Multi-Benefit Projects

Track 2 of the final Trash Amendments focuses on permittees installing, operating, and maintaining any combination of full capture systems, other treatment controls, institutional controls, and/or multi-benefit projects. The combinations of trash controls must achieve the same performance results as Track 1.

MS4 Phase II permittees are already spending resources in full capture systems and institutional controls. Table 22 shows the average annual cost per capita for each type of trash control.

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[73] Costs are estimated based on a full capture system at $800 per unit (capital costs) and $342 annual cost of operations and maintenance per unit. Therefore, capital costs are estimated to be 70% of the costs if all full capture systems are installed in one year and operations and maintenance cost are estimated to be 30% of the total costs. The capital costs incremental cost is calculated by multiplying $7.91 (the difference between $9.53 and $1.62) by 70% (i.e., $7.91 X 0.7 = $5.54).

[74] The operations and maintenance incremental cost is calculated by multiplying $7.91 (the difference between $9.53 and $1.62) by 30% (i.e., $7.91 X 0.3 = $2.37).

Table 22. Current Average Annual Expenditures Per Capita by Trash Control Category by Population Size Group (MS4 Phase II Permittees)

MS4 PHASE II By Population Size	Street Sweeping	Storm Drain Cleaning & Maint.	Stormwater Capture Devices	Manual Cleanup	Public Education	Total Annual Cost Per Capita
>500,000						
100,000-500,000	$ 4.08	$ 2.12	$ 1.25	$ 0.56	$ 0.58	**$ 8.59**
75,000-100,000	$ 6.98	$ 1.34	$ 0.86	$ 2.13	$ 0.52	**$ 11.84**
50,000-75000	$ 5.85	$ 3.31	$ 1.25	$ 1.41	$ 0.40	**$ 12.24**
25,000-50,000	$ 3.92	$ 3.06	$ 1.62	$ 1.96	$ 0.40	**$ 10.95**
10,000-25,000	$ 3.99	$ 1.23	$ 3.13	$ 2.07	$ 0.48	**$ 10.90**
0-10,000	$ 4.68	$ 2.64	$ 1.03	$ 2.48	$ 1.57	**$ 12.41**
Grand Total	**$ 4.96**	**$ 2.50**	**$ 1.59**	**$ 1.81**	**$ 0.52**	$ 11.38

Source: NRDC Study 2013

The actual cost of trash controls by category is presented in Table 23 and Figure 8. The total estimated population regulated under a MS4 Phase II permit is 4,310,345.

Table 23. Current Expenditures in Annual Trash Control Category by Population Size Group (MS4 Phase II Permittees)

MS4 PHASE II By Population Size	Street Sweeping	Storm Drain Cleaning & Maint.	Stormwater Capture Devices	Manual Cleanup	Public Education	Total Annual Cost	Population
>500,000							
100,000-500,000	$ 1,045,952	$ 545,074	$ 321,137	$ 143,258	$ 148,913	$ 2,204,334	**256,581**
75,000-100,000	$ 4,329,764	$ 833,308	$ 533,630	$ 1,323,013	$ 321,491	$ 7,341,206	**620,156**
50,000-75000	$ 6,835,786	$ 3,870,160	$ 1,462,858	$ 1,650,517	$ 468,274	$ 14,287,595	**1,167,639**
25,000-50,000	$ 5,043,383	$ 3,930,905	$ 2,084,477	$ 2,515,101	$ 508,387	$ 14,082,253	**1,286,248**
10,000-25,000	$ 2,750,042	$ 846,592	$ 2,156,399	$ 1,427,361	$ 329,857	$ 7,510,251	**689,112**
0-10,000	$ 1,359,397	$ 768,567	$ 300,253	$ 722,072	$ 457,452	$ 3,607,742	**290,609**
Grand Total	**$ 21,364,325**	**$ 10,794,607**	**$ 6,858,754**	**$ 7,781,321**	**$ 2,234,375**	**$ 49,033,382**	4,310,345

Source: NRDC Study 2013

Figure 8. Current Annual Trash Control Per Capita for MS4 Phase II Communities

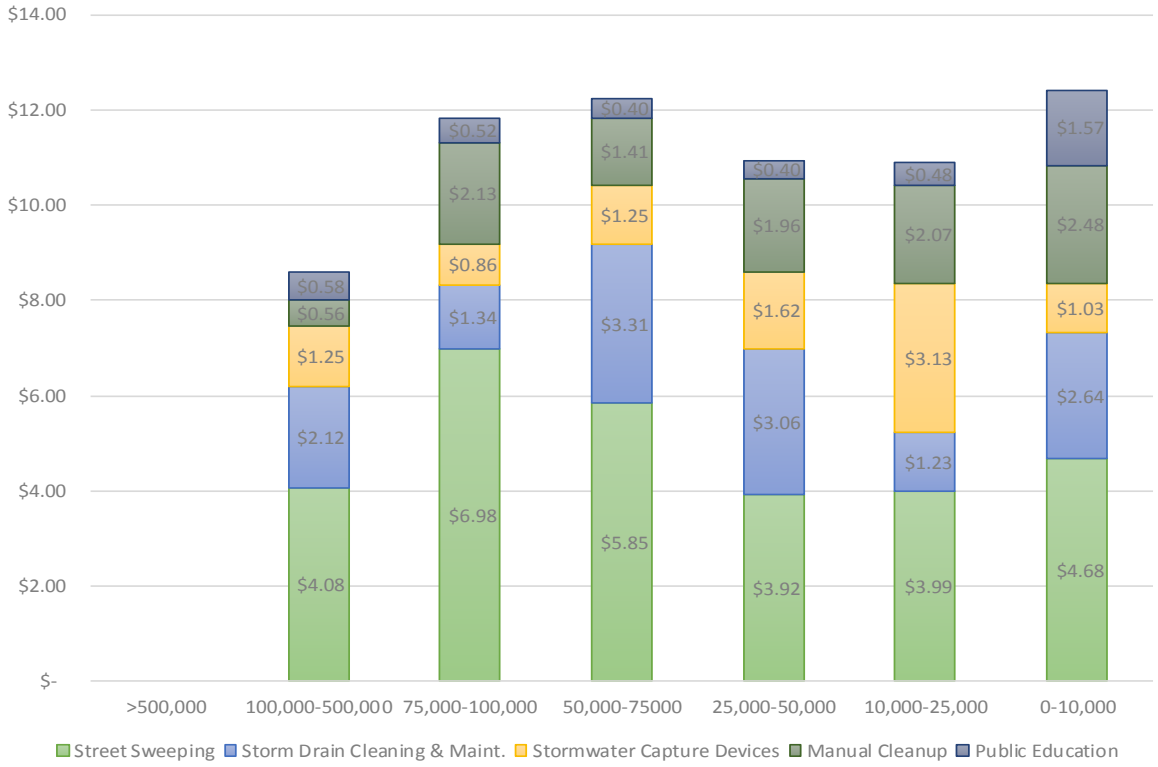


Table 24 highlights the main differences of annual trash control expenditures per capita between the permittees inside and outside the Los Angeles Region.

Table 24. Average Annual Trash Control Expenditures Per Capita in the Los Angeles Region and MS4 Phase II Communities

Average Trash Controls Cost	Los Angeles Region	Phase II Communities	Difference
Stormwater Capture Devices	$ 6.54	$ 1.59	**$ 4.95**
Street Sweeping	$ 6.72	$ 4.96	**$ 1.76**
Storm Drain Cleaning & Maint.	$ 1.87	$ 2.50	**$ (0.63)**
Manual Cleanup	$ 2.25	$ 1.81	**$ 0.44**
Public Education	$ 0.48	$ 0.52	**$ (0.04)**
Total Current Annual (True) Average Cost Per Capita	**$ 15.04**	**$ 11.38**	**$ 3.66**

Table 25 summarizes the estimated annual incremental cost of trash controls choosing a combination of institutional controls and full capture systems. MS4 Phase II permittees would

spend an additional $32 million a year once full implementation is achieved[75], an additional $7.77[76] per capita per year if compliance is completed in one year.

Table 25. Estimated Annual Incremental Costs of Compliance with Track 2 for MS4 Phase II Permittees Outside the Los Angeles Water Region

Estimated Increase in Total Trash Controls Cost by Population Community Size Group	>500,000	100,000-500,000	75,000-100,000	50,000-75000	25,000-50,000	10,000-25,000	0-10,000	Total
Stormwater Capture Devices		$ 81,695	$4,378,006	$6,033,384	$0	$8,869,393	$4,349,491	**$23,711,968**
Street Sweeping		$293,400	$395,824	$835,602	$1,748,006	$4,540,763	$1,715,246	**$9,528,842**
Storm Drain Cleaning & Maint.		$34,799	($672,068)	($3,286,340)	($1,975,808)	$2,337,105	$574,046	**($2,988,266)**
Manual Cleanup		$0	$0	$462,910	$0	$1,397,998	$469,425	**$2,330,333**
Public Education		$0	$0	$0	$83,287	$255,888	$0	**$339,175**
Total Incremental Cost		**$409,895**	**$4,101,762**	**$4,045,556**	**($144,515)**	**$17,401,148**	**$7,108,208**	**$32,922,053**

c. Compliance Schedules

Compliance schedules for MS4 Phase II permittees is ten years of the effective date of the first implementing permit[77]. The analysis uses the same methodology as previously described for MS4 Phase I permittees.

Compliance Schedule with Track 1

Total incremental cost in the year of full compliance with the final Trash Amendments is estimated to be $12.3 million or $2.93 per capita. After Year 10, the incremental cost of operating and maintaining the full capture systems the cost may be $10 million per year[78] ($2.37 per capita) (Figure 9).

[75] This estimated annual incremental cost is assuming that all necessary expenditures are conducted in one single year and the operations and maintenance associated with those specific expenditures. See compliance schedule for an analysis of incremental cost of compliance over a 10 year period.

[76] $7.77 is the result of dividing the total annual cost presented in Table ($32,922,053) by the population of the 148 communities selected (4,237,585) (i.e., $32,922,053 / 4,237,585 = $7.77).

[77] See fn. 42, *ante*.

[78] Operations and maintenance costs are estimated at $342 per year for every full capture system installed. Therefore for every $800 of full capture system installed, $342 (or 42.75% of capital costs) would be spent annually in operations and maintenance. After 10 years of installation of full capture systems, MS4 Phase II communities would have spent $23,463,510 on full capture systems. To maintain and operate $23,463,510 full capture systems, the permittees would need to spend $10 million annually (i.e., $23,463,510 X 0.4275 = $10,030,650).

Figure 9. Compliance Schedule with Track I for MS4 Phase II Permittees with Estimated Total Costs



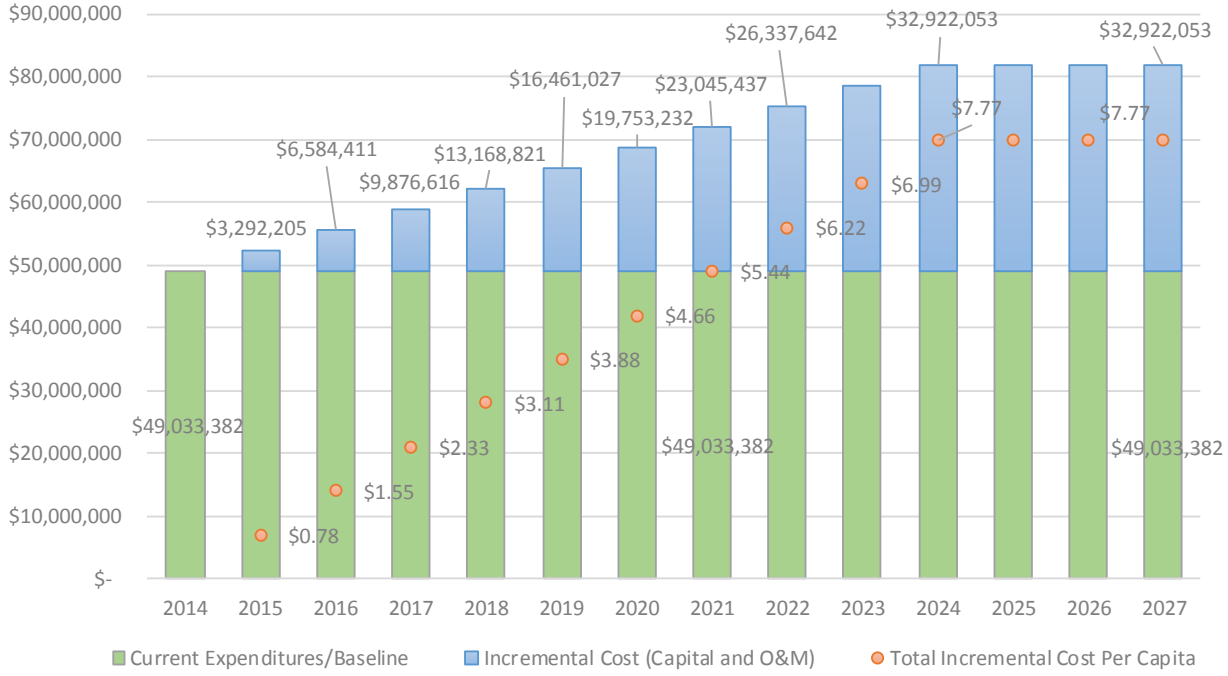
Assuming installation of 10% of the structural controls each year, the capital, operation and maintenance incremental costs in Year 10 (highest cost year) would be $12.3 million for affected MS4 Phase II permittees ($2.93 per capita). The total cost of installing (capital costs) full capture systems in MS4 Phase II permittees is estimated at $5.54 per capita or approximately $23.4 million. This total amount spread out in ten years equally is approximately $2.3 million per year. Operations and maintenance of the installed full capture systems increases based on the accumulated installed units (capital costs). As a result, operations and maintenance cost per capita fluctuates from $0.24 in Year 1 to $2.37 in Year 10.

Compliance Schedule with Track 2

The incremental cost in the year of full compliance with the final Trash Amendments is $32.9 million or $7.77[79] per capita (Figure 10).

[79] $7.77 is the result of dividing the total annual cost presented in Table ($32,922,053) by the population of the 148 communities selected (4,237,585) (i.e., $32,922,053 / 4,237,585 = $7.77).

Figure 10. Compliance Schedule with Track 2 for MS4 Phase II Permittees



6. MS4 Phase I and Phase II Permittees: Land Coverage Method

a. Costs Based on Land Coverage

Trash generation rates vary by land use. Sections 4 and 5 were used methodology to estimate compliance costs for Track 1 and Track 2. This section uses a second method of cost analysis to estimate the compliance cost of a full capture system based on land coverage. The number of storm drains within a linear road mile is based on land coverage. Since counties do not have a uniform classification of land cover codes or divisions, the data was collated from USGS Multi-Resolution Land Characteristics Consortium Land Cover Data 2006. The data can be accessed at: http://www.mrlc.gov/nlcd2006.php. The categories identified were the following:

- Land Use (LU) 22 or "Developed, Low Intensity". This is defined as developed low intensity includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 20-49 percent of total cover. These areas most commonly include single-family housing units.
- Land Use (LU) 23 or "Developed, Medium Intensity". This is defined as developed medium intensity includes areas with a mixture of constructed materials and vegetation. Impervious surfaces account for 50-79 percent of the total cover. These areas most commonly include single-family housing units.
- Land Use (LU) 24 or "Developed, High Intensity". This is defined as developed high intensity includes highly developed areas where people reside or work in high numbers. Examples include apartment complexes, row houses and commercial/industrial. Impervious surfaces account for 80-100 percent total cover.

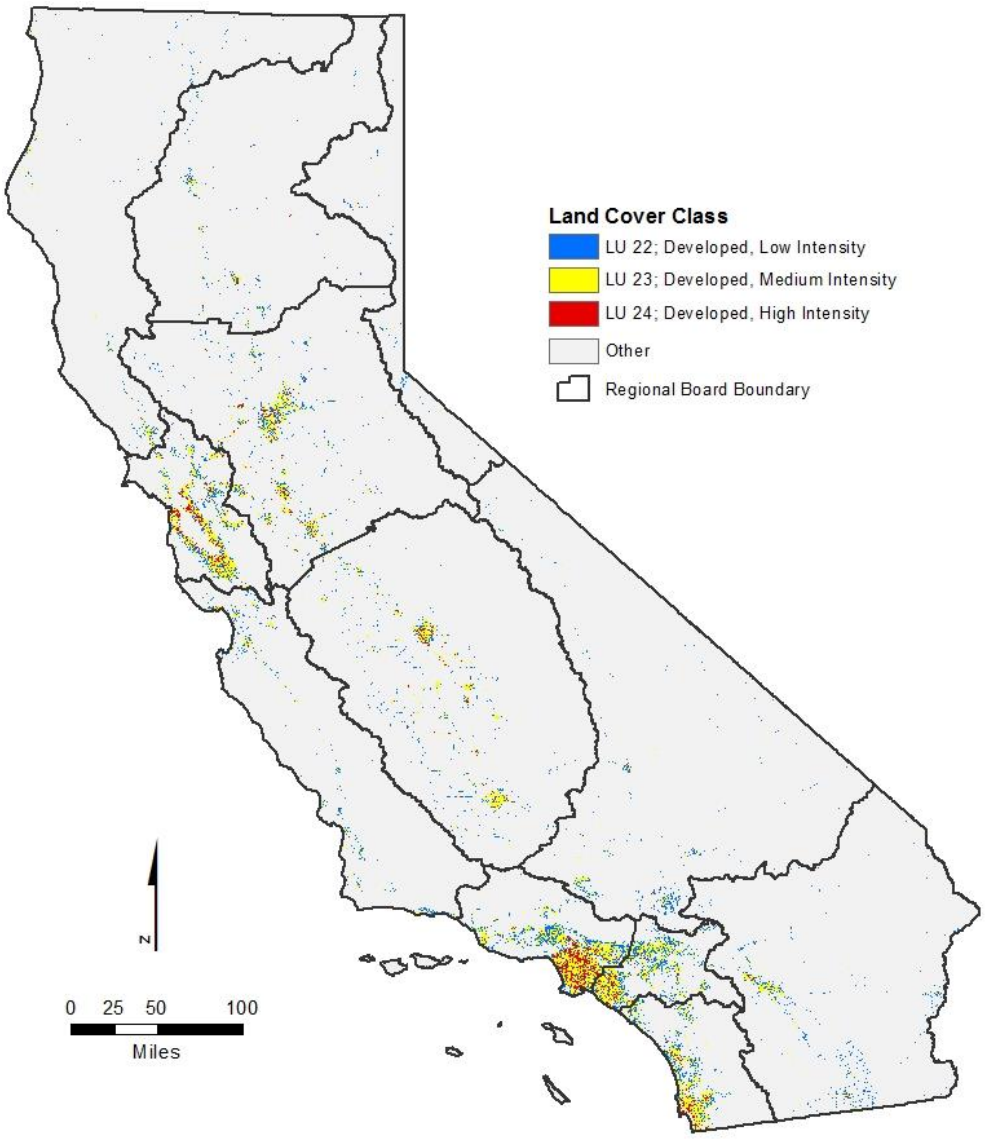
Land coverage was utilized to as a proxy to preliminarily identify priority land uses subject to the final Trash Amendments. The analysis assumes that priority land uses, as defined in the final Trash Amendments, correlate with land cover information for LU 24. Table 26 shows the land cover in acres by regional water board, and Figure 11 shows a map of developed areas by regional water board.

Table 26. Land Coverage by Regional Water Board.

Regional Water Board	Developed, High Intensity (acres) LU24	Developed, Medium Intensity (acres) LU23	Developed, Low Intensity (acres) LU22	Total (acres)
1	3,363.72	28,436.50	53,925.15	85,725.37
2	79,241.00	283,766.94	189,907.27	552,915.21
3	7,365.93	65,757.88	96,791.50	169,915.32
4	116,476.55	369,140.92	234,763.83	720,381.30
5	88,199.95	394,570.64	422,365.75	905,136.34
6	5,519.61	38,368.20	124,361.10	168,248.92
7	6,822.85	56,434.21	119,589.18	182,846.23
8	42,020.59	256,479.11	216,122.48	514,622.18
9	41,759.49	196,458.79	153,307.11	391,525.39
Total (acres)	390,769.69	1,689,413.19	1,611,133.37	3,691,316.26

Source: USGS Multi-Resolution Land Characteristics Consortium Land Cover Data 2006

Figure 11. Developed Land Cover Classes by Regional Water Board.



Compliance with Track 1 for MS4 permittees requires installing, operating and maintaining full capture systems for all storm drains that capture runoff from one or more of the priority land uses in their jurisdictions. Costs Considerations conducted for developing the TMDLs in the Los Angeles Region estimated that, in high intensity developed areas, an average of approximately one catch basin per acre is needed. Therefore, one full capture system per acre was used for the compliance cost estimates.

There are 390,769 acres classified as "Developed, High Intensity" in California. Los Angeles Water Board MS4 permittees are already implementing trash and debris TMDLs (116,476 acres) were subtracted from the total. The areas in City of San Francisco (10,830 acres of high density), and Sacramento (1,160 acres) served by combined sewer systems were subtracted from the total. Trash generated on areas served by combined sewer systems would be captured and removed at the regional wastewater treatment plant instead of being discharged through a conventional storm drain system. Therefore, the total high intensity land potential subject to the final Trash Amendments is 262,302.3 acres. The population within this high intensity land cover is 20.7 million.

The average cost of installing a catch basin insert was estimated to be $800 and the annual operation and maintenance was $324. We estimated one catch basin per acre and one full capture system is needed per catch basin. Similar to the compliance schedule discussion in Sections 5 and 6, full capture systems were assumed to be installed at a rate of about 10% per year, with full build out in Year 10.

As described in previous sections, MS4 Phase I and Phase II permittees are spending $29 million a year or $1.41 per resident per year in operating and maintaining full capture systems[80]. Table 27 and Figure 12 shows the estimated total cost of compliance per year assuming a compliance period of ten years and that 10% of full capture systems are installed each year.

During the first ten years of the implementation of the final Trash Amendments, permittees may incur an incremental average cost of $41 million a year ($2 per capita) to install, operate and maintain full capture systems in high density areas. The total incremental annual cost of operating and maintain all full capture systems installed after Year 10 is $60 million or an average cost per resident per year of $2.91. Table 27 shows the total estimated costs, the incremental cost and the cost per capita for each year starting in 2015 and ending in 2026.

b. Limitations and Uncertainties

The estimates based on land coverage are based on the following assumptions:

1. Land Coverage is a surrogate for land use designation. Priority land uses are correlated to land coverage.

   Using land coverage to estimate the total cost of compliance focuses on the actual priority land uses that would be impacted. This may reduce the error that the estimates using per capita would have on large communities with large populations and low developed density. At the same time, it may overestimate the costs by including all high intensity land uses that are not part of an MS4. The final Trash Amendments define priority land uses based on the different types of uses. By using land coverage instead of land use the analysis may be underestimating the area subject to compliance with the final Trash Amendments.

2. The average cost of a full capture system is $800 and the annual operations and maintenance is $342.
   A broad range of compliance options are available to the permittees subject to the final Trash Amendments. The selection of the full capture system depends on many site specific factors and conditions. Capital cost per unit ranges from $300 per catch basin inserts for installation (capital costs) and $330 annual maintenance to $80,000 per vortex separator system for installation (capital costs) and $30,000 annual maintenance. Different methods may cover different areas, for example a drop inlet may only cover one acre, whereas a vortex separator system may cover many acres, therefore a normalized cost per acre was estimated at $800 in capital cost and $342 in annual operations and maintenance.

3. The analysis is highly sensitive to this assumption and more site specific estimates would be necessary to develop a more accurate estimate.

   The number of full capture systems per acre in priority land uses is one full capture system per acre. There is no one size fits all assumption for storm drain inlet placing. High intensity blocks vary greatly in size depending on what city they are in and the local conditions (rainfall, slope, density, impervious surfaces, etc.). Rough estimates range from one catch

[80] See Table 13 and Table for a description of the baseline of current costs. ($22.4 million for MS4 Phase I permittees and $6.8 for MS4 Phase II permittees)

basin in a three-acre urban area in the City of Los Angeles[81] (0.33 per acre) and up. For this analysis, one catch basin per acre was assumed. The analysis is highly sensitive to this assumption and more site specific estimates would be necessary to develop a more accurate estimate.

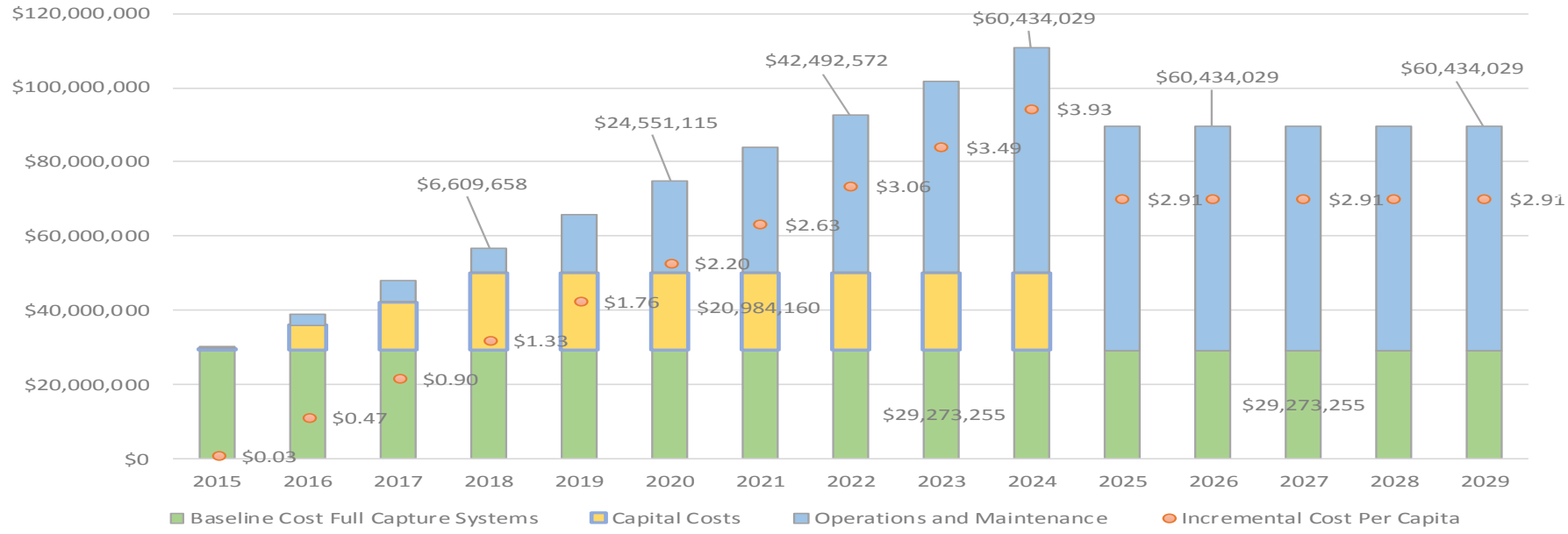
4. The land coverage analysis does not take into consideration institutional controls or other approved methods of compliance.
   Compliance with the final Trash Amendments can be achieved with the installation of structural controls or a combination of structural controls and other methods including institutional controls. The land coverage analysis does not include an estimate of potential cost for a combination of institutional and structural controls per acre of priority land use. This approach would probably estimate the more reliable results. Further analysis would be necessary to estimate total costs of Track 2.

[81] City of Los Angeles Stormwater Management Division. 2002. High Trash-Generation Areas and Control Measures. http://www.lastormwater.org/wp-content/files_mf/trash_gen_study.pdf

Table 27. Cost of Compliance Schedule Based on High Intensity Land Cover

Cost Categories	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026
Capital Costs	$20,984,160	$20,984,160	$20,984,160	$20,984,160	$20,984,160	$20,984,160	$20,984,160	$20,984,160	$20,984,160	$20,984,160	$0	$0
Operations and Maintenance	$8,970,728	$17,941,457	$26,912,185	$35,882,914	$44,853,642	$53,824,370	$62,795,099	$71,765,827	$80,736,556	$89,707,284	$89,707,284	$89,707,284
Total Cost	$29,954,888	$38,925,617	$47,896,345	$56,867,074	$65,837,802	$74,808,530	$83,779,259	$92,749,987	$101,720,716	$110,691,444	$89,707,284	$89,707,284
Cost Per Capita	*$1.44*	*$1.88*	*$2.31*	*$2.74*	*$3.18*	*$3.61*	*$4.04*	*$4.47*	*$4.91*	*$5.34*	*$4.33*	*$4.33*
Baseline Cost Full Capture Systems	*$29,273,255*	*$29,273,255*	*$29,273,255*	*$29,273,255*	*$29,273,255*	*$29,273,255*	*$29,273,255*	*$29,273,255*	*$29,273,255*	*$29,273,255*	*$29,273,255*	*$29,273,255*
Incremental Cost	**$681,633**	**$9,652,361**	**$18,623,090**	**$27,593,818**	**$36,564,547**	**$45,535,275**	**$54,506,003**	**$63,476,732**	**$72,447,460**	**$81,418,189**	**$60,434,029**	**$60,434,029**
Incremental Cost Per Capita	*$0.03*	*$0.47*	*$0.90*	*$1.33*	*$1.76*	*$2.20*	*$2.63*	*$3.06*	*$3.49*	*$3.93*	*$2.91*	*$2.91*

Figure 12 Compliance Schedule for Track 1 for MS4 Phase I and Phase II Permittees Based on High Intensity Land Coverage



7. POTENTIAL COSTS FOR INDUSTRIAL AND CONSTRUCTION PERMITTEES

There are 9,251 industrial facilities regulated under the Storm Water Industrial Program[82]. The estimated compliance costs (Track 1) with the final Trash Amendments for the industrial facilities are $33.9[83] million or $3,671[84] per facility.

The number of full capture systems required to comply with Track 1 is directly proportional to the number of catch basins and storm drains in each industrial site. Information regarding the number of storm drains in each industrial site is not available in the SMARTS database[85].

Given the small size of many industrial permittees, we assumed that smaller facilities would choose to comply with the final Trash Amendments implementing institutional controls rather than full capture systems. It is likely that only larger facilities would choose to install full capture systems. We identified two groups based on facility size. Out of the 9,251 industrial sites, 2,501 facilities with a size larger than 10 acres were assumed to comply by installing full capture systems and 6,750 facilities with a size of less than 10 acres, or without size information, would comply by implementing institutional controls such as training and manual cleanup.

In our calculations, the following assumptions[86] were made and used for the cost factors.

- Facilities larger than 10 acres would comply with Track 1.
- An average of 10 catch basins per facility for facilities greater than 10 acres.
- The cost of installation of each full capture system is estimated to be $800 and the annual operation and maintenance to be $342.
- Facilities smaller than 10 acres would implement institutional controls.
- Cost of institutional controls includes a $500 initial training and an annual cost of $300 in other measures.
- Industrial facilities are not implementing any trash control methods to comply with the final Trash Amendments, therefore all costs are incremental.

a. Track 1: Full Capture Systems

The estimated cost of compliance for industrial dischargers larger than 10 acres selecting Track 1 (2,501 facilities) would be approximately $28.5 million in a single year[87] and $8.5 million

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[82] CGP permittees are already required to comply with a prohibition to discharge debris and trash from construction sites. State Board Action 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ. Prohibition III. D. page 21. Available at: http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/wqo2009_0009_dwq.pdf. Debris is defined (footnote 4) as "Litter, rubble, discarded refuse, and remains of destroyed inorganic anthropogenic waste." Trash control costs are therefore not expected to increase for CGP permittees as a result of the final Trash Amendments.

[83] The total cost of $33.9 million is the sum of the cost for large industrial facilities calculated in Table (i.e., $28.5 million) and Table (i.e., $5.4 million).

[84] This is the result of dividing the total cost of $33.9 million by the 9,251 industrial facilities.

[85] SMARTS is the main database used to manage the Storm Water program. Available at: Stormwater Multi-Application, Reporting, and Tracking System (SMARTS)

[86] Assumptions are necessary because of the limitations in the data available regarding the activities conducted at the industrial facilities, the number of workers in each facility, etc.

[87] No compliance schedule is estimated in this section for IGP permittees. Therefore all expenditures are estimated as if they were incurred in a single year.

annually following initial implementation (Table 28). The average operation and maintenance annual cost per facility is estimated to be $3,420 and the one time average installation cost of full capture systems per facility is estimated to be $8,000.

Table 28. Estimated Cost of Compliance for Industrial Facilities Larger than 10 Acres

Size of Industrial Site	Number of Facilities	Number of Catch Basins @ 10 per Facility	Installation @ $800	Operation @ $342	Total Cost
>100 Acres	923	9,230	$7,384,000	$3,156,660	$10,540,660
10-100 acres	1,578	15,780	$12,624,000	$5,396,760	$18,020,760
Total	**2,501**	**25,010**	$20,008,000	$8,553,420	**$28,561,420**

b. Track 2: Combination of Full Capture Systems, Other Treatment Controls, Institutional Controls, Multi-Benefit Projects

The estimated cost of compliance for industrial permittees smaller than 10 acres selecting Track 2 (6,750 facilities) would be approximately $5.4 million in a single year and $2 million annually following initial implementation (Table 29).

Table 29. Estimated Cost of Compliance for Industrial Facilities Smaller than 10 Acres

Size of Industrial Site	Number of Facilities	Training @ $500	Operation @ $300	Total Cost
<10 acres	3,571	$1,785,500	$1,071,300	$2,856,800
No Size Data	3,179	$1,589,500	$953,700	$2,543,200
Total	**6,750**	$3,375,000	$2,025,000	**$5,400,000**

c. Compliance Schedule

Industrial permittees subject to the final Trash Amendments must demonstrate full compliance with the deadlines of the first implementing NPDES permit (whether such permits are modified, re-issued, or newly adopted). The deadlines cannot exceed the terms of the first implementing permit. With uncertain compliance timelines for these permittees, it is difficult to estimate and predict the schedule of the cost of complying with the final Trash Amendments, which is why this analysis assumes a permittees' full compliance being achieved in a single year, rather than amortized over several years.

8. POTENTIAL COSTS FOR CALTRANS

Caltrans' Division of Maintenance expenditures on "litter removal" are $80 million[88] million per year[89]. According to Caltrans, there are approximately 50,000 (approximately 15,000 centerline miles) in California[90]. Therefore, the current cost of litter removal is, on average, $1,600 per lane mile per year.

a. Compliance with the Final Trash Amendments

Caltrans may comply with the final Trash Amendments by installing, operating and maintaining any combination of full capture systems, other treatment controls, institutional controls and/or multi benefit projects for all storm drains that captures runoff from its significant trash generating areas.

Caltrans already implements a variety of institutional controls, including a statewide public outreach and education program (e.g., "Don't Trash California"). Caltrans also operates the Adopt-a-Highway program to clean up trash from its roadways. For this reason, and because of the many site-specific factors Caltrans will need to consider that are not available, we cannot identify with precision specific trash control that Caltrans may use. To determine the economic impact to Caltrans, we considered one possible approach that assumes no increase of institutional controls and some incremental level of structural controls to reduce trash loads to waters.

To estimate the location and relative extent of Caltrans' significant trash generating areas, we used a GIS analysis to determine the centerline miles of the state highway system. Areas already covered by existing trash and debris TMDLs and the areas of San Francisco and served by combined sewer systems[91] were excluded. Next, we identified urban boundaries using city, town and census defined places from the U .S. Census Bureau TIGER/LineR Shapefiles[92]. Figure 13 provides a map of the resulting 5,990 urban centerline miles. We then assumed that 20% of the urban centerline miles would serve as a proxy for significant trash generating areas that that would require additional structural controls to comply with the final Trash Amendments. Using this method, 1,198 centerline miles were identified that may need to be addressed using structural control.

For unit costs, we assumed the same installation ($800) and annual operation and maintenance ($342) costs as those used in Section 7. We estimated that there are approximately 18 catch basins per mile in rural areas and 36 catch basins per mile in urban areas. Because significant trash generating areas are more likely to be in urban areas, we used the higher estimate to calculate the number of catch basins needing full capture devices. Under these assumptions, estimated incremental capital costs for Caltrans would be approximately $35 million and incremental annual operation would be approximately $15 million (Table 30).

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[88] Litter removal costs are provided by Caltrans Maintenance Program. Available at: http://www.dot.ca.gov/docs/LitterAbatementPlan.pdf

[89] See fn. 32, *ante*.

[90] California State Transportation Agency. 2012. 2012 California Public Road Data, Table 1. Accessed May 2014. Available at: http://www.dot.ca.gov/hq/tsip/hpms/datalibrary.php

[91] Areas with a combined sewer system are not explicitly carved out by the final Trash Amendments, but because all storm water in these areas is captured and treated, they are not considered significant trash generating areas and should not require additional trash controls. Therefore these areas were also excluded from Caltrans cost analysis.

[92] U. S. Census Bureau. 2012. 2012 TIGER Shapefiles for census tracts and census designated places. Accessed January 2014. Available at: http://www.census.gov/geo/maps-data/data/tiger-line.html

Table 30. Incremental Capital Costs and Operation and Maintenance Estimates for Caltrans

Factor	Estimates
Centerline Miles of Roadway	15,147
Centerline miles in Urban areas.	5,990
Percent of subject miles requiring structural controls	20%
Affected Miles	1,198
Drop inlets per mile	36
Total number of drop inlets	46534
Total Capital Cost (@ $800 per drop inlet)	**$34,502,400**
Annual Operation & Maintenance Cost (@ $342 per drop inlet per year)	**$14,749,776**

b. Compliance Schedule

Compliance with the water quality objective and implementing the prohibition of discharge will be demonstrated by Caltrans according to a time schedule set forth in the final Trash Amendments. The compliance schedule will be contingent on the effective date of the first implementing permit. Caltrans must demonstrate full compliance within ten years of the effective date of the first implementing permitting permit[93]. The State Water Board can set achievements of interim milestones for compliance within a specific permit. These interim milestones could be set as a percent reduction or percent installation per year or over several years. Assuming a 10% annual investment in structural controls, the annual capital cost would be approximately $3.5 million.

Reaching full compliance with the prohibition of discharge will require extensive planning by Caltrans. To assist Caltrans with planning for full compliance, the State Water Board will issue a Water Code section 13267 or 13383 order within 18 months of the effective date of the final Trash Amendments requesting an implementation plan. Requesting an implementation plan from Caltrans permittees prior to the will optimize compliance planning and implementation.

c. Limitations and Uncertainties

Due to the differences in the type, size and distribution of facilities, the construction, operation and maintenance of trash control systems on highways and roads managed by Caltrans districts will be extremely site specific, and may differ significantly from costs for municipalities. The calculations are sensitive to the assumptions used to estimate significant trash generating areas and the percentage of those areas that would require additional structural controls. For example, we based cost calculations on the assumption that significant trash generating areas will largely correspond to urban areas. However, this assumption may underestimate costs that some significant trash generating areas will occur in non-urban areas, such as rest stops. GIS

[93] See fn. 42, *ante*.

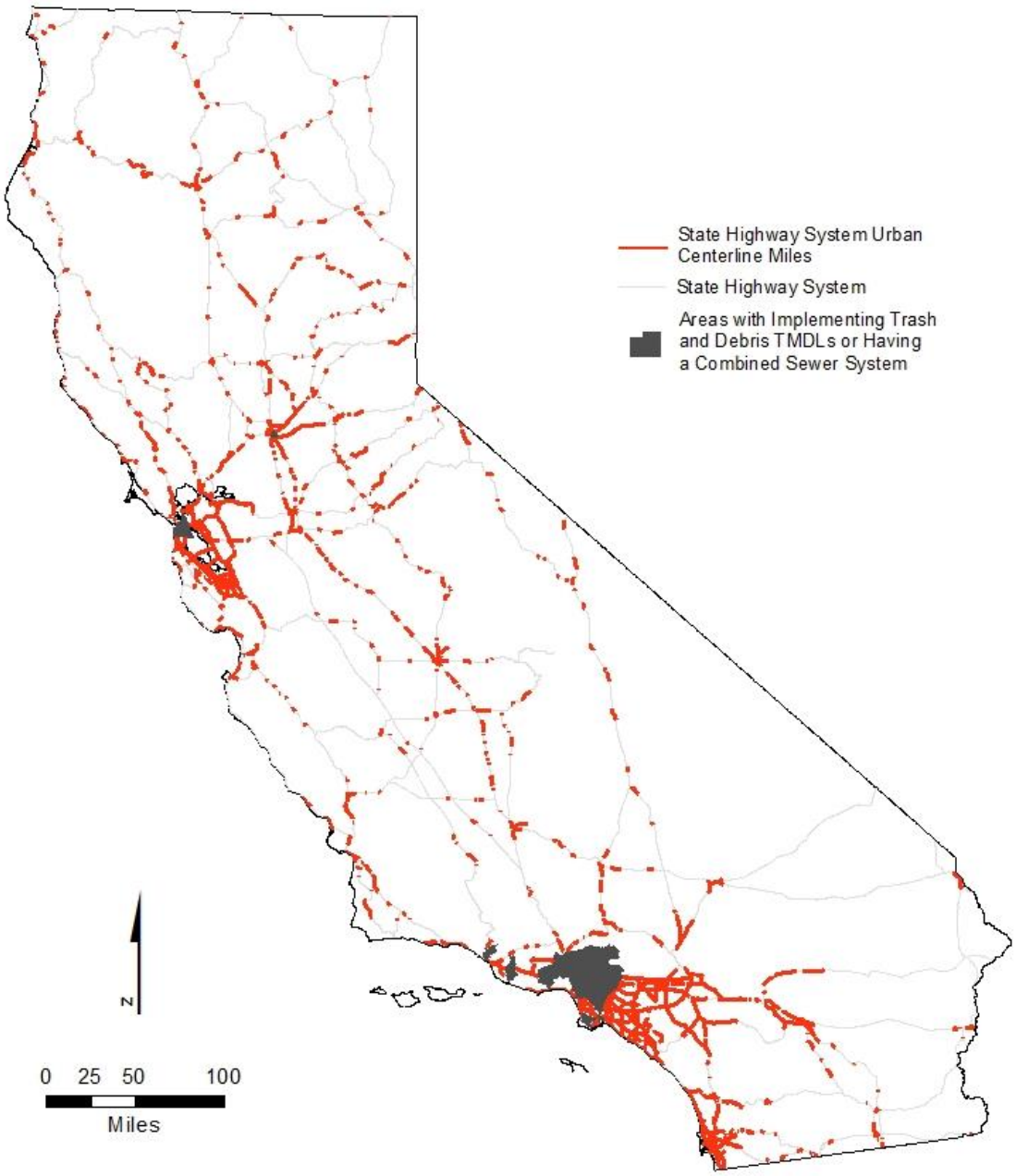
data from Caltrans indicates there are currently 88 rest stop areas in California, seven of which are already accounted for in the calculation of urban centerline miles. If these rest areas are determined to be significant trash generating areas, the capital costs are expected to increase by less than $1 million using the methodology described above. In addition, Caltrans has suggested that 40% is a more reasonable estimate of the Percent of subject miles requiring structural controls[94]. However Caltrans did not provide justification for this estimate. If the calculations in Table 30 were revised to use Caltrans assumptions, the total estimated capital cost would increase to approximately $69 million.

Finally, we anticipate that Caltrans likely will choose Gross Solids Removal Devices in many locations instead of catch basin inserts. Gross Solids Removal Devices are generally more expensive to install and maintain, but also cover larger areas. Without additional information on the specific location and site conditions where additional trash controls will be needed, we cannot determine whether on balance Gross Solids Removal Devices will be more or less expensive than catch basin inserts[95].

[94] Source: McGowen, Scott., California Department of Transportation. Letter to Diana Messina, California State Water Resources Control Board. November 7, 2014.

[95] During the comment period and subsequent correspondence and conversations with Caltrans, Caltrans provided a cost estimate of $176,000 per treated acre as the total installation cost for gross solid removal devices. However, this estimate was developed to address TMDL compliance for multiple pollutants (Source: McGowen, Scott., California Department of Transportation. Letter to Diana Messina, California State Water Resources Control Board. November 7, 2014). Caltrans may indeed choose to install Gross Solid Removal Devices to address multiple pollutants, but cheaper alternatives exist for trash and therefore the full costs associated with Gross Solids Removal Devices may not be reasonably attributed to these amendments. In fact, to the extent that Gross Solid Removal Devices are already required under the Caltrans MS4 permit, costs to implement the Trash Amendments could be substantially less than estimated above. Please see the responses to comments document for additional information.

Figure 13. State Highway System Centerlines in Urban Areas.



9. Potential Costs for Other Dischargers

The final Trash Amendments include a provision that allows the Water Boards to require dischargers that are not subject to Section 3[96] of the final Trash Amendments to implement trash controls in areas or facilities that may generate trash. Such areas or facilities may include (but are not limited to) high usage campgrounds, picnic areas, beach recreation areas, parks not subject to an MS4 permit, or marinas.

Because of the optional nature of this provision, no baseline figures are available with which to conduct an economic analysis. The absence of specific baseline figures, coupled with the variety of compliance options available, and the resulting wide range of costs related to this group of dischargers, no information is available to develop specific cost estimates for the incremental trash control costs associated with this category of dischargers at this point.

10. Conclusion

The presence of trash in surface waters, especially coastal and marine waters, is a serious issue in California. California communities are currently spending $428 million annually to control trash from entering water of the states, which varies between the sizes of communities. With the final Trash Amendments, the State Water Board's objective is to provide statewide consistency for the Water Boards' regulatory approach to protect aquatic life and public health beneficial uses, and reduce environmental issues associated with trash in state waters, while focusing limited resources on high trash generating areas.

To achieve this objective, a central element of the final Trash Amendments is a land-use based compliance approach to focus trash control to areas with high trash generation rates. Within this land-use based approach, a dual alternative compliance Track approach is proposed for permitted storm water dischargers (i.e., MS4 Phase I, MS4 Phase II, Caltrans, IGP, and CGP) to implement the prohibition of discharge for trash.

Under the requirements of Water Code sections 13170 and 13241, subdivision (d) that require the State Water Board to consider economics when establishing water quality objectives. This economic analysis is not a cost-benefit analysis, but a consideration of potential costs of a suite of reasonably foreseeable measures to comply with the final Trash Amendments. This economic analysis utilized two basic methods to estimate the incremental cost of compliance for permitted storm water discharge: the first method was based on cost of compliance per capita, and the second method was based on land cover.

This economic analysis estimated the incremental annual cost to comply with the requirements of the final Trash Amendments ranged from $4 to $10.67 per year per capita for MS4 Phase I NPDES permittees and from $7.77 to $7.91 per year per capita for smaller communities regulated under MS4 Phase II permits. For IGP facilities, the estimated compliance cost is $33.9 million or $3,671 per facility. To comply with the final Trash Amendments, expenditures by Caltrans are estimated to increase by $34.5 million in total capital costs and $14.7 million per year for operation and maintenance of structural controls.

[96] As proposed to the Ocean Plan Ch. III(L)(2). As proposed to the ISWEBE Plan Ch. IV(A)(3).

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APPENDIX D: FINAL AMENDMENT TO WATER QUALITY CONTROL PLAN FOR OCEAN WATERS OF CALIFORNIA TO CONTROL TRASH

Text of the final amendment to control trash proposed to be amended into Chapter II – Water Quality Objectives of the Ocean Plan

C. Physical Characteristics

5. Trash* shall not be present in ocean waters, along shorelines or adjacent areas in amounts that adversely affect beneficial uses or cause nuisance.

Text of the final amendment to control trash proposed to be amended into Chapter III – Program of Implementation of the Ocean Plan

I. Prohibition of Discharge

6. Trash*

The discharge of Trash* to surface waters of the State or the deposition of Trash* where it may be discharged into surface waters of the State is prohibited. Compliance with this prohibition of discharge shall be achieved as follows:

a. Dischargers with NPDES permits that contain specific requirements for the control of Trash* that are consistent with these Trash Provisions* shall be determined to be in compliance with this prohibition if the dischargers are in full compliance with such requirements.

b. Dischargers with non-NPDES waste discharge requirements (WDRs) or waivers of WDRs that contain specific requirements for the control of Trash* shall be determined to be in compliance with this prohibition if the dischargers are in full compliance with such requirements.

c. Dischargers with NPDES permits, WDRs, or waivers of WDRs that do not contain specific requirements for the control of Trash* are exempt from these Trash Provisions*.

d. Dischargers without NPDES permits, WDRs, or waivers of WDRs must comply with this prohibition of discharge.

e. Chapter III.I.6.b and Chapter III.L.3 notwithstanding, this prohibition of discharge applies to the discharge of preproduction plastic* by manufacturers of preproduction plastics*, transporters of preproduction

*Represents a defined term in the California Ocean Plan.

plastics*, and manufacturers that use preproduction plastics* in the manufacture of other products to surface waters of the State, or the deposition of preproduction plastic* where it may be discharged into surface waters of the State, unless the discharger is subject to a NPDES permit for discharges of storm water* associated with industrial activity.

L. Implementation Provisions for Trash*

1. Applicability

a. These Trash Provisions* shall be implemented through a prohibition of discharge (Chapter III.I.6) and through NPDES permits issued pursuant to section 402(p) of the Federal Clean Water Act, waste discharge requirements (WDRs), or waivers of WDRs (as set forth in Chapter III.L.2 and Chapter III.L.3 below).

b. These Trash Provisions* apply to all surface waters of the State, with the exception of those waters within the jurisdiction of the Los Angeles Regional Water Quality Control Board (Los Angeles Water Board) for which trash Total Maximum Daily Loads (TMDLs) are in effect prior to the effective date of these Trash Provisions*[1]; provided, however, that:

(1) Upon the effective date of these Trash Provisions*, the Los Angeles Water Board shall cease its full capture system* certification process~~,~~ and provide that any new full capture systems* shall be certified by the State Water Board in accordance with these Trash Provisions*.

(2) Within one year of the effective date of these Trash Provisions*, the Los Angeles Water Board shall convene a public meeting to reconsider the scope of its trash TMDLs, with the exception of those for the Los Angeles River and Ballona Creek watersheds, to particularly consider an approach that would focus MS4* permittees' trash-control efforts on high-trash generation areas within their jurisdictions.

[1] In the Los Angeles Region, there are fifteen (15) trash TMDLs for the following watersheds and water bodies: Los Angeles River Watershed, Ballona Creek, Malibu Creek Watershed, Santa Monica Bay Nearshore and Offshore, San Gabriel River East Fork, Revolon Slough and Beardsley Wash, Ventura River Estuary, Machado Lake, Lake Elizabeth, Lake Hughes, Munz Lake, Peck Road Park Lake, Echo Park Lake, Lincoln-Park Lake and Legg Lake. Three of these were established by the U.S. EPA: Peck Road Park Lake, Echo Park Lake and Lincoln Park Lake.

2. Dischargers Permitted Pursuant to Federal Clean Water Act Section 402(p)

Permitting authorities* shall include the following requirements in NPDES permits issued pursuant to Federal Clean Water Act section 402(p):

a. MS4* permittees with regulatory authority over priority land uses* shall be required to comply with the prohibition of discharge in Chapter III.I.6.a herein by either of the following measures:

(1) Track 1: Install, operate, and maintain full capture systems* for all storm drains that captures runoff from the priority land uses* in their jurisdictions; or

(2) Track 2: Install, operate, and maintain any combination of full capture systems*, multi-benefit projects*, other treatment controls*, and/or institutional controls* within either the jurisdiction of the MS4* permittee or within the jurisdiction of the MS4* permittee and contiguous MS4* permittees. The MS4* permittee may determine the locations or land uses within its jurisdiction to implement any combination of controls. The MS4* permittee shall demonstrate that such combination achieves full capture system equivalency*. The MS4* permittee may determine which controls to implement to achieve compliance with full capture system equivalency*. It is, however, the State Water Board's expectation that the MS4* permittee will elect to install full capture systems* where such installation is not cost-prohibitive.

b. The California Department of Transportation (Department) shall be required to comply with the prohibition of discharge in Chapter III.I.6.a herein in all significant trash generating areas* by installing, operating, and maintaining any combination of full capture systems*, multi-benefit projects*, other treatment controls*, and/or institutional controls* for all storm drains that captures runoff from significant trash generating areas*. The Department shall demonstrate that such combination achieves full capture system equivalency*. In furtherance of this provision, the Department and MS4* permittees that are subject to the provisions of Chapter III.L.2.a herein shall coordinate their efforts to install, operate, and maintain full capture systems*, multi-benefit projects*, other treatment controls*, and/or institutional controls* in significant trash generating areas* and/or priority land uses*.

c. Dischargers that are subject to NPDES permits for discharges of storm water* associated with industrial activity (including construction activity) shall be required to comply with the prohibition of discharge in Chapter

*Represents a defined term in the California Ocean Plan.

III.I.6.a herein by eliminating Trash* from all storm water* and authorized non-storm water* discharges consistent with an outright prohibition of the discharge of Trash* contained within the applicable NPDES permit regulating the industrial or construction facility. If the discharger can satisfactorily demonstrate to the permitting authority* its inability to comply with the outright prohibition of the discharge of Trash* contained within the applicable NPDES permit, then the permitting authority* may require the discharger to either:

(1) Install, operate, and maintain full capture systems* for all storm drains that captures runoff from the facility or site regulated by the NPDES permit; or,

(2) Install, operate, and maintain any combination of full capture systems*, multi-benefit projects*, other treatment controls*, and/or institutional controls* for the facility or site regulated by the NPDES permit. The discharger shall demonstrate that such combination achieves full capture system equivalency*.

Termination of permit coverage for industrial and construction storm water* dischargers shall be conditioned upon the proper operation and maintenance of all controls (e.g., full capture systems*, multi-benefit projects*, other treatment controls*, and/or institutional controls*) used at their facility(ies).

d. A permitting authority* may determine that specific land uses or locations (e.g., parks, stadia, schools, campuses, or roads leading to landfills) generate substantial amounts of Trash*. In the event that the permitting authority* makes that determination, the permitting authority* may require the MS4* to comply with Chapter III.L.2.a.1 or Chapter III.L.2.a.2, as determined by the permitting authority*, with respect to such land uses or locations.

3. Other Dischargers

A permitting authority* may require dischargers, described in Chapter III.I.6.c or Chapter III.I.6.d, that are not subject to Chapter III.L.2 herein, to implement any appropriate Trash* controls in areas or facilities that may generate Trash*. Such areas or facilities may include (but are not limited to) high usage campgrounds, picnic areas, beach recreation areas, parks not subject to an MS4* permit, or marinas.

*Represents a defined term in the California Ocean Plan.

4. Time Schedule

The permitting authority* shall modify, re-issue, or newly adopt NPDES permits issued pursuant to section 402(p) of the Federal Clean Water Act that are subject to the provisions of Chapter III.L.2 herein to include requirements consistent with these Trash Provisions*. The permitting authorities* shall abide by the following time schedules:

a. NPDES Permits Regulating MS4* Permittees that have Regulatory Authority over Priority Land Uses*.[2]

(1) Within eighteen (18) months of the effective date of these Trash Provisions*, for each permittee, each permitting authority* shall either:

A. Modify, re-issue, or adopt the applicable MS4* permit to add requirements to implement these Trash Provisions*. The implementing permit shall require written notice from each MS4* permittee stating whether it has elected to comply under Chapter III.L.2.a.1 (Track 1) or Chapter III.L.2.a.2 (Track 2) and such notice shall be submitted to the permitting authority* no later than three (3) months from the effective date of the implementing permit, or for MS4s* designated after the effective date of these Trash Provisions*, three (3) months from the effective date of that designation. The implementing permit shall also require that within eighteen (18) months of the effective date of the implementing permit or new designation, MS4* permittees that have elected to comply with Track 2 shall submit an implementation plan to the permitting authority*. The implementation plan shall describe: (i) the combination of controls selected by the MS4* permittee and the rationale for

[2] The time schedule requirement in Chapter III.L.4.a.1 requiring MS4* permittees to elect Chapter III.L.2.a.1 (Track 1) or Chapter III.L.2.a.2 (Track 2) does not apply to MS4* permittees subject to the Municipal Regional Stormwater NPDES Permit (MRP) issued by the San Francisco Bay Regional Water Quality Control Board (San Francisco Bay Water Board) or the East Contra Costa Municipal Storm Water Permit issued by the Central Valley Regional Water Quality Control Board (Central Valley Water Board) because those permits already require control requirements substantially equivalent to Track 2. The time schedule requirement in Chapter III.L.4.a.1 requiring MS4* permittees to submit an implementation plan does not apply to the above permittees if the pertinent permitting authority* determines that such permittee has already submitted an implementation plan prior to the effective date of the Trash Provisions* that is equivalent to the implementation plan required by Chapter III.L.4.a.1. In the aforementioned permits, the pertinent permitting authority* may establish an earlier full compliance deadline than that specified in Chapter III.L.4.a.3.

the selection, (ii) how the combination of controls is designed to achieve full capture system equivalency*, and (iii) how full capture system equivalency* will be demonstrated. The implementation plan is subject to approval by the permitting authority*.

B. Issue an order pursuant to Water Code section 13267 or 13383 requiring the MS4* permittee to submit, within three (3) months from receipt of the order, written notice to the permitting authority* stating whether such MS4* permittee will comply with the prohibition of discharge under Chapter III.L.2.a.1 (Track 1) or Chapter III.L.2.a.2 (Track 2). For MS4s* designated after the effective date of these Trash Provisions*, the order pursuant to Water Code section 13267 or 13383 shall be issued at the time of designation. Within eighteen (18) months of the receipt of the Water Code section 13267 or 13383 order, MS4* permittees that have elected to comply with Track 2 shall submit an implementation plan to the permitting authority* that describes: (i) the combination of controls selected by the MS4* permittee and the rationale for the selection, (ii) how the combination of controls is designed to achieve full capture system equivalency*, and (iii) how full capture system equivalency* will be demonstrated. The implementation plan is subject to approval by the permitting authority*.

(2) For MS4* permittees that elect to comply with Chapter III.L.2.a.1 (Track 1), the implementing permit shall state that full compliance shall occur within ten (10) years of the effective date of the first implementing permit except as specified in Chapter III.L.4.a.5. The permit shall also require these permittees to demonstrate achievement of interim milestones such as an average of ten percent (10%) of the full capture systems* installed every year or other progress to full implementation. In no case may the final compliance date be later than fifteen (15) years from the effective date of these Trash Provisions*.

(3) For MS4* permittees that elect to comply with Chapter III.L.2.a.2 (Track 2), the implementing permit shall state that full compliance shall occur within ten (10) years of the effective date of the first implementing permit except as specified in Chapter III.L.4.a.5. The permit shall also require these permittees to demonstrate achievement of interim milestones such as average load reductions of ten percent (10%) per year or other progress to full implementation. In no case may the final compliance date be later

*Represents a defined term in the California Ocean Plan.

than fifteen (15) years from the effective date of these Trash Provisions*.

(4) The implementing permit shall state that for MS4* permittees designated after the effective date of the implementing permit, full compliance shall occur within ten (10) years of the effective date of the designation. The permit shall also require such designations to demonstrate achievement of interim milestones such as average load reductions of ten percent (10%) per year or other progress to full implementation.

(5) Where a permitting authority* makes a determination pursuant to Chapter III.L.2.d that a specific land use generates a substantial amount of Trash*, that permitting authority* has discretion to determine the time schedule for full compliance. In no case may the final compliance date be later than ten (10) years from the determination.

b. NPDES Permits Regulating the Department.

(1) Within eighteen (18) months of the effective date of these Trash Provisions*, the State Water Board shall issue an order pursuant to Water Code section 13267 or 13383 requiring the Department to submit an implementation plan to the Executive Director of the State Water Board that: (i) describes the specific locations of its significant trash generating areas*, (ii) the combination of controls selected by the Department and the rationale for the selections, and (iii) how it will demonstrate full capture system equivalency*.

(2) The Department must demonstrate full compliance with Chapter III.L.2.b herein within ten (10) years of the effective date of the first implementing NPDES permit, along with achievements of interim milestones such as average load reductions of ten percent (10%) per year. In no case may the final compliance date be later than fifteen (15) years from the effective date of these Trash Provisions*.

c. NPDES Permits Regulating the Discharges of Storm Water* Associated with Industrial Activity (Including Construction Activity). Dischargers that are subject to the provisions of Chapter III.L.2.c herein must demonstrate full compliance in accordance with the deadlines contained in the first implementing NPDES permits. Such deadlines may not exceed the terms of the first implementing permits.

*Represents a defined term in the California Ocean Plan.

5. Monitoring and Reporting

The permitting authority* must include monitoring and reporting requirements in its implementing permits. The following monitoring and reporting provisions are the minimum requirements that must be included within the implementing permits:

a. MS4* permittees that elect to comply with Chapter III.L.2.a.1 (Track 1) shall provide a report to the applicable permitting authority* demonstrating installation, operation, maintenance, and the Geographic Information System- (GIS-) mapped location and drainage area served by its full capture systems* on an annual basis.

b. MS4* permittees that elect to comply with Chapter III.L.2.b.2 (Track 2) shall develop and implement monitoring plans that demonstrate the effectiveness of the full capture systems*, multi-benefit projects*, other treatment controls*, and/or institutional controls* and compliance with full capture system equivalency*. Monitoring reports shall be provided to the applicable permitting authority* on an annual basis, and shall include GIS-mapped locations and drainage area served for each of the full capture systems*, multi-benefit projects*, other treatment controls*, and/or institutional controls* installed or utilized by the MS4* permittee. In developing the monitoring reports the MS4* permittee should consider the following questions:

(1) What type of and how many treatment controls*, institutional controls*, and/or multi-benefit projects* have been used and in what locations?

(2) How many full capture systems* have been installed (if any), in what locations have they been installed, and what is the individual and cumulative area served by them?

(3) What is the effectiveness of the total combination of treatment controls*, institutional controls*, and multi-benefit projects* employed by the MS4* permittee?

(4) Has the amount of Trash* discharged from the MS4* decreased from the previous year? If so, by how much? If not, explain why.

(5) Has the amount of Trash* in the MS4's* receiving water(s) decreased from the previous year? If so, by how much? If not, explain why.

c. The Department, as subject to the provisions of Chapter III.L.2.b, shall develop and implement monitoring plans that demonstrate the

*Represents a defined term in the California Ocean Plan.

effectiveness of the controls, and compliance with full capture system equivalency*. Monitoring reports shall be provided to the State Water Board on an annual basis, and shall include GIS-mapped locations and drainage area served for each of the full capture systems*, multi-benefit projects*, other treatment controls*, and/or institutional controls* installed or utilized by the Department. In developing the monitoring report, the Department should consider the following questions:

(1) What type of and how many treatment controls* institutional controls*, and/or multi-benefit projects* have been used and in what locations?

(2) How many full capture systems* have been installed (if any), in what locations have they been installed, and what is the individual and cumulative area served by them?

(3) What is the effectiveness of the total combination of treatment controls*, institutional controls*, and multi-benefit projects employed by the Department?

(4) Has the amount of Trash* discharged from the Department's MS4* decreased from the previous year? If so, by how much? If not, explain why.

(5) Has the amount of Trash* in the receiving waters decreased from the previous year? If so, by how much? If not, explain why.

d. Dischargers that are subject to the provisions of Chapter III.L.2.c herein shall be required to report the measures used to comply with Chapter III.L.2.c.

Text of the final amendment to control trash proposed to be amended into Appendix I of the Ocean Plan

APPENDIX I

DEFINITION OF TERMS

Full capture system is a treatment control*, or series of treatment controls*, including but not limited to, a multi-benefit project* or a low-impact development control* that traps all particles that are 5 mm or greater, and has a design treatment capacity that is either: a) of not less than the peak flow rate, Q, resulting from a one-year, one-hour, storm in the subdrainage area, or b) appropriately sized to, and designed to carry at least the same flows as, the corresponding storm drain.

*Represents a defined term in the California Ocean Plan.

[Rational equation is used to compute the peak flow rate: Q = C•I•A, where Q = design flow rate (cubic feet per second, cfs); C = runoff coefficient (dimensionless); I = design rainfall intensity (inches per hour, as determined per the rainfall isohyetal map specific to each region, and A = subdrainage area (acres).]

Prior to installation, full capture systems* must be certified by the Executive Director, or designee, of the State Water Board. Uncertified full capture systems* will not satisfy the requirements of these Trash Provisions*. To request certification, a permittee shall submit a certification request letter that includes all relevant supporting documentation to the State Water Board's Executive Director. The Executive Director, or designee, shall issue a written determination approving or denying the certification of the proposed full capture system* or conditions of approval, including a schedule to review and reconsider the certification. Full capture systems* certified by the Los Angeles Regional Water Board prior to the effective date of these Trash Provisions* and full capture systems* listed in Appendix I of the Bay Area-wide Trash Capture Demonstration Project, Final Project Report (May 8, 2014) will satisfy the requirements of these Trash Provisions*, unless the Executive Director, or designee, of the State Water Board determines otherwise.

Full capture system equivalency is the Trash* load that would be reduced if full capture systems* were installed, operated, and maintained for all storm drains that capture runoff from the relevant areas of land (priority land uses*, significant trash generating areas*, facilities or sites regulated by NPDES permits for discharges of storm water* associated with industrial activity, or specific land uses or areas that generate substantial amounts of Trash*, as applicable). The full capture system equivalency* is a Trash* load reduction target that the permittee quantifies by using an approach, and technically acceptable and defensible assumptions and methods for applying the approach, subject to the approval of permitting authority*. Examples of such approaches include, but are not limited to, the following:

(1) Trash Capture Rate Approach. Directly measure or otherwise determine the amount of Trash* captured by full capture systems* for representative samples of all similar types of land uses, facilities, or areas within the relevant areas of land over time to identify specific trash capture rates. Apply each specific Trash* capture rate across all similar types of land uses, facilities, or areas to determine full capture system equivalency*. Trash* capture rates may be determined either through a pilot study or literature review. Full capture systems* selected to evaluate Trash* capture rates may cover entire types of land uses, facilities, or areas, or a representative subset of types of land uses, facilities, or areas. With this approach, full capture system equivalency* is the sum of the products of each type of land use, facility, or area multiplied by Trash* capture rates for that type of land use, facility, or area.

*Represents a defined term in the California Ocean Plan.

(2) Reference Approach. Determine the amount of Trash* in a reference receiving water in a reference watershed where full capture systems* have been installed for all storm drains that capture runoff from all relevant areas of land. The reference watershed must be comprised of similar types and extent of sources of trash* and land uses (including priority land uses* and all other land uses), facilities, or areas as the permittee's watershed. With this approach, full capture system equivalency* would be demonstrated when the amount of Trash* in the receiving water is equivalent to the amount of Trash* in the reference receiving water.

Institutional controls are non-structural best management practices (i.e., no structures are involved) that may include, but not be limited to, street sweeping, sidewalk Trash* bins, collection of the Trash*, anti-litter educational and outreach programs, producer take-back for packaging, and ordinances.

Low-impact development controls are treatment controls* that employ natural and constructed features that reduce the rate of storm water* runoff, filter out pollutants, facilitate storm water* storage onsite, infiltrate storm water* *into the ground to replenish groundwater supplies, or improve the quality of receiving groundwater and surface water. (See Water Code § 10564.)

Multi-benefit project is a treatment control* project designed to achieve any of the benefits set forth in section 10562, subdivision (d) of the Water Code. Examples include projects designed to: infiltrate, recharge or store storm water* for beneficial reuse; develop or enhance habitat and open space through storm water* and non-storm water management; and/or reduce storm water* and non-storm water runoff volume.

Municipal Separate Storm Sewer System (MS4) has the same meaning set forth in 40 Code of Federal Regulations section 122.26(b)(8).

Preproduction plastic has the same meaning set forth in section 13367(a) of the Water Code.

Priority land uses are those developed sites, facilities, or land uses (i.e., not simply zoned land uses) within the MS4* permittee's jurisdiction from which discharges of Trash* are regulated by this Ocean Plan as follows:

(1) **High-density residential**: all land uses with at least ten (10) developed dwelling units/acre.
(2) **Industrial**: land uses where the primary activities on the developed parcels involve product manufacture, storage, or distribution (e.g., manufacturing businesses, warehouses, equipment storage lots, junkyards, wholesale businesses, distribution centers, or building material sales yards).
(3) **Commercial**: land uses where the primary activities on the developed parcels involve the sale or transfer of goods or services to consumers (e.g., business or professional buildings, shops, restaurants, theaters, vehicle repair shops, etc.)

*Represents a defined term in the California Ocean Plan.

(4) **Mixed urban**: land uses where high-density residential, industrial, and/or commercial land uses predominate collectively (i.e., are intermixed).
(5) **Public transportation stations**: facilities or sites where public transit agencies' vehicles load or unload passengers or goods (e.g., bus stations and stops).

Equivalent alternate land uses: An MS4* permittee with regulatory authority over priority land uses* may issue a request to the applicable permitting authority* that the MS4* permittee be allowed to substitute one or more land uses identified above with alternates land use within the MS4* permittee's jurisdiction that generates rates of Trash* that are equivalent to or greater than the priority land use(s)* being substituted. The land use area requested to substitute for a priority land use* need not be an acre-for-acre substitution but may involve one or more priority land uses*, or a fraction of a priority land use*, or both, provided the total trash* generated in the equivalent alternative land use is equivalent to or greater than the total Trash* generated from the priority land use(s)* for which substitution is requested. Comparative Trash* generation rates shall be established through the reporting of quantification measures such as street sweeping and catch basin cleanup records; mapping; visual trash presence surveys, such as the "Keep America Beautiful Visible Litter Survey"; or other information as required by the permitting authority*.

Significant trash generating areas means all locations or facilities within the Department's jurisdiction where Trash* accumulates in substantial amounts, such as:

(1) Highway on- and off-ramps in high density residential, commercial, and industrial land uses (as such land uses are defined under priority land uses* herein).
(2) Rest areas and park-and-rides.
(3) State highways in commercial and industrial land uses (as such land uses are defined under priority land uses* herein).
(4) Mainline highway segments to be identified by the Department through pilot studies and/or surveys.

Storm water has the same meaning set forth in 40 Code of Federal Regulations section 122.26(b)(13) and 55 Federal Register 47990, 47995 (Nov. 16, 1990).

Treatment controls are structural best management practices to either (a) remove pollutants and/or solids from storm water* runoff, wastewater, or effluent, or (b) capture, infiltrate or reuse storm water* runoff, wastewater, or effluent. Treatment controls include full capture systems* and low-impact development controls*.

Trash means all improperly discarded solid material from any production, manufacturing, or processing operation including, but not limited to, products, product packaging, or containers constructed of plastic, steel, aluminum, glass, paper, or other synthetic or natural materials.

*Represents a defined term in the California Ocean Plan.

Trash Provisions are the water quality objective for Trash*, as well as the prohibition of discharge set forth in Chapter III.I and implementation requirements set forth in Chapter III.L herein.

*Represents a defined term in the California Ocean Plan.

APPENDIX E: FINAL PART 1 TRASH PROVISIONS OF THE WATER QUALITY CONTROL PLAN FOR INLAND SURFACE WATERS, ENCLOSED BAYS, AND ESTUARIES OF CALIFORNIA[97]

Text of the final Part 1 Trash Provisions proposed to Chapter III – Water Quality Objectives of the ISWEBE Plan

A Trash

TRASH shall not be present in inland surface waters, enclosed bays, estuaries, and along shorelines or adjacent areas in amounts that adversely affect beneficial uses or cause nuisance.

Draft text of the final Part 1 Trash Provisions proposed to Chapter IV – Implementation of Water Quality Objectives of the ISWEBE Plan

A Trash

1. Applicability

a. These TRASH PROVISIONS shall be implemented through a prohibition of discharge (Chapter IV.A.2) and through NPDES permits issued pursuant to section 402(p) of the Federal Clean Water Act, waste discharge requirements (WDRs), or waivers of WDRs (as set forth in Chapter IV.A.3 and Chapter IV.A.4 below).

b. These TRASH PROVISIONS apply to all surface waters of the State, with the exception of those waters within the jurisdiction of the Los Angeles Regional Water Quality Control Board (Los Angeles Water Board) for which trash Total Maximum Daily Loads (TMDLs) are in effect prior to the effective date of these TRASH PROVISIONS[1]; provided, however, that:

(1) Upon the effective date of these TRASH PROVISIONS, the Los Angeles Water Board shall cease its FULL CAPTURE SYSTEM certification process and provide that any new FULL CAPTURE SYSTEMS shall be certified by the State Water Board in accordance with these TRASH PROVISIONS.

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[97] The State Water Board intends to amend the Water Quality Control Plan for Enclosed Bays and Estuaries of California to create the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries of California Plan (ISWEBE Plan). The State Water Board intends that the Part 1 Trash Provisions will be incorporated into the ISWEBE Plan, once it is adopted.

[1] In the Los Angeles Region, there are fifteen (15) trash TMDLs for the following watersheds and water bodies: Los Angeles River Watershed, Ballona Creek, Malibu Creek Watershed, Santa Monica Bay Nearshore and Offshore, San Gabriel River East Fork, Revolon Slough and Beardsley Wash, Ventura River Estuary, Machado Lake, Lake Elizabeth, Lake Hughes, Munz Lake, Peck Road Park Lake, Echo Park Lake, Lincoln Park Lake and Legg Lake. Three of these were established by the USEPA: Peck Road Park Lake, Echo Park Lake and Lincoln Park Lake.

(2) Within one year of the effective date of these TRASH PROVISIONS, the Los Angeles Water Board shall convene a public meeting to reconsider the scope of its trash TMDLs, with the exception of those for the Los Angeles River and Ballona Creek watersheds, to particularly consider an approach that would focus MS4 permittees' trash-control efforts on high-trash generation areas within their jurisdictions.

2. Prohibition of Discharge

The discharge of TRASH to surface waters of the State or the deposition of TRASH where it may be discharged into surface waters of the State is prohibited. Compliance with this prohibition of discharge shall be achieved as follows:

a. Dischargers with NPDES permits that contain specific requirements for the control of TRASH that are consistent with these TRASH PROVISIONS shall be determined to be in compliance with this prohibition if the dischargers are in full compliance with such requirements.

b. Dischargers with non-NPDES WDRs or waivers of WDRs that contain specific requirements for the control of TRASH shall be determined to be in compliance with this prohibition if the dischargers are in full compliance with such requirements.

c. Dischargers with NPDES permits, WDRs, or waivers of WDRs that do not contain specific requirements for the control of TRASH are exempt from these TRASH PROVISIONS.

d. Dischargers without NPDES permits, WDRs, or waivers of WDRs must comply with this prohibition of discharge.

e. Chapter IV.A.2.b and Chapter IV.A.4 notwithstanding, this prohibition of discharge applies to the discharge of PREPRODUCTION PLASTIC by manufacturers of PREPRODUCTION PLASTICS, transporters of PREPRODUCTION PLASTICS, and manufacturers that use PREPRODUCTION PLASTICS in the manufacture of other products to surface waters of the State, or the deposition of PREPRODUCTION PLASTIC where it may be discharged into surface waters of the State, unless the discharger is subject to a NPDES permit for discharges of STORM WATER associated with industrial activity.

3. Dischargers Permitted Pursuant to Federal Clean Water Act Section 402(p)

PERMITTING AUTHORITIES shall include the following requirements in NPDES permits issued pursuant to Federal Clean Water Act section 402(p):

a. MS4 permittees with regulatory authority over PRIORITY LAND USES shall be required to comply with the prohibition of discharge in Chapter IV.A.2.a herein by either of the following measures:

(1) Track 1: Install, operate, and maintain FULL CAPTURE SYSTEMS for all storm drains that captures runoff from the PRIORITY LAND USES in their jurisdictions; or

(2) Track 2: Install, operate, and maintain any combination of FULL CAPTURE SYSTEMS, MULTI-BENEFIT PROJECTS, other TREATMENT CONTROLS, and/or INSTITUTIONAL CONTROLS within either the jurisdiction of the MS4 permittee or within the jurisdiction of the MS4 permittee and contiguous MS4 permittees. The MS4 permittee may determine the locations or land uses within its jurisdiction to implement any combination of controls. The MS4 permittee shall demonstrate that such combination achieves FULL CAPTURE SYSTEM EQUIVALENCY. The MS4 permittee may determine which controls to implement to achieve compliance with the FULL CAPTURE SYSTEM EQUIVALENCY. It is, however, the State Water Board's expectation that the MS4 permittee will elect to install FULL CAPTURE SYSTEMS where such installation is not cost-prohibitive.

b. The California Department of Transportation (Department) shall be required to comply with the prohibition of discharge in Chapter IV.A.2.a herein in all SIGNIFICANT TRASH GENERATING AREAS by installing, operating, and maintaining any combination of FULL CAPTURE SYSTEMS, MULTI-BENEFIT PROJECTS, other TREATMENT CONTROLS, and/or INSTITUTIONAL CONTROLS for all storm drains that captures runoff from SIGNIFICANT TRASH GENERATING AREAS. The Department shall demonstrate that such combination achieves FULL CAPTURE SYSTEM EQUIVALENCY. In furtherance of this provision, the Department and MS4 permittees that are subject to the provisions of Chapter IV.A.3.a herein shall coordinate their efforts to install, operate, and maintain FULL CAPTURE SYSTEMS, MULTI-BENEFIT PROJECTS, other TREATMENT CONTROLS, and/or INSTITUTIONAL CONTROLS in SIGNIFICANT TRASH GENERATING AREAS and/or PRIORITY LAND USES.

c. Dischargers that are subject to NPDES permits for discharges of STORM WATER associated with industrial activity (including construction activity) shall be required to comply with the prohibition of discharge in Chapter IV.A.2.a herein by eliminating TRASH from all STORM WATER and authorized non-STORM WATER discharges consistent with an outright prohibition of the discharge of TRASH contained within the applicable NPDES permit regulating the industrial or construction facility. If the

discharger can satisfactorily demonstrate to the PERMITTING AUTHORITY its inability to comply with the outright prohibition of the discharge of TRASH contained within the applicable NPDES permit, then the PERMITTING AUTHORITY may require the discharger to either:

(1) Install, operate, and maintain FULL CAPTURE SYSTEMS for all storm drains that captures runoff from the facility or site regulated by the NPDES permit; or,

(2) Install, operate, and maintain any combination of FULL CAPTURE SYSTEMS, MULTI-BENEFIT PROJECTS, other TREATMENT CONTROLS, and/or INSTITUTIONAL CONTROLS for the facility or site regulated by the NPDES permit. The discharger shall demonstrate that such combination achieves FULL CAPTURE SYSTEM EQUIVALENCY.

Termination of permit coverage for industrial and construction STORM WATER dischargers shall be conditioned upon the proper operation and maintenance of all controls (i.e., FULL CAPTURE SYSTEMS, other TREATMENT CONTROLS, INSTITUTIONAL CONTROLS, and/or MULTI-BENEFIT PROJECTS) used at their facility(ies).

d. A PERMITTING AUTHORITY may determine that specific land uses or locations (e.g., parks, stadia, schools, campuses, or roads leading to landfills) generate substantial amounts of TRASH. In the event that the PERMITTING AUTHORITY makes that determination, the PERMITTING AUTHORITY may require the MS4 to comply with Chapter IV.A.3.a.1 or Chapter IV.A.3.a.2, as determined by the PERMITTING AUTHORITY, with respect to such land uses or locations.

4. Other Dischargers

A PERMITTING AUTHORITY may require dischargers, described in Chapter IV.A.2.c or Chapter IV.A.2.d, that are not subject to Chapter IV.A.3 herein, to implement any appropriate TRASH controls in areas or facilities that may generate TRASH. Such areas or facilities may include (but are not limited to) high usage campgrounds, picnic areas, beach recreation areas, parks not subject to an MS4 permit, or marinas.

5. Time Schedule

The PERMITTING AUTHORITY shall modify, re-issue, or newly adopt NPDES permits issued pursuant to section 402(p) of the Federal Clean Water Act that are subject to the provisions of Chapter IV.A.3 herein to include requirements consistent with these TRASH PROVISIONS. The PERMITTING AUTHORITIES shall abide by the following time schedules:

a. **NPDES Permits Regulating MS4 Permittees that have Regulatory Authority over Priority Land Uses.**[2]

(1) Within eighteen (18) months of the effective date of these TRASH PROVISIONS, for each permittee, each PERMITTING AUTHORITY shall either:

A. Modify, re-issue, or adopt the applicable MS4 permit to add requirements to implement these TRASH PROVISIONS. The implementing permit shall require written notice from each MS4 permittee stating whether it has elected to comply under Chapter IV.A.3.a.1 (Track 1) or Chapter IV.A.3.a.2 (Track 2) and such notice shall be submitted to the PERMITTING AUTHORITY no later than three (3) months from the effective date of the implementing permit, or for MS4s designated after the effective date of these TRASH PROVISIONS, three (3) months from the effective date of that designation. The implementing permit shall also require that within eighteen (18) months of the effective date of the implementing permit or new designation, MS4 permittees that have elected to comply with Track 2 shall submit an implementation plan to the PERMITTING AUTHORITY. The implementation plan shall describe: (i) the combination of controls selected by the MS4 permittee and the rationale for the selection, (ii) how the combination of controls is designed to achieve FULL CAPTURE SYSTEM EQUIVALENCY, and (iii) how FULL CAPTURE SYSTEM EQUIVALENCY will be demonstrated. The implementation plan is subject to approval by the PERMITTING AUTHORITY.

B. Issue an order pursuant to Water Code section 13267 or 13383 requiring the MS4 permittee to submit, within three (3) months from receipt of the order, written notice to the PERMITTING AUTHORITY stating whether such MS4 permittee will comply

[2] The time schedule requirement in Chapter IV.A.5.a.1 requiring MS4* permittees to elect Chapter IV.A.3.a.1 (Track 1) or Chapter IV.A.3.a.2 (Track 2) does not apply to MS4* permittees subject to the Municipal Regional Stormwater NPDES Permit (MRP) issued by the San Francisco Bay Regional Water Quality Control Board (San Francisco Bay Water Board) or the East Contra Costa Municipal Storm Water Permit issued by the Central Valley Regional Water Quality Control Board (Central Valley Water Board) because those permits already require control requirements substantially equivalent to Track 2. The time schedule requirement in Chapter IV.A.5.a.1 requiring MS4 permittees to submit an implementation plan does not apply to the above permittees if the pertinent PERMITTING AUTHORITY determines that such permittee has already submitted an implementation plan prior to the effective date of the TRASH PROVISIONS that is equivalent to the implementation plan required by Chapter IV.A.5.a.1. In the aforementioned permits, the pertinent PERMITTING AUTHORITY may establish an earlier full compliance deadline than that specified in Chapter IV.A.5.a.3.

with the prohibition of discharge under Chapter IV.A.3.a.1 (Track 1) or Chapter IV.A.3.a.2 (Track 2). For MS4s designated after the effective date of these TRASH PROVISIONS, the order pursuant to Water Code section 13267 or 13383 shall be issued at the time of designation. Within eighteen (18) months of the receipt of the Water Code section 13267 or 13383 order, MS4 permittees that have elected to comply with Track 2 shall submit an implementation plan to the PERMITTING AUTHORITY that describes: (i) the combination of controls selected by the MS4 permittee and the rationale for the selection, (ii) how the combination of controls is designed to achieve FULL CAPTURE SYSTEM EQUIVALENCY, and (iii) how FULL CAPTURE SYSTEM EQUIVALENCY will be demonstrated. The implementation plan is subject to approval by the PERMITTING AUTHORITY.

(2) For MS4 permittees that elect to comply with Chapter IV.A.3.a.1 (Track 1), the implementing permit shall state that full compliance shall occur within ten (10) years of the effective date of the first implementing permit except as specified in Chapter IV.A.5.a.5. The permit shall also require these permittees to demonstrate achievement of interim milestones such as an average of ten percent (10%) of the full capture systems installed every year or other progress to full implementation. In no case may the final compliance date be later than fifteen (15) years from the effective date of these TRASH PROVISIONS.

(3) For MS4 permittees that elect to comply with Chapter IV.A.3.a.2 (Track 2), the implementing permit shall state that full compliance shall occur within ten (10) years of the effective date of the first implementing permit except as specified in Chapter IV.A.5.a.5. The permit shall also require these permittees to demonstrate achievement of interim milestones such as average load reductions of ten percent (10%) per year or other progress to full implementation. In no case may the final compliance date be later than fifteen (15) years from the effective date of these TRASH PROVISIONS.

(4) The implementing permit shall state that for MS4 permittees designated after the effective date of the implementing permit, full compliance shall occur within ten (10) years of the effective date of the designation. The permit shall also require such designations to demonstrate achievement of interim milestones such as average load reductions of ten percent (10%) per year or other progress to full implementation.

(5) Where a PERMITTING AUTHORITY makes a determination pursuant to Chapter IV.A.3.d that a specific land use generates a substantial amount of TRASH, that permitting authority has discretion to determine the time schedule for full compliance. In no case may the final compliance date be later than ten (10) years from the determination.

b. **NPDES Permits Regulating the Department.**

(1) Within eighteen (18) months of the effective date of these TRASH PROVISIONS, the State Water Board shall issue an order pursuant to Water Code section 13267 or 13383 requiring the Department to submit an implementation plan to the Executive Director of the State Water Board that: (i) describes the specific locations of its SIGNIFICANT TRASH GENERATING AREAS, (ii) the combination of controls selected by the Department and the rationale for the selections, and (iii) how it will demonstrate FULL CAPTURE SYSTEM EQUIVALENCY.

(2) The Department must demonstrate full compliance with Chapter IV.A.3.b herein within ten (10) years of the effective date of the first implementing NPDES permit, along with achievements of interim milestones such as average load reductions of ten percent (10%) per year. In no case may the final compliance date be later than fifteen (15) years from the effective date of these TRASH PROVISIONS.

c. **NPDES Permits Regulating the Discharges of Storm Water Associated with Industrial Activity (Including Construction Activity).**

Dischargers that are subject to the provisions of Chapter IV.A.3.c herein must demonstrate full compliance in accordance with the deadlines contained in the first implementing NPDES permits. Such deadlines may not exceed the terms of the first implementing permits.

6. Monitoring and Reporting

The PERMITTING AUTHORITY must include monitoring and reporting requirements in its implementing permits. The following monitoring and reporting provisions are the minimum requirements that must be included within the implementing permits:

a. MS4 permittees that elect to comply with Chapter IV.A.3.a.1 (Track 1) shall provide a report to the applicable PERMITTING AUTHORITY demonstrating installation, operation, maintenance, and the Geographic Information System- (GIS-) mapped location and drainage area served by its full capture systems on an annual basis.

b. MS4 permittees that elect to comply with Chapter IV.A.3.a.2 (Track 2) shall develop and implement monitoring plans that demonstrate the effectiveness of the FULL CAPTURE SYSTEMS, MULTI-BENEFIT PROJECTS, other TREATMENT CONTROLS, and/or INSTITUTIONAL CONTROLS and compliance with FULL CAPTURE SYSTEM EQUIVALENCY. Monitoring reports shall be provided to the applicable PERMITTING AUTHORITY on an annual basis, and shall include GIS-mapped locations and drainage area served for each of the FULL CAPTURE SYSTEMS, MULTI-BENEFIT PROJECTS, other TREATMENT CONTROLS, and/or INSTITUTIONAL CONTROLS installed or utilized by the MS4 permittee. In developing the monitoring reports the MS4* permittee should consider the following questions:

(1) What type of and how many TREATMENT CONTROLS, INSTITUTIONAL CONTROLS, and/or MULTI-BENEFIT PROJECTS have been used and in what locations?

(2) How many FULL CAPTURE SYSTEMS have been installed (if any), in what locations have they been installed, and what is the individual and cumulative area served by them?

(3) What is the effectiveness of the total combination of TREATMENT CONTROLS, INSTITUTIONAL CONTROLS, and MULTI-BENEFIT PROJECTS employed by the MS4 permittee?

(4) Has the amount of TRASH discharged from the MS4 decreased from the previous year? If so, by how much? If not, explain why.

(5) Has the amount of TRASH in the MS4's receiving water(s) decreased from the previous year? If so, by how much? If not, explain why.

c. The Department, as subject to the provisions of Chapter IV.A.3.b, shall develop and implement monitoring plans that demonstrate the effectiveness of the controls and compliance with FULL CAPTURE SYSTEM EQUIVALENCY. Monitoring reports shall be provided to the State Water Board on an annual basis, and shall include GIS-mapped locations and drainage area served for each of the FULL CAPTURE SYSTEMS, MULTI-BENEFIT PROJECTS, other TREATMENT CONTROLS, and/or INSTITUTIONAL CONTROLS installed or utilized by the Department. In developing the monitoring report, the Department should consider the following questions:

(1) What type of and how many TREATMENT CONTROLS, INSTITUTIONAL CONTROLS, and/or MULTI-BENEFIT PROJECTS have been used and in what locations?

(2) How many FULL CAPTURE SYSTEMS have been installed (if any), in what locations have they been installed, and what is the individual and cumulative area served by them?

(3) What is the effectiveness of the total combination of TREATMENT CONTROLS, INSTITUTIONAL CONTROLS, and MULTI-BENEFIT PROJECTS employed by the Department?

(4) Has the amount of TRASH discharged from the Department's MS4 decreased from the previous year? If so, by how much? If not, explain why.

(5) Has the amount of TRASH in the receiving waters decreased from the previous year? If so, by how much? If not, explain why.

d. Dischargers that are subject to the provisions of Chapter IV.A.3.c herein shall be required to report the measures used to comply with Chapter IV.A.3.c.

Text of the final Part 1 Trash Provisions proposed to Appendix A: Glossary of the ISWEBE Plan

FULL CAPTURE SYSTEM: A TREATMENT CONTROL, or series of TREATMENT CONTROLS, including but not limited to, a MULTI-BENEFIT PROJECT or a LOWIMPACT DEVELOPMENT CONTROL that traps all particles that are 5 mm or greater, and has a design treatment capacity that is either: a) of not less than the peak flow rate, Q, resulting from a one-year, one-hour, storm in the subdrainage area, or b) appropriately sized to, and designed to carry at least the same flows as, the corresponding storm drain.

[Rational equation is used to compute the peak flow rate: Q = C•I•A, where Q = design flow rate (cubic feet per second, cfs); C = runoff coefficient (dimensionless); I = design rainfall intensity (inches per hour, as determined per the rainfall isohyetal map specific to each region, and A = subdrainage area (acres).]

Prior to installation, FULL CAPTURE SYSTEMS must be certified by the Executive Director, or designee, of the State Water Board. Uncertified FULL CAPTURE SYSTEMS will not satisfy the requirements of these TRASH PROVISIONS. To request certification, a permittee shall submit a certification request letter that includes all relevant supporting documentation to the State Water Board's Executive Director. The Executive Director, or designee, shall issue a written determination approving or denying the certification of the proposed FULL CAPTURE SYSTEM or conditions of approval, including a schedule to review and reconsider the certification. FULL CAPTURE SYSTEMS certified by the Los Angeles Regional Water Board prior to the effective date of these TRASH PROVISIONS and FULL CAPTURE SYSTEMS listed in Appendix I of the Bay Area-wide Trash Capture Demonstration Project, Final Project Report (May 8, 2014) will satisfy the requirements of these TRASH PROVISIONS,

unless the Executive Director, or designee, of the State Water Board determines otherwise.

FULL CAPTURE SYSTEM EQUIVALENCY: The TRASH load that would be reduced if FULL CAPTURE SYSTEMS were installed, operated, and maintained for all storm drains that capture runoff from the relevant areas of land (PRIORITY LAND USES, SIGNIFICANT TRASH GENERATING AREAS, facilities or sites regulated by NPDES permits for discharges of STORM WATER associated with industrial activity, or specific land uses or areas that generate substantial amounts of TRASH, as applicable). The FULL CAPTURE SYSTEM EQUIVALENCY is a TRASH load reduction target that the permittee quantifies by using an approach, and technically acceptable and defensible assumptions and methods for applying the approach, subject to the approval of PERMITTING AUTHORITY. Examples of such approaches include, but are not limited to, the following:

(1) Trash Capture Rate Approach. Directly measure or otherwise determine the amount of TRASH captured by FULL CAPTURE SYSTEMS for representative samples of all similar types of land uses, facilities, or areas within the relevant areas of land over time to identify specific TRASH capture rates. Apply each specific TRASH capture rate across all similar types of land uses, facilities, or areas to determine FULL CAPTURE SYSTEM EQUIVALENCY. TRASH capture rates may be determined either through a pilot study or literature review. FULL CAPTURE SYSTEMS selected to evaluate TRASH capture rates may cover entire types of land uses, facilities, or areas, or a representative subset of types of land uses, facilities, or areas. With this approach, FULL CAPTURE SYSTEM EQUIVALENCY is the sum of the products of each type of land use, facility, or area multiplied by TRASH capture rates for that type of land use, facility, or area.

(2) Reference Approach. Determine the amount of TRASH in a reference receiving water in a reference watershed where FULL CAPTURE SYSTEMS have been installed for all storm drains that capture runoff from all relevant areas of land. The reference watershed must be comprised of similar types and extent of sources of TRASH and land uses (including PRIORITY LAND USES and all other land uses), facilities, or areas as the permittee's watershed. With this approach, FULL CAPTURE SYSTEM EQUIVALENCY would be demonstrated when the amount of TRASH in the receiving water is equivalent to the amount of TRASH in the reference receiving water.

INSTITUTIONAL CONTROLS: Non-structural best management practices (i.e., no structures are involved) that may include, but not be limited to, street sweeping, sidewalk TRASH bins, collection of the TRASH, anti-litter educational and outreach programs, producer take-back for packaging, and ordinances.

LOW-IMPACT DEVELOPMENT CONTROLS: TREATMENT CONTROLS that employ natural and constructed features that reduce the rate of STORM WATER runoff, filter out pollutants, facilitate STORM WATER storage onsite, infiltrate STORM WATER into

the ground to replenish groundwater supplies, or improve the quality of receiving groundwater and surface water. (See Water Code § 10564.)

MULTI-BENEFIT PROJECT: A TREATMENT CONTROL project designed to achieve any of the benefits set forth in section 10562, subdivision (d) of the Water Code. Examples include projects designed to: infiltrate, recharge or store STORM WATER for beneficial reuse; develop or enhance habitat and open space through STORM WATER and non-STORM WATER management; and/or reduce STORM WATER and non-STORM WATER runoff volume.

MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4): Same meaning set forth in 40 Code of Federal Regulations section 122.26(b)(8).

PREPRODUCTION PLASTIC: Same meaning set forth in section 13367(a) of the Water Code.

PRIORITY LAND USES: Those developed sites, facilities, or land uses (i.e., not simply zoned land uses) within the MS4 permittee's jurisdiction from which discharges of TRASH are regulated by these TRASH PROVISIONS as follows:

(1) High-density residential: all land uses with at least ten (10) developed dwelling units/acre.
(2) Industrial: land uses where the primary activities on the developed parcels involve product manufacture, storage, or distribution (e.g., manufacturing businesses, warehouses, equipment storage lots, junkyards, wholesale businesses, distribution centers, or building material sales yards).
(3) Commercial: land uses where the primary activities on the developed parcels involve the sale or transfer of goods or services to consumers (e.g., business or professional buildings, shops, restaurants, theaters, vehicle repair shops, etc.)
(4) Mixed urban: land uses where high-density residential, industrial, and/or commercial land uses predominate collectively (i.e., are intermixed).
(5) Public transportation stations: facilities or sites where public transit agencies' vehicles load or unload passengers or goods (e.g., bus stations and stops).

Equivalent alternate land uses: An MS4 permittee with regulatory authority over PRIORITY LAND USES may issue a request to the applicable PERMITTING AUTHORITY that the MS4 permittee be allowed to substitute one or more land uses identified above with alternate land uses within the MS4 permittee's jurisdiction that generates rates of TRASH that is equivalent to or greater than the PRIORITY LAND USE(S) being substituted. The land use area requested to substitute for a PRIORITY LAND USE need not be an acre-for-acre substitution but may involve one or more PRIORITY LAND USES, or a fraction of a PRIORITY LAND USE, or both, provided the total TRASH generated in the equivalent alternative land use is equivalent to or greater than the total TRASH generated from the PRIORITY LAND USE(S) for which substitution is requested. Comparative TRASH generation rates shall be established through the reporting of quantification measures such as street sweeping and catch basin cleanup records; mapping; visual trash presence surveys, such as the "Keep America

Beautiful Visible Litter Survey"; or other information as required by the PERMITTING AUTHORITY.

PERMITTING AUTHORITY: The State Water Board or Regional Water Board, whichever issues the permit.

SIGNIFICANT TRASH GENERATING AREAS: All locations or facilities within the Department's jurisdiction where TRASH accumulates in substantial amounts, such as:

(1) Highway on- and off-ramps in high density residential, commercial, and industrial land uses (as such land uses are defined under PRIORITY LAND USES-herein).
(2) Rest areas and park-and-rides.
(3) State highways in commercial and industrial land uses (as such land uses are defined under PRIORITY LAND USES herein).
(4) Mainline highway segments to be identified by the Department through pilot studies and/or surveys.

STORM WATER: Same meaning set forth in 40 Code of Federal Regulations section 122.26(b)(13) and 55 Federal Register 47990, 47995 (Nov. 16, 1990).

TREATMENT CONTROLS: Structural best management practices to either (a) remove pollutants and/or solids from STORM WATER runoff, wastewater, or effluent, or (b) capture, infiltrate or reuse STORM WATER runoff, wastewater, or effluent. TREATMENT CONTROLS include FULL CAPTURE SYSTEMS and LOW-IMPACT DEVELOPMENT CONTROLS.

TRASH: All improperly discarded solid material from any production, manufacturing, or processing operation including, but not limited to, products, product packaging, or containers constructed of plastic, steel, aluminum, glass, paper, or other synthetic or natural materials.

TRASH PROVISIONS: The water quality objective for TRASH, as well as the prohibition of discharge and implementation requirements set forth in Chapter IV.A herein.

APPENDIX F: RESPONSE TO PUBLIC COMMENTS ON THE DRAFT STAFF REPORT, INCLUDING THE DRAFT SUBSTITUTE ENVIRONMENTAL DOCUMENTATION AND DRAFT TRASH AMENDMENTS

Comment Letter	Commenter(s)	Submitted by
Comment Letters Submitted by the August 5, 2014 Comment Deadline		
1	American Chemistry Council	Tim Shestek
2	American Cleaning Institute Association of Postconsumer Plastic Recyclers Biodegradable Products Institute Building Owners and Managers Association of California California Business Properties Association California Chamber of Commerce California Manufacturing Technology Association California Restaurants Association California Retailers Association Consumer Specialty Products Association International Council of Shopping Centers Los Angeles Area Chamber of Commerce Los Angeles County Business Federation NAIOP of California, the Commercial Real Estate Development Association National Federation of Independent Business NatureWorks Pactiv SPI, the Plastics Industry Trade Association Valley Industry & Commerce Association Western Plastics Association	Cliff Moriyama

3	Association of Compost Producers	Dan Noble
4	Bay Area Stormwater Management Agencies Association	Matt Fabry James Scanlin Tom Dalziel Kevin Cullen Terri Fashing Jamison Crosby Adam Olivieri Pat Gothard Lance Barnett
5	California Building Industry Association	Richard Lyon
6	California Coastkeeper Alliance Heal the Bay 7th Generation Advisors Clean Water Action Algalita Natural Resources Defense Council The Surfrider Foundation Sierra Club California Team marine Turtle Island Restoration Network Environment California WeTap Planning and Conservation League Endangered Habitats League Coastal Environmental Rights Foundation Azul California Sportfishing Protection Alliance The Lake Merritt Institute	Sean Bothwell Kirsten James Leslie Tamminen Miriam Gordon Marieta Francis Karen Garrison Angela Howe Annie Pham Benjamin Kay Todd Steiner Nathan Weaver Evelyn Wendel Rebecca Crebbin-Coates Dan Silver Livia Borak Marce Gutierrez Bill Jennings

	The Center for Oceanic Awareness, Research, and Education WILDCOAST Friends of Harbors, Beaches, and Parks Klamath-Siskiyou Wildlife Center Russian River Watershed Protection Committee Plastic Pollution Coalition Earth Law Center CLEAN South Bay California Coastal Protection Network Californians Against Waste Center for Biological Diversity 5 Gyres Coast Action Group	Dr. Richard Bailey Christopher Chin Zach Plopper Jean Watt Joseph Vaile Brenda Adelman Dianna Cohen Linda Sheehan Trish Mulvey Susan Jordan Sue Vang Emily Jeffers Stiv Wilson Alan Levine
7	California Coastkeeper Alliance	Sean Bothwell
8	California Department of Transportation	G. Scott McGowen
9	California Restaurant Association California Retailers Association	Kara Bush Mandy Lee
10	California Stormwater Quality Association	Gerhardt Hubner
11	Calleguas Creek Watershed Stakeholders	Lucia McGovern
12	Cities of Alhambra, Bell Gardens, Burbank, Calabasas, Commerce, Downey, Glendale, La Canada Flintridge, Monrovia, Monterey Park, Paramount, Pico Rivera, Signal Hill, South Gate, South Pasadena, and Vernon	Steve Myrter
13	City of Burbank	Daniel Rynn

14	City of Camarillo	Bruce Feng
15	City of Capitola	Steven Jesberg
16	City of Chula Vista	Khosro Aminpour
17	City of Cupertino	Timm Borden
18	City of Del Mar	Mikhail Ogawa
19	City of Encinitas	Glenn Pruim
20	City of Escondido	Edward Domingue
21	City of Folsom	David Miller
22	City of Irvine	Eric Tolles
23	City of La Mesa	Brian Philbin
24	City of Lodi	F. Wally Sandelin
25	City of National City	Stephen Manganiello
26	City of Orange	John Sibley
27	City of Palo Alto	Ken Torke
28	City of Roseville	Susan Rohan
29	City of Sacramento	Sherill Huun
30	City of San Diego, Transportation & Storm Water Department	Drew Kleis

31	City of San Jose	Napp Fukuda
32	City of Santa Clarita	Heather Merenda
33	City of Santa Maria	Richard Sweet
34	City of Santa Rosa	David Guhin
35	City of Santee	Pedro Orso-Delgado
36	City of Signal Hill	Kenneth Farfsing
37	City of South Lake Tahoe	Ray Jarvis
38	City of Stockton County of San Joaquin	C. Mel Lytle Gerardo Dominguez
39	City of Sunnyvale	John Stufflebean
40	City of Walnut Creek	Heather Ballenger
41	Construction Industry Coalition on Water Quality	Mark Grey
42	Contech Engineered Solutions	Vaikko Allen II
43	County of El Dorado	Brendan Ferry
44	County of Orange and the Orange County Flood Control District	Chris Crompton
45	County of San Diego	Cid Tesoro
46	County of Santa Barbara Public Works Department	Joy Hufschmid

47	County of Yuba	Michael Lee
48	Dart Container Corporation of California	Jonathan Choi
49	Downey Brand Attorneys LLP on behalf of the Port of Stockton	Melissa Thorme
50	General Public	Dana Booth
51	General Public	Janet Cox
52	General Public	Joyce Dillard
53	Marin County Stormwater Pollution Prevention Program on behalf of its local government member agencies: Belvedere, Corte Madera, County of Marin, Fairfax, Larkspur, Mill Valley, Novato, Ross, San Anselmo, San Rafael, Sausalito, and Tiburon	Terri Fashing
54	Merced County	Dana Hertfelder
55	Napa County Flood Control and Water Conservation District	Philip Miller
56	Partnership for Sound Science in Environmental Policy	Craig Johns
57	Riverside County Flood Control and Water Conservation District	Jason Uhley
58	Roscoe Moss Company	Kevin McGillicuddy
59	Sacramento Stormwater Quality Partnership	Dana Booth

60	San Diego Unified Port District	Jason Giffen
61	San Francisco Bay Area Rapid Transit District	Gary Jensen
62	San Luis Obispo County Department of Public Works	Mark Hutchinson
63	Santa Clara Valley Urban Runoff Pollution Prevention Program	Adam Olivieri
64	Save the Bay	David Lewis
65	Save The Plastic Bag Coalition	Stephen Joseph
66	Solano County Department of Resource Management	Nathan Newell
67	SPI, The Plastics Industry Trade Association	Jane Adams
68	Statewide Stormwater Coalition	Susan Rohan Tricia Wotan Paul Saini David Mohlenbrok Jason Rhine Robert Ketley Greg Meyer Staci Heaton Edward Kreins John Presleigh Ken Grehm Maria Hurtado Mark Hutchinson Stephen Schwabauer

69	StopWaste	Debra Kaufman
70	Surfrider Foundation	Angela Howe
71	Surfrider Foundation Individual Members (This comment letter is a copy of the same form letter or of similar text that the SWRCB received from other individuals that totaled approx.~1041)	Sarah Spinuzzi
72	Union Pacific Railroad	Liisa Stark
73	United States Environmental Protection Agency, Region 9	John Kemmerer
74	University of California	Robert Charbonneau
75	Ventura Countywide Stormwater Quality Management Program	Gerhardt Hubner
76	Water Resources Management	Roger James
Comment Letters Submitted after the August 5, 2014 Comment Deadline		
77	California Coastal Commission	Charles Lester
78	California Department of Transportation – Letter Dated November 7, 2014 letter from G. Scott McGowen to Diana Messina	G. Scott McGowen
79	Contra Costa Clean Water Program	Beth A. Baldwin

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1 General Response	The American Chemistry Council's letter includes a number of reasons why they oppose "regulatory source controls," or specifically, product bans. These objections include generally include the following: • Regulatory source controls will result in a defacto statewide ban on bags and food containers. • Economic impact of product bans is significant and should be evaluated. • Product bans are ineffective. • Other controls should be incentivized over product bans. • The State Water Board lacks authority to implement product bans through MS4 permits. • Neither the Clean Water Act, nor related guidance documents authorize product bans. • Product bans are unconstitutional.		Regulatory source control was included in the proposed amendment as one of several treatment controls that could be utilized by MS4 permittees with regulatory control over priority land uses to comply with the prohibition of trash under Track 2. However, subsequent to the State Water Board's public workshop and the public hearing on the proposed Trash Amendments, Senate Bill (SB) 270 (2014 Stats. Ch. 850) was enacted. That new law enacts a state-wide plastic bag carry-out ban pertaining to grocery stores and pharmacies that have a specified amount of sales in dollars or retail floor space, which goes into effect July 1, 2015, and imposes the same ban on convenience stores and liquor stores a year later. (See Final Staff Report, at Section 6.17 (discussing Regulatory Source Controls and the enactment of SB 270).) Subsequent to the enactment of SB 270, opponents qualified a referendum on the law, delaying its July 1, 2015 effective date until the November 2016 elections, which would require a majority of votes for the referendum to succeed. As discussed in greater detail in the Final Staff Report (at Section 6.17) the new law will implement the product single-use plastic bag ban, which was generally the type of regulatory source control contemplated by the State Water Board and discussed with the public with regard to consideration of the time extension option. (See Final Staff Report at Section 6.15 (discussing the time extension issue).) Single use plastic bag bans are not anticipated to be enacted as ordinances in response to the Trash Amendments because (1) Senate Bill 270 has already enacted a mandatory statewide single use plastic bag ban, (2) the upcoming referendum on Senate Bill 270 won't succeed without a statewide majority vote, and (3) approximately 140 cities and counties have already adopted similar bans, which reflects a significant level of popular support for such bans. If, however, a permittee were to adopt a single use plastic bag ban or other ban as a means of complying with Track 2, it is expected that any such bans

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			would be enacted in a manner similar to those previously adopted, in that they would not result in product substitutions or any significant environmental impacts. As with previously-adopted bans, the impacts of any new bans would be evaluated by the permittee. The courts have already upheld the use of negative declarations or categorical exemptions from CEQA for single use plastic bag bans. As a result, this Final Staff Report does not provide an environmental analysis of a ban on single use plastic bags. As a result of the above-noted revisions to the Trash Amendments, many of the objections contained in the American Chemistry Council letter (as summarized in Comment 1 and all relating to product bans as a method to comply with Track 2 and the time extension) are no longer applicable to the proposed final Trash Amendments. Therefore, the State Water Board will not respond further to commenter's arguments in support of such objections.
1.1	Authorizing and incentivizing product bans or other regulatory source controls as a means to comply with the State's water quality control plan is arbitrary, capricious, and unsupported by the record because product bans are ineffective in reducing trash loads.		Regulatory source controls, including product bans, and the contemplated time extensions allowed for implementation of regulatory source controls, have been omitted from the final proposed Trash Amendments. See the General Response to Comment 1. However, the Trash Amendments are focused on effective methods to reduce the discharge of trash to receiving water bodies. Specifically, the monitoring and reporting requirements for Track 2 direct that monitoring plans demonstrate the effectiveness of controls and compliance with full capture system equivalency. (Ocean Plan Amendment III.L.4.b; Part I ISWEBE IV.A.5.b.) Full capture system equivalency is the trash load that would be reduced if Track 1 was implemented. (Ocean Plan Amendment and Part I ISWEBE, Definition, "Full capture system equivalency.") Thus, the Trash Amendments are clear and support that the treatment and institutional controls that are used by a permittee to comply with the prohibition of discharge for trash are effective at reducing trash

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			loads to receiving water bodies.
1.2	Authorizing and incentivizing municipalities to ban useful products as part of an MS4 NPDES permit would violate the Clean Water Act and is not authorized under its provisions. NPDES permit conditions must have a direct nexus to the discharge of a pollutant. By contrast, product bans are ordinances that would regulate the upstream sale or distribution of a useful product that is used for its lawful, intended purpose. Congress did not expressly authorize product bans under the MS4 provisions, and it is unreasonable to infer that Congress implicitly authorized environmental agencies to use the CWA to regulate broad swaths of the U.S. economy in the name of pollution control far upstream from any potential discharges.		Regulatory source controls, including product bans, and the contemplated time extensions allowed for implementation of regulatory source controls, have been omitted from the final proposed Trash Amendments. See the General Response to Comment 1. Additionally, the State Water Board is not authorizing municipalities to undertake any action they are not already authorized to take. Further, while Congress clearly did not expressly authorize product bans under the MS4 provisions, with Clean Water Act 402, subsection (p), Congress expressly authorized the State to require controls in permits for discharges associated with MS4 to reduce the discharge of pollutants to the maximum extent practicable, including but not limited to management practices, control techniques, and any other provisions the State determines appropriate for the control of such pollutants. The MS4 permittee has the discretion to elect whether, and what extent, it will establish full capture systems, multi-benefit projects, other treatment controls, and/or institutional controls within its jurisdiction to comply with the prohibition of trash and the provisions of the Trash Amendments (Ocean Plan Amendment at III.L.2.a; Part I ISWEBE at IV.A.3.a).
1.3	The Proposed Amendments lack consideration of economic impacts and violate the California Environmental Quality Act. The Draft Staff Report and Proposed Amendments make clear that bans on plastic bags and polystyrene foam food containers will frequently be included in MS4 permits.		See General Response to Comment 1. “Regulatory source controls” was included in the proposed Trash Amendments as one of the several treatment controls that could be utilized by MS4 permittees with regulatory authority over priority land uses to comply with the prohibition of trash under Track 2. “Regulatory source controls” have been removed from the Trash Amendments. Similar to the prior draft, however, the proposed Final Staff

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	However, the SED does not include product bans as a reasonably foreseeable compliance option and, therefore, does not evaluate their environmental impacts or those of alternative approaches. This error is not harmless, as substitute products such as paper bags and bio-plastics have very significant environmental impacts.		Report retains "institutional controls" as a permissible method an MS4 permittee could employ to comply with Track 2. The proposed final Trash Amendments' definition for "institutional controls" includes "ordinances": > Institutional controls are non-structural best management practices (i.e., no structures are involved) that may include, but not be limited to, street sweeping, sidewalk trash bins, collection of the trash, anti-litter educational and outreach programs, producer take-back for packaging, and ordinances. Pursuant to that definition, a permittee's enactment of an ordinance remains an allowable type of institutional control which may be implemented to comply with Track 2, even though the proposed final Trash Amendments removed "regulatory source controls" as a permissible method. Yet, any such ordinance likely would not involve a product ban, particularly those involving substitution of product. Contrary to ordinances or laws which prohibit distribution of plastic carry-out bags, which are typically accompanied with requirements and/or incentives to utilize reusable bags to avoid a product-substitution effect (such as SB 270), other types of product bans enacted by ordinance may not result in reduced trash generation if such product substitution would be discarded in the same manner as the banned item. Any such product ban would not reduce trash and would not be an allowable Track 2 compliance method. (See Final Staff Report at Section 5.0, 5.2.5, and 6.17; see also Final Staff Report at App. A-18 to A-20 ("Current Efforts to Address Concerns Related to Trash in California Waters").) Therefore, the proposed Final Staff Report does not provide an environmental or economic analysis of ordinances banning products because such bans are not a reasonably foreseeable method with which a permittee could comply with the trash prohibition. It is possible that an MS4 permittee's adoption of other types of ordinances (e.g., anti-litter laws or bans on

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			smoking), may still be a reasonably foreseeable method of compliance, but those types of ordinances are not expected to cause potential environmental impacts through use of replacement products or through other indirect impacts. The other types of institutional controls (e.g., street sweeping, sidewalk trash bins, collection of the trash, etc.) available for a permittee to comply with the trash prohibition under Track 2 are evaluated in Section 5.2 and in Section 6 of the proposed final Staff Report.
1.4	By attempting to use the regulatory source control option to single out plastic and polystyrene products for local bans under the regulatory source control the proposal raises several constitutional concerns. The proposal would violate the dormant Commerce Clause by placing a significant economic burden on interstate commerce without providing any local benefit at all. The proposal would also violate the Equal Protection clause because there is no rational basis for singling out plastic bags and polystyrene foam food containers for bans when those bans would be ineffective. Finally, by failing to provide any standard to distinguish between effective and ineffective regulatory source controls, the Proposed Amendments violate the Due Process Clause and are void for vagueness. The Board offers no guidance to permit writers on how to distinguish between potentially effective ordinances that could		See the General Response to Comment 1 and Responses to Comments 1.2 and 1.3. Based on the revisions and discussions noted therein, commenter's underlying arguments are not applicable to the Trash Amendments which will be considered for adoption by the Board. Even if the Trash Amendment included regulatory source control or product bans as a permissible method to comply with Track 2, however, and SB 270 was not in effect, such proposal does not raise objections pursuant to equal protection, due process, and (dormant) commerce clauses of the United States Constitution. First, to be clear, the State Water Board would not be establishing such ban by ordinance, a permittee would be enacting it pursuant its applicable authority to do so. Second, the State Water Board's Trash Amendments are authorized by federal law and state law. Any proposal that would qualify under Track 2 an MS4's enactment of a product ban would not treat similarly situated persons or entities differently but would be controlling trash and, therefore, does not raise equal protection concerns. Such a ban would have a rational purpose of controlling trash to comply under Track 2. At this time, however, and as discussed in the General Response and Response to Comment 1.3, the State Water Board does not reasonably foresee an MS4's establishment of a product ban as an ordinance that control trash under Track 2.

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	theoretically be included in a NPDES permit and those that are ineffective and should be excluded from the program.		The dormant commerce clause of the United States Constitution is implicated where a state law discriminates against interstate commerce in favor of intra-state commerce (i.e., an implied substantive restriction on permissible state regulation of interstate commerce). No violation of the dormant commerce clause exists where the state law treats out-of-state commerce the same as in-state-commerce. If a permittee were to adopt an ordinance to ban a product, that ordinance would apply whether the manufacturer was located in-state or out-of-state. Due process of law is violated where a statute, regulation, or ordinance prohibits or requires the doing of an act which is so vague that a person must guess as its meaning. The Trash Amendments neither compel nor forbid an MS4 to establish specific trash treatment controls. "Regulatory source controls" was included in the proposed Trash Amendments as one of the several treatment controls that could be utilized by MS4 permittees with regulatory authority over priority land uses to comply with the prohibition of trash under Track 2. "Regulatory source controls" have been removed from the Trash Amendments. Therefore, permit writers would not be making the determination of the effectiveness of a "regulatory source controls" for Track 2. Excluding regulatory source controls, any combination of treatment and institutional controls that are used to implement Track 2, permittees must demonstrate that the combination of the controls achieve full capture system equivalency. (See Ocean Plan Amendments III.L.2.a.2; Part I ISWEBE Plan IV.A.3.a.2; Definition of "full capture system equivalency.") Thus the combination of controls that are implemented must reduce the discharge of trash to the same load that would be reduced if full capture systems were installed, operated, and maintained for all storm drains that capture runoff from priority land uses. Full capture system equivalency must be demonstrated through the monitoring plans. (See Ocean Plan Amendments III.L.5.b; Part I ISWEBE Plan IV.A.6.b.)

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			Additionally, see Response to Comment 6.2.
2.1	The Trash Amendments are aimed to reduce trash. The Commenters fail to see how a local ordinance without any corresponding restriction on likely replacement products will lead to reduction of trash. Rewarding the adoption of local ordinance that restrict the use of a certain material type or specific type of packaging is inappropriate and legally indefensible. Full capture systems as outlined under the "Track 1" compliance option appear to offer the most effective solution in preventing all forms of trash from entering the state's waterways.		Please see General Response to Comment Letter 1 and Comment 1.2.
2.2	Local Ban ordinances can have both economic and environmental impacts that should not be overlooked by the board.		Please see General Response to Comment Letter 1 Response and Comment 1.2.
3.1	Extend the “Comment Period” for a few months and develop a series of collaborative meetings so that the compost industry working with local jurisdictions, the recycling industry, CalRecycle and the Water Board can have sufficient time to understand and provide clear and compelling input into the Trash Amendments. Since it took over a year to draft these amendments in isolation from industry, communities and other state agencies, a few more months to craft a better product seems well		The proposed Trash Amendments have been in development since 2010 and have involved extensive stakeholder input from the multi-year efforts of the Public Advisory Group and the Focused Stakeholder Meetings in the spring of 2013. Additionally, State Water Board staff considered the comments from all stakeholders at the public workshop on July 16, 2014, public hearing on August 5, 2014, and 78 comment letters. The goal is to create Trash Amendments that lead to reduction of trash in state waters and enhances creativity and collaboration between stakeholders. (See Final Staff Report Section 2.14.)

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	worth the time, to achieve a better, more acceptable result.		
3.2	Define and harmonize any of the alternative definitions related to the Trash Amendments, e.g. “trash,” “waste”, “litter”, etc.		The definition of “trash” proposed in the Trash Amendments harmonizes the definition of "waste" from the California Water Code and the definition of "litter" from the California Government Code. Please refer to Section 4.1 the proposed Final Staff Report for additional discussion.
3.3	To date the Water Board hasn’t engaged with the organics industry, nor directly with CalRecycle, on the specific crafting of these Trash Amendments. The Water Board would be well served to engage with the organics and general recycling industry directly on this issue, prior to promulgating these Trash Amendments.		The State Water Board has engaged with CalRecycle on the crafting of the Trash Amendments, and regrets that the organics industry was not part of the focused stakeholder meetings. The State Water Board is encouraged that the organics industry was able to submit a comment letter and wishes to work with the organics industry in the implementation of the Trash Amendments.
3.4	Receive input that gathers the best industry, community and state agency thinking regarding the key elements of Trash Amendment ideas on how to control trash that ends up in the water ways, emanating from residential, public, commercial, industrial and agricultural lands.		Please see response to Comment 3.1.
4.1	Consistency between Prohibition of Discharge and Water Quality Objective - In accordance with the California Water Code, the State Water Board’s proposed Water Quality Objective (WQO) for trash correctly recognizes that trash in discharges in “amounts that adversely affect beneficial uses or cause nuisance” should be		See Response to Comment 10.9. The Trash Amendments are structured to establish a narrative water quality objective for trash and a prohibition of discharge of trash. The narrative water quality objective would be implemented through the prohibition and conditional prohibition of discharge. In the case of BASMAA and its member agencies, implementation is though a conditional prohibition. The Trash Amendments specify that that permittees in full

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	regulated. However, as drafted, the State Water Board's proposed Prohibitions of Discharges for Trash do not include language corresponding to this aspect of the WQO and could be misinterpreted to apply literally to any and all trash. This is inconsistent with the Water Code's charge that State Water Quality Control Plans and implementation requirements be economically reasonable and technically feasible and has potentially significant resource demands and adverse enforcement implications for the regulated community. Recommendation - The State Water Board should provide consistency between the WQO and prohibitions by revising the trash prohibitions to include language that qualify that the trash discharges being prohibited and controlled by the specified implementation requirements, is the trash "in amounts that cause impairment of beneficial uses or conditions of nuisance in receiving waters."		compliance with the trash-specific permit terms for the control of trash will then be deemed in compliance with prohibition of discharge. (Ocean Plan Amendment at III.I.6.a; Part I ISWEBE at IV.A.2.a.) The Trash Amendments do not specify that compliance with the conditional prohibition is equivalent to compliance with effluent limitations for the water quality objective for trash. The conditional prohibition includes consideration of feasibility by focusing trash on high trash generating areas and multiple compliance tracks. (Staff Report at Sections 2.3 and 2.4.1 (pp. 13-15).)
4.2	The State Water Board should allow all Phase I Section 402(p) permittees under the jurisdiction of the San Francisco Bay Regional Water Board to effectuate compliance with the trash prohibitions and address the WQO for trash through the trash-specific reduction requirements in the MRP and its successor	Track 3: For applicable MS4* permittees under the jurisdiction of the Municipal Regional Permit (MRP) issued by the San Francisco Bay Regional Water Quality Control Board, install, operate, maintain any	The State Water Board worked with San Francisco Bay Water Board staff to craft and ensure that Track 2 language would be compatible with existing and future San Francisco Bay Municipal Regional Stormwater Permit (MRP) conditions. (See, for example, Response to Comment 4.3.) As the trash control provisions exist in the MRP, they represent a Track 2 approach that will likely be replicated by other MS4 Phase I permittees across California, specifically with the combination of treatment and institutional controls and mapping for trash

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	provisions that are already under discussion. This recommendation is consistent with recommendations presented by nongovernmental organizations and other stakeholders at the State Water Board's July 16th Trash Policy Workshop, and effectively would allow applicable Bay Area permittees to continue implementation consistent with the MRP. The State Water Board should revise the amendments to provide an alternative (Track 3) to allow for compliance to be achieved via continued implementation of the trash-specific provisions in the MRP.	combination of full capture systems*, other treatment controls*, institutional controls*, and/or multi-benefit projects* within either the jurisdiction of the MS4* permittee or within the jurisdiction of the MS4* permittee and contiguous MRP permittees in a phased and prioritized approach that focuses on high trash generation areas that contribute Trash* to storm drains in their jurisdiction as further specified in the trash-specific provisions of the MRP and implementation plans developed by the permittees thereunder. This provision shall apply to MS4* permits that are successors to the current MRP if the San Francisco Bay Regional Water Board finds in adopting the successor permit that the trash specific provisions of such successor permits are consistent with the requirements of the	generation areas. The MRP time schedule and reporting requirements, specifically the Short Term and Long Term Trash Reduction Plans, should be compatible within the framework of the Trash Amendments. As such, the State Water Board does not believe a creation of a Track 3 for MRP permittees is necessary. The proposed Trash Amendments were modified to specify that MRP permittees are exempt from electing Track 1 or Track 2 as the trash control requirements are substantially equivalent to Track 2. Additionally to reduce duplicative efforts for MRP permittees, the proposed final Trash Amendments include a provision to allow the San Francisco Bay Water Board to determine if the implementation plan a MRP permittee has submitted is equivalent to the implementation plan required by the Trash Amendments. (See, for example, Ocean Plan Amendment fn. 2; Part I ISWEBE fn. 2.) Finally, the final compliance date is being revised in recognition of the intensive efforts taken by the MRP permittees since 2009. (Ocean Plan Amendment at fn. 2; Part I ISWEBE at fn. 2.)

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		Trash* Prohibition implementation requirements set forth herein, including the time schedules set forth in Sections 4[or 5].a.(3) and (4) and Section 5 [or 6] below and appropriate monitoring and reporting provisions.	
4.3	Immediately grandfather into the certification process those devices previously “approved” by San Francisco Bay Regional Water Board staff as full capture systems that are installed or in the process of being installed in the Bay Area prior to adoption of the amendments, or immediately certify all devices “approved” by San Francisco Bay Regional Water Board staff. Additionally, revise the amendments to indicate that any treatment device that meets the stated criteria fulfills the certification requirement, regardless of whether a device has or has not been certified by the State Water Board.		The State Water Board agrees that full capture systems previously "approved" by the San Francisco Bay Water Board staff should fulfill the certification requirement of a full capture system in the Trash Amendments. It is not the intent for installed and properly operating full capture systems to be removed as a result of the Trash Amendments. Resources should be efficiently directed towards effective treatment controls to capture and remove trash. The proposed final Trash Amendments language for the definition of “full capture system” has been modified to specify that "full capture systems listed in Appendix I of the Bay Area-wide Trash Capture Demonstration Project, Final Project Report (May 8, 2014)" prior to the effective date of the Trash Amendments, will satisfy the requirement of the Trash Amendments. These full capture systems can be found at: http://www.sfestuary.org/wp-content/uploads/2014/05/AppendixI.DevicesOffered.pdf

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4.4	Revise the definition of "high trash generating areas" to allow permittees the option of identifying geographical areas within their municipality that generate problematic levels of trash, regardless of land use.		The proposed language already includes the flexibility the commenter is seeking. The Trash Amendments define priority land uses as land uses that are actually developed (i.e., not simply zoned) as high density residential, industrial, commercial, mixed urban, and public transportation stations. In addition, the definition of priority land uses already provides that a MS4 may request that its permitting authority approve an equivalent alternative land use (i.e., an alternative to a land use(s) listed above). The intent of "alternate equivalent land uses" is to allow MS4s to allocate trash-control resources to the developed areas that generate the highest sources of trash. (See Ocean Plan Amendment and Part I ISWEBE definition for "alternate equivalent land uses" within the "priority land uses" definition.) As "priority land uses" is defined, the "equivalent alternate land use" can be utilized in as an alternative to a priority land use. As "equivalent alternate land use" is part of the priority land use definition, the State Water Board does not think the suggested language is necessary.
4.5	The proposed trash amendments should better account for the benefit of true source control actions that local municipalities initiate or participate. Additionally, time extensions should be granted to municipalities for participating with other local governments in statewide initiatives to advocate for legislation and industry cooperation in the development of product redesign, packaging redesign, take-back programs, and deposit legislation.		Regulatory source controls have been omitted from the final proposed Trash Amendments. The development of source controls by the State Water Board as suggested by the commenter, which include but are not limited to the development of product redesign, packaging redesign, take-back programs, is outside the scope of these Trash Amendments. See also the General Response to Comment Letter 1 and response to Comment 1.2.

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4.6	Continue to provide flexibility in the methods used to demonstrate Track 1 or 2 performances. Permittees should be allowed to implement cost-effective methods to demonstrate performance equivalency. Remove the requirement for submittal of GIS data to the State Water Board on trash control measure implementation. Provide guidance, outside of the amendments and in collaboration with the Proposition 84 grant funded Tracking California's Trash project managed by BASMAA, on the types and formats of GIS data that should be submitted by permittees, consistent with NPDES permits. Revise the monitoring questions to remove receiving water monitoring.		The monitoring and reporting provisions in the proposed Trash Amendments are minimum requirements that must be included with the implementing permits. Similar to the Track implementation provisions, as there will be many unique implementation approaches, the monitoring and reporting approach should provide flexibility to demonstrate compliance with the prohibition of discharge for trash. However, statewide consistency in monitoring and reporting needs to be provided to permitting authorities and permittees. The balance between the need for consistency and flexibility is achieved through standardized objectives in the monitoring program. The Trash Amendments aim to establish minimum monitoring and reporting provisions, but the Water Boards may include more extensive provisions in implementing permits. MS4 permittees complying under Track 1 would provide a report to the applicable Water Board demonstrating installation, operation, and maintenance of full capture systems on an annual basis. MS4 permittees complying under Track 2 would develop and implement annual monitoring plans to demonstrate implementation and effectiveness of trash controls and compliance with full capture system equivalency. Since there are a variety of existing monitoring programs and there are new programs in development, the Trash Amendments propose a set of monitoring objectives modeled after the Standard Monitoring Procedures in Appendix III of the California Ocean Plan. These objectives include location data for installed control equipment and assessments of program effectiveness such as trash removed and condition of the receiving water. Such data is essential for effective assessment and management of control programs. Using a questions-based approach provides flexibility to the

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			permit writers to select the most relevant monitoring techniques and expectations for their respective permits. Based on the comments, the proposed final Trash Amendments have been modified to make question-based approach discretionary and removed the requirement for receiving water monitoring component. The State Water Board supports incorporating Proposition 84 Grant funded Tracking California's Trash Project as part of the technical advisory group. Staff believes this project may provide trash monitoring guidance statewide and benefit the flexibility provided in the monitoring and reporting provisions in the proposed final Trash Amendments. (Ocean Plan Amendment at III.I.5.b; Part I ISWEBE at IV.I.6.b.)
4.7	Based on the economic analysis conducted by the State Water Board, Bay Area municipalities should anticipate between $22 - $58 million will be needed to be spent each year for the next 10 years to implement the proposed amendments. BASMAA recommends that the State Water Board partner with permittees to explore the creation of a non-competitive program to fund trash control measures. One such program that could serve as an example is the Used Oil Payment Program (OPP). The California Oil Recycling Enhancement Act provides funding to assist local governments in maintaining an ongoing used oil and used oil filter collection/recycling program for their		The State Water Board appreciates this suggestion for trash control. Creating such a non-competitive program would require legislative action to establish the fee program, which involves a bill approval process. If such a program was enacted, the State Water Board would need to manage the program and acquire legal and budgetary authority to accept and spend the fund. At the present, it is outside of the scope of the Trash Amendments for the State Water Board to create such a program. With the Storm Water Strategic Initiative, the State Water Board aims to improve program efficiency and effectiveness by providing more assistance to overcoming funding barriers. The State Water Board provides financial assistance through various State and federal loan and grant programs to help local agencies, businesses, and individuals meet the costs of water pollution control. The Public Resources Code requires that the Proposition 84 Storm Water Grant Program funds are used to provide matching grants to local public agencies for the reduction and prevention of storm water contamination to rivers, lakes, and streams. Please visit the following website

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	communities. The OPP is funded by a state tax on automotive oil. Another example is the program that exists for automobile tires. A fee is paid at purchase to fund the proper disposal at the end of the tire's life.		for more information: http://waterboards.ca.gov/water_issues/program/grants_loans/prop84/index.shtml Additional financial assistance information including information on the Clean Water State Revolving Fund loans, is available at: http://www.waterboards.ca.gov/water_issues/programs/grants_loans/ CalRecycle administers funding programs to assist with waste disposable, specifically reducing beverage container litter in the waste stream. Information on the Beverage Container Recycling Grants is available at: http://www.calrecycle.ca.gov/bevcontainer/grants/
5.1	Track 1 is infeasible and Track 2 uncertain for construction dischargers. This kind of uncertainty in process is concerning. The current prohibition on the discharge of trash appears to be working from the perspective of our members, and additional regulation is unhelpful and may actually increase the cost to comply because of the difficulty of proving Track 2 equivalence with Track 1.		Currently the Construction General Permit (CGP) prohibits the discharge of any debris, which includes plastic and other trash materials. The Trash Amendments propose an outright prohibition of the discharge of trash for NPDES permits for discharges of storm water associated with industry activity (including construction). The provisions for these permits in the Ocean Plan Amendment are at III.L.2.c and in the Part I ISWEBE are at IV.A.3.c. The existing provisions in the CGP would be similar to the outright prohibition for trash. It is not the intention of the State Water Board to create additional regulations on trash for CGP permittees.
5.2	We have concerns about the monitoring and reporting program (described on page 17 of the Staff Report, Section 2.7), which strongly implies a level of effort required by builders and contractors significantly above and beyond what is currently		The Trash Amendments would require the IGP and CGP dischargers to report the measures used to comply. (See Ocean Plan Amendment III.L.5.d; Part I ISWEBE IV.A.6.d.) Currently, the CGP prohibits the discharge for any debris, which includes plastic and other trash materials. The Trash Amendments establish an outright prohibition of the discharge of trash. The existing provisions in the CGP would be similar to

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	required to demonstrate compliance. Furthermore, the Draft Trash Control Amendment makes conflicting statements about the necessity of specific monitoring requirements for construction dischargers, and clarification of intent by the State Water Board is requested. Specifically, see conflicting information discussed on page 17, Section 2.7 and pages 81-82 of the Staff Report, 4.10 No. 3.		the outright prohibition for trash. State Water Board staff does not intend to create additional regulations or monitoring for trash for CGP permittees.
5.3	Lack of economic analysis of the impact of the proposed Trash Amendments for construction dischargers.		The Economic Considerations section analyzed the potential cost for both the dischargers enrolled under the Industrial Storm Water General NPDES Permit and the CGP. As described in the introduction of the Economic Considerations (page C-7), the economic analysis provides an estimate of the compliance costs and considers the incremental costs that permitted storm water dischargers may need to incur based on the implementation provisions and time schedules proposed in the Trash Amendments. Therefore, the considerations only apply to those dischargers that would see an incremental cost in addition to existing compliance costs. As explained in footnote 79 of the Economic Considerations section (page C-48), dischargers enrolled under the CGP are already required to comply with a prohibition of discharge for debris and trash from construction sites (State Board Action 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ. Prohibition III. D. page 21). Therefore, no additional or incremental costs would be necessary for construction dischargers to comply with the proposed Trash Amendments.
6.1	The Trash Amendments' SED acknowledges that a "numeric objective of 'zero trash' could be an efficient regulatory tool because the		The State Water Board acknowledges that while zero trash may be a desirable goal, it may not be feasible to achieve this numeric water quality objective. A single piece of trash found in a water body may or may not constitute a violation of a

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	measurement of compliance is clearly defined." However, the State Board goes on to claim that on "a feasible level, a single piece of trash found in a water body may or may not constitute impairment, and it may or may not be aesthetically unpleasing." We disagree with the State Board's conclusion, and recommend a zero water quality objective be re-evaluated. For purposes of consistency, we recommend the State Board revise the Amendments' water quality objective to state that waterways shall not contain trash…" Or, if the Board wishes to keep the existing sentence structure, we recommend: "no trash shall be present…"		numeric water quality objective of zero trash, and yet it may or may not be aesthetically unpleasing and may or may not be detrimental to aquatic life and wildlife beneficial uses. A narrative water quality objective, on the other hand, provides the Water Boards the ability to evaluate the amount of trash present in the waters that adversely affects or threatens beneficial uses or creates a nuisance on a site-specific basis. Furthermore, California Coastkeeper Alliance et al. was one of many who commented that the State Water Board should establish a water quality objective of zero trash and with reference to the Los Angeles River Watershed Trash TMDL as precedent for that recommendation. However, it is important to recognize that the Los Angeles River Watershed Trash TMDL did not establish or interpret a zero trash numeric water quality objective, but established a TMDL target that interpreted a narrative water quality objective. While useful within the context of establishing a TMDL numeric target, zero trash is not suitable for a water quality objective because it would effectively establish a prohibition of the discharge of trash. Finally, while the Los Angeles River Watershed Trash TMDL did establish a zero trash target, it then also provided non-zero waste-load allocations. The Los Angeles River Watershed Trash TMDL does include phased reductions with a state goal of achieving a wasteload allocation of zero in 9 years, but the Los Angeles River Watershed Trash TMDL also includes a couple of critical caveats. First, the TMDL includes as a footnote to Table 7.2.3 (Attachment A to resolution No. 2007-012) that states that the Los Angeles Water Board will review and reconsider the final waste load allocations once a reduction of 50% has been achieved. Second, an additional footnote to the same table notes that 'notwithstanding the zero trash target and the baseline waste allocation shown in Table 5, a permittee will be deemed in compliance with the Trash TMDL in areas served by a full capture system. For these reasons, The Los Angeles River Watershed Trash TMDL need not constrain the

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			Water Board's statewide development of water quality objectives, which achieves uniformity and consistency in place of the existing approximately 33 existing narrative objectives for the presence of floatable, solid, suspended materials. Refer to the Final Staff Report, Section 4.2, Issue 2, for additional information about the selection of water quality objectives. The State Water Board agrees for purposes of consistency with existing "floatable, suspended, and settleable water quality objectives" that the proposed statewide trash narrative water quality objective should be characterized as "trash shall not be present" rather than "shall not accumulate." The Trash Amendments have been modified from "trash shall not accumulate" to "trash shall not be present." (Ocean Plan Amendment at II.C.5; Part I ISWEBE at III.A.)
6.2	The State Water Board needs to provide a performance standard for Track 2 Permittees to achieve, explicit language in the Amendments requiring monitoring to be conducted for Track 2, and minimum monitoring criteria for Track 2 Permittees to follow. The Amendments require Track 2 Permittees to achieve "the same performance results as compliance under Track 1 would achieve…" To prove they are achieving the same performance results, Track 2 Permittees will be required to conduct monitoring to demonstrate they are reducing trash equivalent to that of Track 1 Permittees, but the Amendments lack specificity as to what shall be required for receiving water monitoring for Track 2. Instead, the	MS4* permittees that elect to comply with Chapter III.J.2.b.2. (Track 2) shall develop and implement monitoring plans that demonstrate the mandated ~~performance results, effectiveness of the full capture systems*, other treatment controls*, institutional controls*, and/or multi-benefit projects*, and~~ compliance with the performance standard of (xx??). Monitoring reports shall be provided to the applicable permitting authority* on	Track 2 allows permittees to utilize the full range of mechanisms to control trash to achieve the same equivalent performance to Track 1. The proposed final Trash Amendments provided clarity to this performance standard Track 2 permittees shall be required to achieve by adding and defining the term "full capture system equivalency." (See Ocean Plan Amendment and Part I ISWEBE, Definitions, "Full capture system equivalency.") Full capture system equivalency is the trash load that would be reduced if full capture systems were installed, operated, and maintained for all storm drains that capture runoff from priority land uses, significant trash generating areas, or other relevant land uses. This concept of full capture system equivalency is applicable to MS4 Phase I, MS4 Phase II, Caltrans, and Industrial General Permit (IGP) permittees. Full capture system equivalency is a trash load reduction target that the permittee quantifies by using an approach subject to the approval of the permitting authority. The proposed final Trash Amendments provide two examples of approach, a Trash Capture Rate Approach and a Reference Approach. Other approaches may be suitable and may or may

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	Amendments only provide minimum monitoring and reporting requirements. We request the State Board provide an explicit performance standard in both the Amendments and the SED to help Track 2 Permittees demonstrate compliance. Alternatively, the State Board may consider requiring Track 2 Permittees to conduct a baseline analysis of all trash discharged within priority use areas, and then demonstrate a 100 percent reduction of that baseline assessment. If this is the State Board's intent, we strongly encourage the Board to provide sufficient monitoring guidance to ensure the baseline study and the annual monitoring is conducted appropriately. We recommend the State Board revise the Trash Amendments to be explicit that Track 2 Permittees are required to conduct a baseline assessment and annual receiving water monitoring to demonstrate equivalent trash reductions as Track 1.	an annual basis, and shall include <u>a baseline monitoring report, minimum receiving water monitoring criteria as set forth in the Staff Report</u>, GIS-mapped locations and drainage area served for each of the full capture systems*, other treatment controls*, institutional controls*, and/or multi-benefit projects installed or utilized by the MS4* permittee.	not depend on establishment of a baseline trash load. Additionally, the Trash Amendments were revised to add that each NPDES permittee implementing Track 2 "shall demonstrate that such combination achieves full capture system equivalency." (Ocean Plan Amendment at III.L.2.a.2 (MS4s), III.L.2.b (Department) and III.L.2.c (Industrial); Part I ISWEBE at IV.3.a.2 (MS4s), IV.3.b (Department), and IV.3.c (Industrial).) Within the scope of the Trash Amendments, full capture system equivalency must be established prior to the implementation of trash controls. Within the implementation plan for Track 2, the permittee will need to: (1) describe the combination of controls selected and the rationale for the selection, (2) describe how the combination of controls will achieve full capture system equivalency, and (3) describe how full capture system equivalency will be demonstrated. The implementation plan is subject to the review and approval of the permitting authority. (Ocean Plan Amendment at III.L.4.a.1 (MS4s) and III.L.4.b.1 (Caltrans); Part I ISWEBE at IV.A.5.a.1 (MS4s) and IV.A.5.b.1 (Caltrans).) As trash controls are implemented, the focus of monitoring a program is to assess and monitor the progress towards achievement of the full capture system equivalency, and thus compliance with the prohibition of discharge. The Trash Amendments provide the minimum monitoring and reporting requirements that need to be incorporated into the permits. The monitoring requires the demonstration of milestone reduction, such as 10% per year, and compliance with the implementation provisions. The implementation provisions are specifically focused on 'full capture system equivalency'. The intent of monitoring is not for permittees to conduct a baseline analysis of all trash discharge. The proposed Final Trash Amendments were revised to clarify that the Track 2 monitoring plan requirement is to demonstrate "compliance with full capture equivalency" as newly defined. (Ocean Plan Amendment at III.L.5; ISWEBE Part I at IV.A.6.)

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			In addition, the proposed final Trash Amendments have been modified to make question-based approach discretionary and removed the requirement for receiving water monitoring component. The focus of the monitoring plans should "demonstrate the effectiveness of controls and compliance with full capture system equivalency". (Ocean Plan Amendment at III.L.5; Part I ISWEBE at IV.A.6.) The State Water Board believes this requirement to provide both consistency for the permitting authority to develop monitoring and flexibility to determine specific questions to effectively monitor. While receiving water monitoring is a reasonable approach for trash, the specificity of the monitoring approach will be at the discretion of the permitting authority. These questions in the monitoring section should provide sufficient framework for how to demonstrate compliance and achievement of Track 2 targets. (Ocean Plan Amendment at III.L.5; Part I ISWEBE at IV.A.6.)
6.3	If the State Board insists on a Track 2 approach to achieve a narrative water quality objective, then it is even more important that the implementing provisions are clear and unambiguous. Prioritizing full-capture devices in Track 2 will provide permittees a straightforward and clear path to compliance—leading to greater trash reductions.	Track 2: Install, operate, and maintain ~~any combination of~~ full capture systems* to the maximum extent feasible. For storm drains demonstrated to be infeasible for full capture system installation, include any combination of other treatment controls*, institutional controls*, and/or multi-benefit projects* within either the jurisdiction of the MS4* permittee or within the jurisdiction of the MS4* permittee and	The State Water Board declines the commenter's recommended language because it substantially alters the intent and flexibility of Track 2. However, the State Water Board's intent is that full capture systems would be would the primary mechanisms employed by permittees with supplemental efforts from increased institutional controls and other treatment controls from existing permit requirements. To clarify this intent, the following language has been included to Track 2: "It is, however, the State Water Board's expectation that the MS4 permittee will elect to install full capture systems were such installation is not cost-prohibitive." (Ocean Plan Amendment at III.L.2.a.2; Part I ISWEBE at IV.A.3.a.2.) Full capture systems should be considered first; if they are determined to be not practical at a location, then other controls can be used. The function of Track 1 and Track 2 and other components of the Trash Amendments are to provide permit requirements for

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		contiguous MS4s* permittees, so long as such combination achieves the same performance results as compliance under Track 1 would achieve for all storm drains that captures runoff from one or more of the priority land uses* within such jurisdiction(s).	applicable permits or orders to ensure compliance with the prohibition of discharge for trash. (Ocean Plan Amendment at III.I.6; Part I ISWEBE at IV.A.2.)
6.4	It is critical that the prohibition of discharge of preproduction plastics remain absolute and unwavering in order to address the problem of preproduction plastics in receiving waters, and in order to comply with existing state law. In Chapter III.I.6.d, the Amendments contain a prohibition of discharge for preproduction plastics, but this prohibition conflicts with Chapter III.L.2.c. These two sections must be reconciled and it must be clarified that the prohibition of pre-production plastic discharges is absolute, and cannot be undermined by any other section of the Amendments.	…Termination of permit coverage the outright prohibition under Chapter III.I.6.a. for industrial and construction storm water* dischargers shall be conditioned upon the proper operation and maintenance of all controls (e.g., full capture systems*, other treatment controls*, institutional controls*, and/or multi-benefit projects*) used at their facility(ies). Regardless of termination under Chapter III.I.6.a., all industrial storm water dischargers shall meet the outright prohibition for pre-production plastics under Chapter III.I.6.d.	The intention of the Trash Amendments is for the prohibition of discharge of preproduction plastic to be absolute. The proposed final Trash Amendments were modified (Ocean Plan Amendment at III.I.6.e; Part I ISWEBE at IV.A.2.e.) to acknowledge the that prohibition is absolute unless a permittee is subject to "Preproduction Plastic Debris Program" under Water Code section 13367(a) and the requirements in the IGP (Order No. 2014-0057-DWQ) because facilities subject to that permit are subject to special requirements for plastics which reduce or prevent the discharge of plastics, including but not limited to: Facilities covered under this General Permit that handle Plastic Materials are required to implement BMPs to eliminate discharges of plastic in storm water in addition to the other requirements of this General Permit that are applicable to all other Industrial Materials and Activities. Plastic Materials are virgin and recycled plastic resin pellets, powders, flakes, powdered additives, regrind, dust, and other similar types of preproduction plastics with the potential to discharge or migrate off-site. Any Dischargers' facility handling Plastic Materials will be referred to as Plastics Facilities in this

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			General Permit. Any Plastics Facility covered under this General Permit that manufactures, transports, stores, or consumes these materials shall submit information to the State Water Board in their PRDs, including the type and form of plastics, and which BMPs are implemented at the facility to prevent illicit discharges. Pursuant to Water Code section 13367, Plastics Facilities are subject to mandatory, minimum BMPs. (Order No. 2014-0057-DWQ, Section XVIII (p. 64); see id. at pp. 64-66) for additional and specific requirements imposed on applicable facilities/permittees.) Additionally, when a facility or site wants to terminate coverage from the IGP or CGP, a Notice of Termination must be submitted to the permitting authority. For the Notice of Termination to be approved by the permitting authority, a set of conditions need to be met by the permittee as outlined in the respective permit. For example, Section II.D.1.d of the CGP (2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ), states that one condition for a construction site to be considered complete is when "construction materials and waste have been disposed properly." The intent with the proposed Trash Amendments is to add trash controls to the list of conditions the permittee or discharger must complete in order to be terminated from coverage from under the IGP or CGP.
6.5	Permittees should address a minimum number of un-permitted non-point sources. Trash generated from non-point sources has significant impact. As a result, recent trash TMDLs adopted in Region 4 and requirements in Region 2 all include load allocations	Chapter III.I.2.d. - A permitting authority* ~~may~~ shall require a minimum amount of ~~determine that~~ specific land uses or locations (e.g., parks, stadia, schools, campuses, or roads	Although the implementation provisions for compliance with the prohibition of discharge focus on trash discharge via storm water, it is well recognized that trash is transported to surface waters via both point and non-point sources. Statewide nonpoint source discharges of trash cause less of an impact to state water than point sources; however, at the local or regional level nonpoint sources can be a substantial source of trash. These areas may include high usage campgrounds, picnic

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	for non-point sources. Thus the State Board should require Regional Boards to address a minimum number of non-point sources within its region. Instead, the Amendments give complete discretion to the permitting authority to determine specific land uses or locations that generate substantial amounts of trash. Given limited resources, it is highly unlikely that Regional Boards will require additional measures beyond the existing Amendments' requirements. Instead of placing the burden on Regional Boards to determine non-point sources that are generating a substantial amount of trash, the State Board should require municipalities to conduct a hot spot survey every permit term to identify non-point sources of trash that contribute significant volumes of trash. Each survey should rank its non-point sources from the most egregious location to the lowest. We recommend the State Board require the permitting authority conduct a similar population analysis as Region 2's MRP in order to set a minimum number of non-point source discharges to be addressed. Additionally, homeless encampments and high-use beach should be addressed explicitly.	leading to landfills) to be deemed trash hot spots and ~~determined as trash hotspots generate substantial amounts of Trash*. In the event that the permitting authority* makes that determination, the permitting authority* may~~ require the MS4* to comply with Chapter III.L.2.a. or Chapter III.L.2.b. (as the case may be) with respect to such land uses or locations. In addition to the minimum amount of trash hot spots, homeless camps and high-use beaches as defined in AB411 shall be deemed "hot spots." Chapter III.I.3. - A permitting authority* ~~may~~ shall require dischargers, that are not subject to Chapter III.L.2. herein, to implement Trash* controls in areas or facilities that may generate Trash*. Dischargers subject to Chapter III.L.2. shall conduct a trash "hot spot" survey to	areas, beach recreation areas, and marinas, which can be subject to waste discharge requirements (WDRs) or conditional waivers of WDRs. These types of areas would be assessed by the Water Boards to determine if trash controls are necessary for compliance with the proposed Trash Amendments. For such areas determined to require trash controls within a WDR or waiver of a WDR, management practices could include enforcement of litter laws, education, recycling programs, more or better placement of trash receptacles, and/or more frequent servicing of trash receptacles. (Ocean Plan Amendment at III.L.3; Part I ISWEBE at IV.A.4.) As such, the Trash Amendments do not require municipalities to survey potential hotspots or require the permits to require each municipality to address a minimum number of hotspots. The Trash Amendments additionally do not preclude a permitting authority, such as the San Francisco Bay Water Board and the MRP, from addressing other sources of trash with a hotspot approach. The Trash Amendments are more land-use focused, and in the future the State Water Board could address non-point source trash in a more focused program as suggested by the commenter.

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		determine a minimum number of non-point sources that generate trash, such areas or facilities may include (but are not limited to) high usage campgrounds, picnic areas, beach recreation areas, parks not subject to an MS4* permit, or marinas. In addition to the minimum amount of trash hot spots, homeless camps and high-use beaches as defined in AB411 shall be deemed "hot spots."	
6.6	Priority land use areas should be defined precisely, free from loopholes, and include schools. Equivalent alternative land uses should be removed as a priority land use option. High density residential should remain at 10 units per acre. Schools should be added as a priority land use.		The State Water Board agrees with the need for clarity and believes that the five defined priority land uses (i.e., high-density residential, industrial, commercial, mixed urban, and public transportation stations land uses) provide sufficient clarity. The State Water Board disagrees that the provision allowing a permittee to request to comply with Track 1 or Track 2 for equivalent alternative land uses is a "loophole" and that provision will remain in the Trash Amendments. That provision provides flexibility to permittees to focus on addressing the land uses that generate the highest amounts of trash and is subject to the permitting authority's determination that the subject alternative land use generates trash equal or greater to one or more of the defined priority land uses. (See Ocean Plan Amendment and Part I ISWEBE, definitions, "Priority land uses") The proposed final Trash Amendments maintain high density

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			residential defined at 10 dwelling units per acre. While schools do generate trash, the Trash Amendments do not add schools as a priority land use. However, a permitting authority retains discretion to require a permittee to comply with Track 1 or Track 2 if the permitting authority determines that a school generates substantial amounts of trash. (Ocean Plan Amendment at III.L.2.d; Part I ISWEBE at IV.A.3.d.) More broadly than just schools, the Trash Amendments acknowledge that trash is generated from locations or land uses outside of the priority land uses that may require trash controls in order to meet water quality objectives and be protective of the beneficial uses of the receiving water. Within an MS4's jurisdiction, the Trash Amendments provide discretion to the permitting authority to determine that specific land uses or locations within an MS4's jurisdiction, in addition to priority land uses, generate "substantial amounts of trash" and require trash controls. (Ocean Plan Amendment at III.L.2.d; Part I ISWEBE at IV.A.3.d.) The specific land uses or locations include but are not limited to city neighborhoods, parks, stadia, or particular parking lots or roads. The required trash controls would either be Track 1 or Track 2, as determined by the permitting authority. (Ocean Plan Amendment at III.L.2.d; Part I ISWEBE at IV.A.3.d.) This approach is needed because it allows a permitting authority to regulate the discharge of trash from locations within a municipality it determines generates levels of trash that cause or contribute to violations of the statewide trash water quality objective. The water quality objective for trash is: "trash shall not be present in surface waters, along shorelines or adjacent areas in amounts that adversely affect beneficial use or cause nuisance." (Ocean Plan Amendment at II.C.5; Part I ISWEBE III.A.) Substantial amounts of trash would include, for example, trash generation loads that individually or cumulatively cause or

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			contribute to a violation of the statewide trash narrative water quality objective. The permitting authority's finding of "substantial amounts of trash" would be informed by its determination that a permittee is causing or contributing to the violation of the statewide trash narrative water quality objective.
6.7	We have seen great success in trash reductions as a result of these TMDLs. However, we are concerned that, as proposed, the Amendments require Region 4 to re-open 13 of the 15 trash TMDLs and consider modifications. Specifically, the draft Amendments state that "within one year of the effective date of these Trash Provisions, the Los Angeles Water Board shall convene a public meeting to reconsider the scope of its trash TMDLs, with the exception of those for the Los Angeles River and Ballona Creek watersheds, and to particularly consider an approach that would focus MS4 Permittee's trash-control efforts on high-trash generation areas within their jurisdictions." A reopener of this scope and magnitude is inappropriate and unnecessary.	Chapter III.L.1.b.2 - ~~Within one year of the effective date of these Trash Provisions*,~~ The Los Angeles Water Board ~~shall~~ may convene a public meeting to reconsider the ability to allow TMDL responsible parties, who are determined to be at least 80% in compliance through the implementation of full capture systems, to achieve full compliance through focusing additional trash-control efforts on high-trash generation areas scope of its trash TMDLs, with the exception of those for the Los Angeles River and Ballona Creek watersheds~~, and to particularly consider an approach that would focus MS4* permittees' trash-control efforts on high-trash generation areas within their jurisdictions.~~	The Los Angeles Water Board has led the way with effective trash management strategies with the Los Angeles River Watershed Trash TMDL and the other 14 trash and debris TMDLs. Since the adoption of the trash and debris TMDLs, significant trash reduction and trash control has occurred in the Los Angeles Region. The trash control efforts by permittees in the Los Angeles Region are laudable. Those effective strategies demonstrate that trash control is both necessary and achievable statewide. The Trash Amendments do not require the Los Angeles Water Board to re-open 13 of the 15 trash TMDLs. The State Water Board evaluated the efforts of the existing trash and debris TMDLs in order to develop the proposed Trash Amendments. In the evaluation process, the State Water Board and Los Angeles Water Board staff discussed the present day status of the trash and debris TMDLs and the proposed Trash Amendments. As trash and debris TMDLs are nearing the end of compliance, a public meeting will be held to reconsider the scope of existing TMDLs to reassess the progress, feasibility, and available resources of the trash control effort—within one year of the effective date of the Trash Amendments. (Ocean Plan Amendment at III.L.1.b.2; Part I ISWEBE at IV.A.2.b.2.) A public meeting does not constitute a re-opener; additionally, at any time the Los Angeles Water Board may reopen and reevaluate its trash TMDLs independent of the Trash Amendments' provisions. A public meeting would focus on evaluating the scope of the trash and debris TMDLs in context of feasibility to achieve the wasteload allocations while

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			maintaining the end goal of achieving water quality objectives for trash to support applicable beneficial uses.
6.8	The State Board should be explicit that each permittee is required to show a ten percent reduction in trash discharges annually for the ten year compliance schedule. Interim milestones are a critical component to ensure permittees meet the ten year compliance deadline. Throughout the stakeholder process, the State Board had always considered interim milestones of ten percent for ten years to be the appropriate requirement	Chapter III.L.4.a.3. and 4. (For both Tracks) - For MS4* permittees that elect to comply with Chapter III.L.2.a.1. (Track 1), full compliance shall occur within ten (10) years of the effective date of the first implementing permit (whether such permit is re-opened, reissued or newly adopted), along with achievements of interim milestones ~~such as an average of~~ a minimum ten percent (10%) of the full capture systems* installed every year. In no case may the final compliance date be later than fifteen (15) years from the effective date of these Trash Provisions*. SED, Pg.15 - "Within the ten-year compliance periods discussed above, the Water Board ~~can~~ shall set interim compliance milestones within a specific permit. These	The State Water Board agrees that interim milestones are a critical component to ensure permittees reach the compliance schedule deadline, thus the proposed Trash Amendments specify that "the permit shall also require these permittees to demonstrate achievement of interim milestones" (Ocean Plan Amendment at III.L.5.a.2-4 (MS4s) and III.L.5.b.2 (Caltrans); Part I ISWEBE at IV.6.a.2-4 (MS4s) and IV.6.b.2 (Caltrans).) However, to provide flexibility for permittee site-specific conditions, the permitting authority is provided the discretion to set the precise quantification and timing of those interim milestones. Suggested interim milestones include average ten percent of full capture systems installed per year, average load reduction of ten percent per year, or other process towards full implementation. The State Water Board does not think the proposed language is necessary. (Ocean Plan Amendment at III.L.5.a.2-4 (MS4s) and III.L.5.b (Department); Part I ISWEBE at IV.6.a.2-4 (MS4s) and IV.6.b (Department).)

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		interim milestones ~~could be set, for example, as~~ should be a minimum ten percent reduction or ten percent installation per year."	
6.9	Require all permittees to begin meeting compliance requirements within 18 months will reduce delays in implementation. Reducing the worst-case scenario of 15 years until compliance to only 11.5 years will get California quicker results without placing a burden on permittees.	Within eighteen (18) months of the effective date of these Trash Provisions*, each permitting authority* shall ~~either~~: (i) issue an order pursuant to Water Code section 13267 or 13383 requiring each MS4* permittee that will be complying under Chapter III.L.2.a.1. (Track 1) or Chapter III.L.2.b.2. (Track 2) to submit written notice to the permitting authority* stating whether such MS4* permittee will comply with the prohibition of discharge under Track 1 or Track 2, ~~or~~ and (ii) re-open, re-issue, or adopt an implementing permit that includes requirements consistent with these Trash Provisions*, and that requires notice from each MS4* as to whether it has elected to	If the final compliance was 11.5 years from the effective date of the Trash Amendments, then California would achieve quicker results in trash reduction. However, the commenter's proposed time schedule would place undue burden on both the permitting authority and the permittees. The time schedule in the Trash Amendments was designed for two purposes. First, as NPDES storm water permits are re-issued every five years, there is time provided for the permitting authority to incorporate the Trash Provisions into the permit. Second, to assist in effective planning by the permittee and to reduce a delay in the compliance schedule, eighteen months of the effective date of the implementing permit (or new designation) is provided to allow sufficient time to the permittee to develop an implementation plan for Track 2. The implementation plans must describe, among other details, the combination of selected controls, how those controls will achieve full capture system equivalency, and how such compliance will be demonstrated. (See i.e., Ocean Plan Amendment at III.L.4.a.1.A; Part I ISWEBE at IV.A.5.a.1.A.) Including the implementation planning time within the ten-year compliance schedule would burden both the permitting authorities and the permittee. The State Water Board does not think the proposed language is necessary.

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		comply under Track 1 or Track 2.	
6.10	We support Track 2's call for source reduction as a means of controlling litter because source control ordinances in California have demonstrated that these policies can be an effective means of curbing litter, saving money, and changing consumer behavior. Plastic bag and foam bans have proliferated in recent years, as a response to a growing need for municipalities to reduce litter in order to save costs, improve the environment, and meet regulatory mandates such as TMDLs. Consequently, industry opposition has been fierce. In opposition to comments made by the American Chemistry Council, and Dart Industries during public testimony at the July 16, 2014 workshop, we believe source reduction policies are effective and should be incentivized in the Policy.		Comment noted. See also Responses to Comments 1 and 1.2. Subsequent to the State Water Board's public workshop and the public hearing on the proposed Trash Amendments, Senate Bill 270 (2014 Stats. Ch. 850) was enacted. That new law enacts a state-wide plastic bag carry-out ban pertaining to grocery stores and pharmacies that have a specified amount of sales in dollars or retail floor space, which goes into effect July 1, 2015, and imposes the same ban on convenience stores and liquor stores a year later. The new law will implement a product ban, which was generally the type of regulatory source control contemplated by the State Water Board and discussed with the public with regard to consideration of the time extension option. The enactment of Senate Bill 270 removed the need for regulatory source controls, particularly product bans that would reduce trash (bag bans), in the proposed Trash Amendments. As a result, the proposed final Trash Amendments omit "regulatory source controls" as a method to comply with Track 2 and omit any corresponding allowance of time extensions. (See Final Staff Report at pp. 20-21 and pp.98-99.) Yet, subsequent to the enactment of Senate Bill 270 and the revision of the proposed Final Trash Amendments, opponents qualified a referendum on the law, delaying its July 1, 2015 effective date until the November 2016 elections, which would require a majority of votes for the referendum to succeed. The development of any bag ban ordinance as an "institutional control" to comply with Track 2, however, is speculative at this time given the pending statewide bag ban, the qualifying referendum notwithstanding.

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6.11	Only Track 1 Permittees should receive a time-credit extension for implementing source control ordinances. The time-credit extension was suggested by the Public Advisory Group with the intent of complementing Track 1's structural BMP approach. However, the Amendments currently allow both Track 1 and 2 to receive a time-extension for passing a source-control ordinance.		Time extensions are no longer proposed under Track 1 or Track 2 of the proposed final Trash Amendments and have been removed because of the enactment of Senate Bill 270, which removed the need for regulatory source controls, particularly product bans that would reduce trash, in the proposed Trash Amendments. "Institutional controls" may be established by permittees to comply with Track 2, and such controls may include "ordinances." However, it is not reasonably foreseeable that a product ban ordinance would qualify as reducing trash and any such ordinance is speculative and not a reasonably foreseeable method of compliance, the pending referendum on SB 270 notwithstanding. See also the General Response to Comment Letter 1 and Responses to Comments 1.2 and 6.10.
6.12	While we support Section 5's source-control incentive, we believe minimum standards need to be established in order to ensure true source control is being implemented. We do not take a time extension lightly—trash reductions need to begin immediately. But source control is such a critical component of controlling trash that we believe the one to three year credit is affordable. However, the credit is only worthwhile if real source control is being implemented. As described above, a recycling program is not source control and is not effective. By its very definition source control is stopping something at its source and offering an alternative product. Recycling does not stop a source of	Source reduction for trash includes methods that eliminate trash generation at the source. These include bans on trash-generating products, such as single use plastic bags or the addition of plastic microbeads in personal care products, which lead to elimination of a product that becomes trash. In addition, non-ban regulatory approaches might include mandatory discounts on re-usable alternatives to single use products, such as a	See Response to Comment 6.11. "Regulatory source controls" have been omitted from an allowable method of compliance under Track 2 and the definition has been removed. See also the General Response to Comment Letter 1 and Response to Comment 1.2.

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	pollution; it only offers to refurbish that source of pollution at a later time. There needs to be minimum standards for the permitting authority to apply before a time credit is received. Therefore, we request the State Board add minimum standards into the SED regarding what constitutes an appropriate regulatory source control.	discount provided to customers that bring re-usable cups or containers for take-out food. Other options can include mandatory fees on trash generating items, such as cigarettes or take-out food and beverage containers, where the fee is intended to encourage either a reduction in the use of a single use disposable product that is likely to become litter, or is intended to provide funding to support cleanup programs.	
6.13	Particles less than 5mm in size were 16 times more abundant than those greater than 5mm, and weighed three times more than the larger particles. Recent research conducted in the Great Lakes by SUNY Fredonia and 5 Gyres also documents astounding levels of micro-plastics—43,000 microplastic particles per square kilometer. As a result of the increasing documentation of the impacts of microplastic pollution on the marine environment and human sources of food, California should address and stop the discharges of plastic debris less than 5mm. We request the State Board consider addressing		Comment noted with the acknowledgment that it does not directly relate to the Trash Amendments but to a potential different State Water Board project in the future. Additionally, the Trash Amendments address micro-debris in two main ways. First by capturing and stopping the transport of trash before entering the storm drain systems, minimizing the amount of breakdown that occurs. Second, the Trash Amendments propose a prohibition of discharge for preproduction plastics to waters of the state. Together these approaches will reduce the amount of micro-debris in the surface waters of California.

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	microplastic pollution during its Storm Water Strategy Initiative through interagency collaboration on source control.		
7.1	The Trash Amendments' SED acknowledges that a "numeric objective of 'zero trash' could be an efficient regulatory tool because the measurement of compliance is clearly defined." However, the State Board goes on to claim that on "a feasible level, a single piece of trash found in a water body may or may not constitute impairment, and it may or may not be aesthetically unpleasing." We disagree with the State Board's conclusion, and recommend a zero water quality objective be re-evaluated. For purposes of consistency, we recommend the State Board revise the Amendments' water quality objective to state that waterways shall not contain trash…" Or, if the Board wishes to keep the existing sentence structure, we recommend: "no trash shall be present…"	Trash* shall not ~~accumulate~~ be present in ocean waters, along shorelines or adjacent areas in amounts that adversely affect beneficial uses or cause nuisance.	Please see response to Comment 6.1.
7.2	The State Water Board needs to provide a performance standard for Track 2 Permittees to achieve, explicit language in the Amendments requiring monitoring to be conducted for Track 2, and minimum monitoring criteria for Track 2 Permittees to follow. The Amendments require Track 2 Permittees to achieve "the	MS4* permittees that elect to comply with Chapter III.J.2.b.2. (Track 2) shall develop and implement monitoring plans that demonstrate the mandated ~~performance results, effectiveness of~~	Please see response to Comment 6.2.

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	same performance results as compliance under Track 1 would achieve…" To prove they are achieving the same performance results, Track 2 Permittees will be required to conduct monitoring to demonstrate they are reducing trash equivalent to that of Track 1 Permittees, but the Amendments lack specificity as to what shall be required for receiving water monitoring for Track 2. Instead, the Amendments only provide minimum monitoring and reporting requirements. We request the State Board provide an explicit performance standard in both the Amendments and the SED to help Track 2 Permittees demonstrate compliance. Alternatively, the State Board may consider requiring Track 2 Permittees to conduct a baseline analysis of all trash discharged within priority use areas, and then demonstrate a 100 percent reduction of that baseline assessment. If this is the State Board's intent, we strongly encourage the Board to provide sufficient monitoring guidance to ensure the baseline study and the annual monitoring is conducted appropriately. We recommend the State Board revise the Trash Amendments to be explicit that Track 2 Permittees are required to conduct a baseline assessment and annual receiving water	~~the full capture systems*, other treatment controls*, institutional controls*, and/or multi-benefit projects*, and~~ compliance with the performance standard of (xx??). Monitoring reports shall be provided to the applicable permitting authority* on an annual basis, and shall include a baseline monitoring report, minimum receiving water monitoring criteria as set forth in the Staff Report, GIS-mapped locations and drainage area served for each of the full capture systems*, other treatment controls*, institutional controls*, and/or multi-benefit projects installed or utilized by the MS4* permittee.	

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	monitoring to demonstrate equivalent trash reductions as Track 1.		
7.3	We understand that Region 2's implementation of the MRP has been underwhelming, and agree that improvements need to be made. However, we don't agree that the Amendments will improve the status in the Bay Area. Implementation concerns with the MRP are just as likely under the Amendments new provisions. The problem is not with the MRP's provisions, but rather the lack of enforcement for poor implementation. The stringency of the effluent limits in the MRP in lieu of enforcement would be the worst kind of backsliding possible. Hold Region 2 MRP Permittees responsible for their permit requirements to reduce trash discharges by 40 percent by 2014 and to reduce discharges to 100 percent by 2022.	These Trash Provisions* apply to all surface waters of the State, with the exception of those waters within the jurisdictions of the Los Angeles Regional Water Quality Control Board (Los Angeles Water Board) and the San Francisco Regional Water Quality Control Board for which trash Total Maximum Daily Loads (TMDLs) or existing permit terms addressing 303(d) impaired waterways are in effect prior to the effective date of these Trash Provisions.	The implementation provisions in the proposed Trash Amendments are not expected to result in backsliding. Backsliding generally refers to reductions in treatment levels required by NPDES permits. The Clean Water Act and U.S. EPA's regulations limit the circumstances under which modified or reissued permits may set less stringent effluent limitations than required by previous permits. (CWA § 402(0)(3)(A)-(E); 40 CFR § 122.44(l); see also 40 CFR § 122.62 (applicable circumstances for permit modification or revocation).) The "anti-backsliding" provisions generally prohibit relaxation of effluent limitations previously established on the basis of best professional judgment, unless circumstances exists that make one of the exceptions to the general rule. The Trash Amendments' application to MRP and East Contra Costa Municipal Storm Water permittees does not allow less stringent effluent limitations. Additionally, permittees subject to the MRP and the East Contra Costa Municipal Storm Water Permit are expected to achieve the noted milestones by 2022 and 2023, respectively. To this end, the Trash Amendments specify that pertinent permitting authority for the aforementioned permits may set an earlier full compliance schedule than the ten years specified for Track 2. The trash control provisions in the MRP and the East Contra Costa Municipal Storm Water Permit are substantially equivalent to Track 2, and language was added to the proposed final Trash Amendments to clarify the required application of the Trash Amendments in the San Francisco Bay Region and Central Valley Region. (See Ocean Plan Amendment at Footnote 2; Part I ISWEBE at Footnote 2.) Trash is a high priority pollutant for the State Water Board, and the proposed Trash Amendments should lead to increased implementation progress for MRP and East Contra Costa Municipal Storm Water Permit permittees. The State Water Board does not think the proposed language is necessary.
7.4	It is critical that the prohibition of	…Termination of permit	Please see Response to Comment 6.4.

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	discharge of preproduction plastics remain absolute and unwavering in order to address the problem of preproduction plastics in receiving waters, and in order to comply with existing state law. In Chapter III.I.6.d, the Amendments contain a prohibition of discharge for preproduction plastics, but this prohibition conflicts with Chapter III.L.2.c. These two sections must be reconciled and it must be clarified that the prohibition of pre-production plastic discharges is absolute, and cannot be undermined by any other section of the Amendments.	coverage the outright prohibition under Chapter III.I.6.a. for industrial and construction storm water* dischargers shall be conditioned upon the proper operation and maintenance of all controls (e.g., full capture systems*, other treatment controls*, institutional controls*, and/or multi-benefit projects*) used at their facility(ies). Regardless of termination under Chapter III.I.6.a., all industrial storm water dischargers shall meet the outright prohibition for pre-production plastics under Chapter III.I.6.d.	

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7.5	Permittees should address a minimum number of un-permitted non-point sources. Trash generated from non-point sources has significant impact. As a result, recent trash TMDLs adopted in Region 4 and requirements in Region 2 all include load allocations for non-point sources. Thus the State Board should require Regional Boards to address a minimum number of non-point sources within its region. Instead, the Amendments give complete discretion to the permitting authority to determine specific land uses or locations that generate substantial amounts of trash. Given limited resources, it is highly unlikely that Regional Boards will require additional measures beyond the existing Amendments' requirements. Instead of placing the burden on Regional Boards to determine non-point sources that are generating a substantial amount of trash, the State Board should require municipalities to conduct a hot spot survey every permit term to identify non-point sources of trash that contribute significant volumes of trash. Each survey should rank its non-point sources from the most egregious location to the lowest. We recommend the State Board require the permitting authority conduct a similar population analysis as Region 2's MRP in order to set a minimum	Chapter III.I.2.d. - A permitting authority* ~~may~~ shall require a minimum amount of ~~determine that~~ specific land uses or locations (e.g., parks, stadia, schools, campuses, fast food restaurants, or roads leading to landfills) to be deemed trash hot spots and ~~determined as trash hotspots generate substantial amounts of Trash*. In the event that the permitting authority* makes that determination, the permitting authority* may~~ require the MS4* to comply with Chapter III.L.2.a. or Chapter III.L.2.b. (as the case may be) with respect to such land uses or locations. In addition to the minimum amount of trash hot spots, homeless camps and high-use beaches as defined in AB411 shall be deemed "hot spots." Chapter III.I.3. - A permitting authority* ~~may~~ shall require dischargers, that are not subject to Chapter	Please see response to Comment 6.5.

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	number of non-point source discharges to be addressed. In addition to a minimum amount of non-point sources to be addressed, a permitting authority should be explicitly required to issue WDRs to address homeless encampments and high-use beaches.	III.L.2. herein, to implement Trash* controls in areas or facilities that may generate Trash*. Dischargers subject to Chapter III.L.2. shall conduct a trash "hot spot" survey to determine a minimum number of non-point sources that generate trash, such areas or facilities may include (but are not limited to) high usage campgrounds, picnic areas, beach recreation areas, fast food restaurants, parks not subject to an MS4* permit, or marinas. In addition to the minimum amount of trash hot spots, homeless camps and high-use beaches as defined in AB411 shall be deemed "hot spots."	
7.6	We have seen great success in trash reductions as a result of these TMDLs. However, we are concerned that, as proposed, the Amendments require Region 4 to re-open 13 of the 15 trash TMDLs and consider modifications. Specifically, the draft Amendments state that	Chapter III.L.1.b.2 - ~~Within one year of the effective date of these Trash Provisions*,~~ The Los Angeles Water Board ~~shall~~ may convene a public meeting to reconsider	Please see Response to Comment 6.7.

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	"within one year of the effective date of these Trash Provisions, the Los Angeles Water Board shall convene a public meeting to reconsider the scope of its trash TMDLs, with the exception of those for the Los Angeles River and Ballona Creek watersheds, and to particularly consider an approach that would focus MS4 Permittee's trash-control efforts on high-trash generation areas within their jurisdictions." A reopener of this scope and magnitude is inappropriate and unnecessary.	the ability to allow TMDL responsible parties, who are determined to be at least 80% in compliance through the implementation of full capture systems, to achieve full compliance through focusing additional trash-control efforts on high-trash generation areas ~~scope of its trash TMDLs~~, with the exception of those for the Los Angeles River and Ballona Creek watersheds~~, and to particularly consider an approach that would focus MS4* permittees' trash-control efforts on high-trash generation areas within their jurisdictions~~.	
7.7	Track 2 permittees should be required to install full-capture devices to the maximum extent feasible.		Please see Response to Comment 6.3.
7.8	Track 2 should have a 5 year compliance schedule.	For MS4* permittees that elect to comply with Chapter III.L.2.a.2. (Track 2), full compliance shall occur within five ~~ten~~ (10~~5~~) years of the effective date of the first	Please see Response to Comment 6.9. For statewide consistency and in recognizing the need for site-specific flexibility, a ten year compliance schedule was developed for both Track 1 and Track 2. As permits are updated every five years, a ten year compliance schedule allows for adaptive management of the implementation plan to control trash. A ten year compliance schedule provides sufficient time for trash control with either Track 1 or Track 2 to

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		implementing permit (whether such permit is re-opened, re-issued or newly adopted), along with achievements of interim milestones such as average load reductions of ten percent (120%) per year. In no case may the final compliance date be later than ten ~~fifteen~~ (10~~5~~) years from the effective date of these Trash Provisions*.	be successful. Reduced time for compliance with Track 2 may result in less effective programs for trash control. For these reasons, both Track 1 and Track 2 should have a ten year compliance schedule. However, the time schedule in the proposed final Trash Amendments was modified to include provisions within new development with and MS4 and permittees designated after the effective date of the Trash Amendments. For MS4 Phase I and Phase II permittees that are newly designated as part of an existing MS4, it may not be feasible to expect compliance within ten years from the effective date of the first implementing permit (e.g., where designation occurs nine years after the first implementing permit). To address this, the proposed final Trash Amendments have been clarified so that for MS4 Phase I and Phase II permittees that are designated after the effective date of the Trash Amendments, full compliance must be demonstrated within ten years of the effective date of the designation. The State Water Board does not think the proposed language is necessary. (Ocean Plan Amendment at III.L.4.a.5; Part I ISWEBE at IV.A.5.a.5.)
7.9	The State Board should be explicit that each permittee is required to show a ten percent reduction in trash discharges annually for the ten year compliance schedule. Interim milestones are a critical component to ensure permittees meet the ten year compliance deadline. Throughout the stakeholder process, the State Board had always considered interim milestones of ten percent for ten years to be the appropriate requirement	Chapter III.L.4.a.3.and 4. (For both Tracks) - For MS4* permittees that elect to comply with Chapter III.L.2.a.1. (Track 1), full compliance shall occur within ten (10) years of the effective date of the first implementing permit (whether such permit is re-opened, reissued or newly adopted), along with achievements of interim milestones ~~such as an average of~~ a	Please see Response to Comment 6.8.

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		minimum ten percent (10%) of the full capture systems* installed every year. In no case may the final compliance date be later than fifteen (15) years from the effective date of these Trash Provisions*. SED, Pg.15 - "Within the ten-year compliance periods discussed above, the Water Board ~~can~~ shall set interim compliance milestones within a specific permit. These interim milestones ~~could be set, for example, as~~ should be a minimum ten percent reduction or ten percent installation per year."	
7.10	All permittees should be given equal compliance schedules regardless of permit's renewal dates. The amendment should require all permittees to begin meeting compliance requirements within 18 months. Reducing the worst-case scenario of 15 years until compliance to only 11.5 years will get California quicker results without placing a burden on permittees.	Within eighteen (18) months of the effective date of these Trash Provisions*, each permitting authority* shall ~~either~~: (i) issue an order pursuant to Water Code section 13267 or 13383 requiring each MS4* permittee that will be complying under Chapter III.L.2.a.1. (Track 1) or Chapter III.L.2.b.2. (Track 2) to submit written notice to	Please see Response to Comment 6.9.See Trash Amendments (Ocean Plan Amendment at III.L.4.a; Part I ISWEBE at IV.A.5.a.)

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		the permitting authority* stating whether such MS4* permittee will comply with the prohibition of discharge under Track 1 or Track 2, ~~or~~ and (ii) re-open, re-issue, or adopt an implementing permit that includes requirements consistent with these Trash Provisions*, and that requires notice from each MS4* as to whether it has elected to comply under Track 1 or Track 2.	
7.11	As a Public Advisory Group Member, CCKA was largely responsible Chapter III.L.5., which provides time extensions to permittees who adopt a source control ordinance in their local community. We also support Track 2's call for source reduction as a means of controlling litter. California existing source control ordinances have established that such ordinances can be an effective means of curbing litter, saving money, and changing consumer behavior. As a response to California policy as well as a growing need for municipalities to reduce litter in order to save costs, improve the environment, and meet regulatory mandates such as TMDLs, in recent years, plastic bag		Please see Response to Comment 6.10.

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	bans and foam bans in particular have proliferated. In opposition to comments made by the American Chemistry Council, and Dart Industries during public testimony at the July 16, 2014 workshop, we believe source reduction policies are effective and should be incentivized in the Policy.		
7.12	Only Track 1 Permittees should receive a time-credit extension for implementing source control ordinances. The time-credit extension was suggested with the intent of complementing Track 1's structural BMP approach. However, the Amendments currently allow both Track 1 and 2 to receive a time-extension for passing a source-control ordinance.		Please see Response to Comment 6.11.
8.1	Caltrans is concerned with the implementation of full capture devices as recommended by the State Water Board staff. Our major concern is that these devices may not be compatible with the structural controls required for subsequent TMDL compliance identified within Attachment IV of the Caltrans NPDES Permit (Order 2012-0011-DWQ). We are also concerned about the implementation schedule. Recommendation: Full capture devices should not be limited to those listed in the trash amendment. If treatment controls are feasible,		The Trash Amendments provide that Caltrans may implement any combination of full capture systems, multi-benefit projects, other treatment controls, and/or institutional controls to ensure that the full capture system equivalency is achieved. (Ocean Plan Amendment at III.L.2.b; Part I ISWEBE at IV.A.3.b.) The proposed Trash Amendments would require the State Water Board to modify the NPDES permit for Caltrans to incorporate the prohibition of discharge and implementation requirements of the proposed Trash Amendments within the permit. Until Caltrans' permit is amended, the proposed Trash Amendments would not apply. Until that event, Caltrans follows the conditions of Attachment IV of the Caltrans NPDES Permit (Order No. 2012-0011-DWQ). The proposed Trash Amendments take into consideration that strict use of full capture systems is infeasible for Caltrans. Treatment controls that are utilized by Caltrans to address trash and debris TMDL

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	Caltrans will implement devices that will address TMDLs and trash compliance (e.g., Media Filters, Infiltration basins, Detention devices, and other devices that may capture trash and treat for other pollutants). This amendment will require resources beyond current retrofit requirements identified within Caltrans NPDES Permit (Order 2012-0011-DWQ). Therefore, Caltrans recommends that the State Water Board revisit the compliance schedule and extend the proposed ten-year compliance deadline to be consistent with the 20-year TMDL compliance milestone. This would enable Caltrans to apply public funds more efficiently, installing devices that would be effective in treating multiple pollutants causing impairment to the water body.		compliance would be deemed acceptable for compliance towards the prohibition of discharge in the Trash Amendments. As trash is a priority pollutant across California, a ten-year compliance schedule will be maintained for both Caltrans and Phase I and Phase II MS4 permits.
8.2	Caltrans has established goals and metrics for demonstrating progress in meeting TMDL requirements in Attachment IV of our Permit. One purpose of Attachment IV was to standardize how Caltrans complies with NPDES requirements statewide, including standardizing monitoring and reporting requirements. Recommendation: Caltrans recommends that the amendment include a provision to allow Caltrans to report progress toward meeting the requirements of the amendment consistent with Attachment IV of our		The proposed Trash Amendments would require the State Water Board to modify the NPDES permit for Caltrans to incorporate the prohibition of discharge and implementation requirements of the proposed Trash Amendments within the permit. (See Ocean Plan Amendment III.L.2.b; Part I ISWEBE IV.A.3.b.) Until that event, Caltrans follows the conditions of Caltrans NPDES Permit (Order No. 2012-0011-DWQ). The monitoring and reporting requirements of the Attachment IV of the Caltrans NPDES Permit (Order No. 2012-0011-DWQ) and the proposed Trash Amendments should not be inconsistent.

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	Permit.		
8.3	There is a need to allow public education and other non-structural controls, and not focus solely on structural full capture devices. Over the past decade, Caltrans has invested in litter campaigns, such as “Keep California Beautiful,” “Litter Day,” the “California Highway Patrol Litter Campaign,” “Don’t Trash California,” and many other studies and outreach programs, including partnerships with local communities. In addition, Caltrans implements adopt-a-highway and other trash reduction programs that have a significant impact on reducing trash in the state. Recommendation: Caltrans recommends that the State Water Board incorporate such language within Track 2 compliance to allow Caltrans to continue its non-structural trash reduction programs statewide (including public education, Adopt-A-Highway, institutional controls, and other trash reduction practices) instead of solely requiring retrofit with full capture devices.		See Response to Comment 8.1. The State Water Board agrees that public education campaigns, specifically "Keep California Beautiful" and "Don't Trash California," are successful trash reduction programs that Caltrans employs to reduce trash on highways across the state. The Trash Amendments’ implementation plan specific for Caltrans recognizes that a combination of treatment and institutional controls (such as Caltrans education campaigns) are currently employed and continue to be utilized by Caltrans to control trash. The proposed Trash Amendments’ language allows for a combination of full capture systems, other treatment controls, multi-benefit projects, and institutional controls. Institutional controls encompass the wide range of non-structural trash reduction programs and controls available to Caltrans to control trash. (See the defined term for “institutional controls” in the definitions section of the Trash Amendments.)
8.4	Caltrans is concerned that the majority of the high trash generating areas identified within the trash amendment have already been incorporated within Attachment IV (TMDL) watersheds. Caltrans is concerned that the amendment		The Trash Amendments do not modify trash control practices within high priority TMDL areas as described within Attachment IV of Caltrans NPDES Permit (Order No. 2012-0011-DWQ), which only exists in the Los Angeles Region. The Trash Amendments will establish a set of implementing trash controls in high trash generating areas outside of existing TMDLs. These requirements would be incorporated for implementation

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	includes another layer of prioritization that will not be consistent with Attachment IV of our Permit and may not result in environmental benefit. Recommendation: Caltrans recommends that the State Board place a provision in the trash amendment that allows Caltrans to implement trash control practices within high priority TMDL areas as described and to be consistent with Attachment IV of our NPDES Permit.		in the next Caltrans NPDES Permit. (See Ocean Plan Amendment III.L.2.b; Part I ISWEBE IV.A.3.b.)
8.5	Caltrans has concerns with how the State Water Board intends to manage the certification of full capture systems. There are several types of BMP devices capable of removing trash; therefore, the State Water Board should expand its list of approved full capture devices. Caltrans is also concerned with the emphasis of vortex separators, as this is not consistent with concerns of standing water and vector concerns. Recommendation: Caltrans requests that the State Water Board revise the language to state that any type of BMP capable of removing trash as required by the stated criteria in the Trash Amendments will serve as an acceptable full capture device. Caltrans also requests that the State Water Board provide a revised, expanded list of approved full capture devices including the		To provide statewide consistency and ensure that limited resources are allocated to full capture systems that properly capture trash, the State Water Board will utilize a similar process to the full capture system certification process as the Los Angeles Water Board. The proposed final Trash Amendments specify that full capture systems (see definitions section in the Trash Amendments) certified by the Los Angeles Water Board or listed in Appendix I of the Bay Area-wide Trash Capture Demonstration Project, Final Project Report (May 8, 2014) are deemed to be in compliance with the proposed final Trash Amendments. Previously, the Los Angeles Water Board certified two of Caltrans' Gross Solids Removal Devices, Linear Radial – Configuration 1 (LR1 I-10) and Inclined Screen – Configuration 1 (IS1 SR-170), to comply with the Ballona Creek and Los Angeles River Trash TMDLs. As Caltrans complies with trash TMDL requirements in Attachment IV of the Caltrans NPDES Permit (Order No. 2012-0011-DWQ), the full capture systems that are installed must be further certified by the State Water Board and deemed available for use to comply with the prohibition of discharge for trash.

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	addition of media filters, infiltration devices, detention devices, and other devices proven effective for trash capture.		
8.6	Caltrans is concerned with the use of the term "public transportation areas" throughout the Trash Amendments. Public transportation areas could refer to the Caltrans roadways statewide, in addition to priority land uses. Recommendation: Caltrans requests that the State Water Board revise this statement to clarify the meaning of "public transportation areas" in relation to "priority land uses."		The Trash Amendments do not use the term "public transportation areas". The Trash Amendments specify "public transportation stations" under "priority land uses". "Public transportation stations" do not include Caltrans roadways statewide. Facilities or sites are where public transit agencies' vehicles load or unload passengers or goods. (See Ocean Plan Amendment and Part I ISWEBE definition for "public transportation stations" under definition for "priority land uses.") An example would be a bus station, bus stop, or train stop. This is not in conflict with Caltrans roadways as "public transportation stations" are defined through "priority land uses", which are only applicable to Phase I or Phase II MS4 permittees. Implementation provisions for Caltrans are focused to "significant trash generating areas". (See Ocean Plan Amendment and Part I ISWEBE definition for "significant trash generating areas.")
8.7	Caltrans provides mobility in a safe manner to the traveling public. What can be installed for litter control is not always feasible (e.g., inlet screens, etc.) due to concerns for safety to the traveling public (including hydroplaning, flooding, etc.) and safety to the Maintenance staff, traffic delays, etc. Recommendation: Caltrans requests that the State Water Board recognize that structural BMP retrofits may not be feasible in all areas, such as on freeways through high-density residential, commercial, and industrial areas due to potential		The State Water Board agrees that structural BMP retrofits may not be feasible in all areas since Caltrans is a linear system. As proposed, the Trash Amendments provide the flexibility to install, operate, and maintain any combination of full captures, other treatment controls, multi-benefit projects, and institutional controls. This would additionally provide flexibility to address potential safety concerns with trash controls. Additionally, please see Response to Comment 8.3.

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	safety concerns. The amendment should incorporate flexibility to address potential safety concerns and alternative trash controls, such as those identified within comment 3 above, should be recognized as a substitute to full capture retrofit. 8.		
8.8	This statement does not take into consideration that Caltrans has invested in capital resources for installation of trash control devices to address the trash TMDL compliance in the Los Angeles Region. Addressing the trash amendment will cost Caltrans significantly more than $1,040 per lane-mile when considering the whole life costs of trash control expenditures. Recommendation: Delete either the inaccurate statement or add a caveat that Caltrans has invested a significant amount of resources on litter removal and the whole life costs of litter removal as experienced in the Los Angeles Region has been much more than $1,040 per lane-mile.		At the time the Staff Report was developed, the State Water Board did not have cost data related to the capital resources that Caltrans has invested in the Los Angeles region. The proposed Trash Amendment is only applicable to areas not covered under an already existing trash or debris TMDL in the Los Angeles Region. Staff assumed that costs for Caltrans would be similar to the compliance costs of other MS4 dischargers. New information of cost expenditures was provided by Caltrans on November 7, 2014. Please see responses to Comment Letter 78. (Final Staff Report Appendix C, pp. C-2-4, C-15, C-18-19, and C-50-54.)
8.9	Caltrans disagrees with the estimation of the annual cost. The Trash Amendment cost will be significantly more for the following reasons: 1) An $800 drop inlet screen is infeasible for highway application due to safety concerns (e.g., flooding, hydroplaning causing accidents to the traveling public and		Please see Response to Comment 8.8. The Staff Report (Appendix C, section 8, pp. C-50-53.) evaluated all information pertaining to costs that was accessible to the State Water Board regarding the cost of compliance for Caltrans discharges for inclusion into the Economic Considerations section of the Staff Report. Cost assumptions for similar MS4 Phase I and II permittees were

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	inability for Caltrans Maintenance staff to maintain the inlet safely). 2) The high priority areas noted in the trash amendment of high-density residential, commercial, industrial, on/off ramps will likely be more than 20 percent of the urban areas. Recommendation: Either delete or correct the table. The incremental capital, operation and maintenance costs for Caltrans are significantly underestimated. Additional annual costs include operation and maintenance costs, capital outlay support, traffic controls, environmental documentation, etc. Caltrans looks forward to working with the Board to refine the cost estimates.		used in the analysis. New information of cost expenditures was provided by Caltrans on November 7, 2014. Please see responses to Comment 78. (Final Staff Report Appendix C, pp. C-2-4, C-15, C-18-19, and C-50-54.)
8.10	Caltrans would like to minimize the use of limited resources spent on reporting. Recommendation: Caltrans reporting for the trash amendment should be incorporated with the Caltrans TMDL Status Reporting efforts and simply limited to listing the areas where trash reduction has been achieved. No BMP performance, trash reduction calculations should be needed.		Trash is a prevalent pollutant in California. The Caltrans managed roadways are a generator of trash, so the implemented trash controls should be monitored to demonstrate effectiveness of controls and compliance with full capture system equivalency. However, the Trash Amendments would not preclude Caltrans from incorporating trash control plans and reporting into existing reporting efforts.
9.1	We would ask that State Board to consider amending the trash amendments to completely eliminate "regulatory source controls" from Track 2 and consider a more comprehensive approach that		Regulatory source controls have been omitted from the final proposed Trash Amendments. Please see also the General Response to Comment Letter 1 and response to Comment 1.3. Commenter's concerns relate to regulatory source controls and time extensions which have been removed from the proposed Final Trash Amendments. (Ocean Plan Amendment at

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	captures all types of trash in the waterways. With some modifications, Track 2 could be an effective means Of trash control. Specifically, Track 2 should explicitly prohibit MS4 permittees to rely on measures that the data shows are ineffective to reduce trash in the receiving waters; should require a certification Process for non---structural, institutional control elements; and Require additional monitoring to show that MS4 permittees using Track 2 are reducing trash in the receiving waters.		removed III.L.5; Part I ISWEBE at removed IV.A.6) Based on the revisions and discussions in the referenced responses, commenter's underlying arguments are not applicable to the Trash Amendments which will be considered for adoption by the Board and they will not be responded to in detail. The proposed final Trash Amendments were modified to incorporate the term 'full capture system equivalency', which is the trash load that would be reduced by Track 1. (See Ocean Plan and Part I ISWEBE, Definitions, "Full capture system equivalency.") To achieve full capture system equivalency, effective controls must be implemented. The monitoring requirements for Track 2 were modified to focus on the demonstrating the effectiveness of controls and compliance with full capture system equivalency. (See Ocean Plan at III.L.5.b-c and Part I ISWEBE at IV.L6.b-c.") These components of the Trash Amendments should minimize the commenter's concerns on ineffective controls. Additionally, the State Water Board will only be certifying full capture systems to ensure utilized full capture system met the design criteria and not non-structural controls. (See Ocean Plan Amendment and Part I ISWEBE, Definitions, "Full capture system.")
10.1	High generating land uses may vary by community across the state. There may be instances, especially in Phase II communities but also rural areas within a Phase I footprint, where some portion of the priority land use area may not in fact be a high trash-generating area. Rather than installing devices or institutional controls in areas where the return on the investment will be low, we recommend that the Trash Amendments allow for flexibility by establishing a process through which	The draft Trash Amendments say that "an MS4 may request that its permitting authority approve an equivalent alternative land use (…) if that MS4 has land use(s) within its jurisdiction that generate trash at rates that are equivalent to or greater than one or more of the priority land uses listed". This gives permittees	Trash is a priority pollutant across California. The State Water Board agrees that the Trash Amendments should provide flexibility for permittees to determine the most effective and efficient methods and controls to control trash discharges from the areas that have trash generation rates. Therefore, the Trash Amendments focus on a dual alternative "compliance track" approach to provide the flexibility to permittees to determine the most effective means of controlling trash while taking into consideration particular site conditions, types of trash, and the available resources for maintenance and operation. The priority land uses are based on lessons learned and extensive data collected from permittees with existing trash controls, either a Trash TMDL or permit conditions. The priority land uses include five categories of land uses that generate

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	permittees could petition their Regional Water Board to review the areas in question and give the public agency the authority to exempt such areas if they are found not to be high trash-generating. The exemption could include a 'sunset date' or a requirement to revisit priority areas at some frequency in the event the trash situation in those areas worsens. The exemption process could include visual assessments of the priority areas as a first step in determining where and what controls to put in place.	the option of adding land uses, but does not allow the exclusion of low generating sub-regions of an otherwise high trash land use. We suggest the addition of language to indicate "an MS4 may request its permitting authority to approve an exemption from treatment controls if that MS4 has areas within its jurisdiction that generate trash at rates that are significantly lower than estimated for the priority land use listed."	high amounts of trash. The State Water Board recognizes that other land uses may generate higher rates of trash. To allow for these occurrences the Trash Amendments include a provision for a MS4 permittee to focus on "equivalent alternate land uses" under both Track 1 and Track 2. (See Ocean Plan Amendment and Part I ISWEBE, Definitions Section, for "priority land uses.") Quantification measures such as street sweeping, mapping, and visual trash presence surveys can be used to prioritize these land uses for Track 1 or Track 2 controls. However, the State Water Board disagrees with providing an exemption of priority land uses that are shown to have low rates of trash generations. The permittee may apply the focus of trash controls to an equivalent alternate land uses. A priority land use that generates low trash amounts can be exchanged for another land us that generate equivalent or higher amounts of trash. (Ocean Plan Amendment and Part I ISWEBE definition of "equivalent alternate land uses.") The State Water Board understands that each priority land use across the state will generate trash at different amounts due to site specific conditions; however, the permittee would need to demonstrate effectiveness of existing controls and that existing controls are sufficient to meet the prohibition of discharge for trash.
10.2	Many MS4 permittees around the state have been working extensively with the Regional Water Boards to develop and implement watershed management programs, often based on watershed specific prioritization of pollutant and water quality conditions. These comprehensive watershed planning processes consider trash, as well as many other pollutants of concern (POCs). As drafted, the Proposed Trash Amendments would supersede and undermine existing watershed		Storm water plays an important role in the management of California's water resources. As the natural landscape and hydrology are modified to support California's growing population, there is an increased impact on water quality and supply. Storm water is a resource and must be treated accordingly. The main objective of treating storm water as a resource is to protect and restore watershed processes that are critical to watershed health. The State Water Board recognizes and supports extensive work that many MS4 Phase I and Phase II permittees are doing across the state to develop and implement watershed specific prioritization of pollutants and water quality conditions. The State of California, along with the State Water Board, recognizes that trash is a high priority pollutant that impairs the beneficial uses for aquatic life and

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	planning efforts, effectively determining that trash is the highest priority and taking resources away from the established watershed based priorities. The Proposed Trash Amendments need to recognize the value of current management programs and not divert resources away from ongoing successful efforts to control trash in our waterways. CASQA urges the State Water Board to allow MS4 programs with existing watershed-based management plans or POCs-focused water quality implementation plans to address trash in the prioritization context of those existing plans.		public health, causes an aesthetic nuisance, and reduces the economic value of California's recreation areas. Trash is a pervasive pollutant and one of the most easily recognized pollutants. Most importantly, trash is a controllable pollutant in storm water. The Trash Amendments do not supersede existing requirements and planning efforts. State Water Board believes the framework of the Trash Amendments allows trash control to be a compatible priority with existing watershed-based management plans and pollutant of concerns.
10.3	CASQA supports the approach to not requiring monitoring or performance demonstration for Track 1. In reality most permittees that select Track 2, will implement a combination of full capture devices and other control measures. The Trash Amendments should make it clear that permittees who select Track 2 do not need to monitor or demonstrate performance in those portions of their jurisdictions served by full capture devices. CASQA objects to the requirement for MS4 permittees to conduct receiving water monitoring. As noted, other sources contribute trash to receiving waters and imposing this requirement on MS4 permittees will		Please see Response to Comment 4.6 and 73.1.

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	not provide a definitive indication of the effectiveness of stormwater trash control programs. While MS4 permittees may want to conduct receiving water monitoring to demonstrate performance, it should not be mandated.		
10.4	It is essential that the program be developed in conjunction with a funding mechanism. Municipal stormwater agencies do not generate the trash and should not bear the full responsibility for funding and implementing the corrective measures. The State Water Board needs to assist with the development of funding sources for permittees to comply with the Trash Amendments. CASQA does not dispute the water quality benefits of controlling trash. However, the costs presented in the Staff Report and Economic Analysis exceed most communities' ability to fund. Grant funds have assisted many communities to install full capture devices. This type of competitive grant funding while valuable, takes a significant effort to win and manage. Grants, such as the Proposition 84, do not address the ongoing costs of managing and maintaining treatment devices. Proposition 218 currently precludes MS4 permittees from raising their fees for Stormwater management (where fees even exist). Even with the recent changes to Proposition		The State Water Board provides financial assistance through various State and federal loan and grant programs to help local agencies, businesses, and individuals meet the costs of water pollution control. The Public Resources Code requires that the Proposition 84 Storm Water Grant Program funds are used to provide matching grants to local public agencies for the reduction and prevention of storm water contamination to rivers, lakes, and streams. Please visit the following website for more information: http://waterboards.ca.gov/water_issues/program/grants_loans/prop84/index.shtml Additional financial assistance information including information on the Clean Water State Revolving Fund loans, is available at: http://www.waterboards.ca.gov/water_issues/programs/grants_loans/ CalRecycle administers funding programs to assist with waste disposable, specifically reducing beverage container litter in the waste stream. Information on the Beverage Container Recycling Grants is available at: http://www.calrecycle.ca.gov/bevcontainer/grants/ In addition, the Trash Amendments specify coordination of effort between Caltrans and MS4 in overlapping significant trash generating and/or priority land uses. Coordination with Caltrans will increase the avenues for funding.

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	218, the typical full capture devices are catch basin inserts and would not be considered eligible for the water supply exception resulting from AB 2403. CASQA recommends that the State Water Board partner with MS4 permittees to explore the creation of a non-competitive program to fund trash control measures. One such program that could serve as an example is the Used Oil Payment Program (OPP). CASQA strongly encourages the State Water Board to explore mechanisms to create economic incentives for producers of products determined to be the primary components of trash in the MS4 and water bodies.		Modifications to Proposition 218 are outside of the scope of these Trash Amendments. With the Storm Water Strategic Initiative, the State Water Board aims to improve program efficiency and effectiveness by providing more assistance to overcoming funding barriers. For a response to establishing a program similar to the Used Oil Payment Program, please see response to Comment 4.7.
10.5	CASQA recommends that the State Water Board create a list of certified devices prior to the adoption of the Proposed Trash Amendments or revise the language to indicate that any full capture device that meets the stated criteria fulfills the certification requirement. This latter approach has the further advantage of allowing the suite of allowable devices to be dynamic as permittees learn which devices prove more (or less) effective and allows manufacturers to modify their designs and introduce or remove devices from their product line. CASQA recommends that automatic certification be extended to any full		The certification process is to ensure that the general design of a full capture system is effective at capturing trash 5 mm or greater during the one-year one-hour storm event. The certification process will ensure resources are directed towards effective treatment controls to capture and remove trash. A list of certified devices such as what the commenter suggests is already incorporated by reference (e.g. systems certified by the Los Angeles Water Board). In addition to the certified full capture systems by the Los Angeles Water Board, the proposed final Trash Amendments have been modified to grandfather full capture systems listed in Appendix I of the Bay Area-wide Trash Capture Demonstration Project, Final Project Report (May 8, 2014). (Ocean Plan Amendment and Part I ISWEBE, Definition Section, “Full capture systems.”) These full capture systems can be found at: http://www.sfestuary.org/wp-content/uploads/2014/05/AppendixI.DevicesOffered.pdf.

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	trash capture device approved by a Regional Water Board to comply with existing NPDES permits. This certification can be extended for the life of the installed device.		The State Water Board is unaware of any other certifications issued by the State or Regional Water Boards. Blanket approval of any and all full capture systems included in a permit without additional review would not meet the State Water Board's goal of ensuring effective trash capture.
10.6	CASQA recommends that the State Water Board require that other regulated entities implement the Proposed Trash Amendments through a regulatory process external to the MS4 permits. The State Water Board should include provisions to require implementation of the Proposed Trash Amendments, not only through inclusion in MS4 permits, but through other NPDES Permits, WDRs, and Waiver Provisions.		Statewide the transport of trash through storm water systems to receiving waters is a substantial source of trash. The Trash Amendments specify provisions for NPDES permits issued pursuant to Federal Clean Water section 402(p). Statewide, nonpoint source discharges of trash cause less of an impact to state water than do point sources. However, at the local or regional level, nonpoint sources can be a substantial source of trash. "Dischargers without NPDES permits, WDRs, or waivers of WDRs must comply with [the] prohibition of discharge." (Ocean Plan Amendment at III.I.6.d; Part I ISWEBE at IV.A.2.d.) The Trash Amendments provide that a permitting authority may require such dischargers to implement any appropriate trash controls in areas or facilities that generate trash, which include, but are not limited to, high usage campgrounds, picnic areas, beach recreation areas, parks not subject to an MS4 permit, or marinas. (Ocean Plan Amendment at III.L.3; Part I ISWEBE at IV.A.4.)
10.7	CASQA recommends the State Water Board consider providing off ramps from the requirements for MS4 permittees that do not have trash impaired waters where the permittee can demonstrate they do not have a trash or litter problem. The Proposed Trash Amendments can recognize that many surface waters in the state are not impaired for trash and provide an option that if the MS4 permittees can demonstrate		See Response to Comment 10.1. Trash is a priority pollutant across California. The assertion about the lack of impaired waters skews the manner in which impairments are identified in California. Specifically, many water bodies have no data on which to base any impairment decision. Thus the lack of a determination of impairment may not be used as evidence of water quality not exceeding objectives.

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	any of the following the Amendments should not apply to that MS4. 1) The MS4 does not have any of the high trash generating land uses within its jurisdiction; or 2) The MS4 is currently meeting the discharge prohibition of no discharge of trash to surface waters of the State, or the deposition of trash where it may be discharged into surface waters of the State; or 3) The MS4's receiving waters meet the water quality objective of trash in amounts less than that adversely affecting beneficial uses or causing nuisance.		The Trash Amendments focus on a dual alternative "compliance track" approach to provide the flexibility to permittees to determine the most effective means of controlling trash while taking into consideration particular site conditions, types of trash, and the available resources for maintenance and operation. The priority land uses are based on lessons learned and extensive data collected from permittees with existing trash controls, either as trash TMDLs or permit conditions. Specifically if an MS4 does not have any priority land uses within its jurisdiction, then the MS4 permittee would not have either Track 1 or Track 2 trash control provision in the implementing permit. Treatment or institutional controls implemented to comply with existing permit conditions for the discharge of trash are a likely reason for low trash generation. The State Water Board understands that each priority land use across the state will generate trash at different amounts due to site specific conditions; however, the permittee would need to demonstrate to the permitting authority the effectiveness of existing controls and that existing controls are sufficient to meet the prohibition's compliance requirements. The State Water Board does not consider existing controls to be off ramps, but instead a clear demonstration that a permittee already has a trash control program to achieve the conditional prohibition of discharge of trash (e.g. the permittee has already achieved compliance with Track 2). Overall, the focus of the Trash Amendments is to control and reduce the amount of trash in California's surface waters. For a response to an MS4's receiving waters meeting the water quality objective for trash, please see Response to Comment 4.1.

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10.8	CASQA therefore requests the Proposed Trash Amendments be modified to either (1) provide Regional Water Boards the discretion to add additional time for implementation or (2) limit the timeframe in which Regional Water Boards can add additional priority land uses to the initial establishment of the permittee's program.		The Trash Amendments provide a time schedule of ten years from the effective date of the first implementing permit for MS4 Phase I and Phase II permittees to be in compliance with the prohibition of discharge. (Ocean Plan Amendment at III.L.5.a.2-3; Part I ISWEBE at IV.A.6.a.2-3.) The framework for the Trash Amendments focuses on trash control for priority land uses. (Final Staff Report at Sections 2.1-2.4.) In addition to the identified priority land uses, the Trash Amendments provide provisions for a permitting authority to determine that additional specific land uses or locations generate substantial amount trash to warrant additional trash controls by the permittee. Those locations may include parks, stadia, schools, and roads leading to landfills. (Ocean Plan Amendment at III.L.2.d; Part I ISWEBE at IV.A.3.d.) The State Water Board agrees that the draft Trash Amendments previously lacked clarity on the time schedule for such specific land uses or locations. To clarify the time schedule of additional specific land uses or locations, language was added to the proposed Trash Amendments specifying that the permitting authority has the discretion to determine a time schedule that shall occur as soon as practical for the determined location and shall be no later than ten years from the determination. (Ocean Plan Amendment at III.L.5.a.5; Part I ISWEBE at IV.A.6.a.5.)
10.9	The Proposed Trash Amendments propose narrative water quality objectives for the Inland Surface Waters, Enclosed Bays and Estuary Plan and the Ocean Plan, and proposes a prohibition of trash discharge in those Plans. The MS4 permittees would be considered in full compliance with the prohibition of trash discharge so long as the permittees were fully implementing		Please see response to Comment 4.1. Implementing Track 1 and Track 2 means that the permittees are in compliance with the prohibition. (Ocean Plan Amendment at III.I.6.a; Part I ISWEBE at IV.A.2.a.) The State Water Board is not proposing to add language to specify the MS4 permittees are in compliance with the receiving water limitations so long as they are fully implementing Track 1 or Track 2.

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	Track 1 or Track 2 (Chapter IV.B.2.a and Chapter III.I.6.a, of the ISWEBE Plan and Ocean Plan, respectively). However, the Proposed Trash Amendments do not indicate that meeting the discharge prohibition requirements would also mean the permittees are in compliance with receiving water limitations (i.e., meeting the water quality objectives). CASQA recommends adding language to the Proposed Trash Amendments indicating the MS4 permittees are in compliance with the receiving water limitations so long as they are fully implementing Track 1 or Track 2.		It may be appropriate for the permitting authority / water board to issue a permit that provides that a permittee is in compliance with a receiving water limitation based on compliance with the trash water quality objective so long as the permittee is in compliance with the trash-specific permit terms in the MS4 permit. Any such determination, however, would be limited to effluent limitations in locations within priority land uses because the permitting authority retains discretion to determine that specific land uses outside of the priority land uses generate substantial amounts of trash and require trash controls in such areas. (Ocean Plan Amendment at III.L.2.d; Part I ISWEBE at IV.A.3.d.)
10.10	It appears that the Proposed Trash Amendments will serve as an alternative to a TMDL, thereby preventing the need to develop trash TMDLs in the future. CASQA recommends the State Water Board add language to clarify the intent of the Proposed Trash Amendments with respect to the development of future TMDLs. It seems that implementation of the Proposed Trash Amendments represents a single regulatory action addressing MS4 permittee requirements thereby removing the need to develop wasteload allocations via a TMDL for MS4 permittees. CASQA recommends that language be included in the Proposed Trash Amendments stating that if the		The State Water Board expects the Trash Amendments will constitute adequate pollution control measures to meet water quality standards and serve as an alternative to a TMDL for water bodies listed as impaired for trash. Following adoption of the proposed Trash Amendments, a water body listed as impaired for trash on the 303(d) list (Category 5) could be moved to Category 4b, where the trash control requirements obviate the need for a TMDL. For the same reason, subsequent to adoption of the trash amendments, the State Water Board anticipates that any water segments added to the Integrated Report for the first time for trash impairment will be placed in Category 4b. Additionally, the U.S. EPA has expressed support with the anticipated approach to place waters impaired for trash in Category 4b as. See, for example, the U.S. EPA's Comment Letter 73 (Attachment thereto, page 3).

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	requirements in the Proposed Trash Amendments are being met, then no Trash TMDLs will be developed for those water bodies where the requirements are being fully implemented.		
10.11	The State Water Board should provide consistency between the water quality objectives and prohibitions by revising the trash prohibitions to include language that qualify that the trash discharges being prohibited and controlled by the specified implementation requirements, is the trash "in amounts that cause impairment of beneficial uses or conditions of nuisance in receiving waters."		Please see Responses to Comments 4.1 and 10.9.
10.12	CASQA requests that when the revised draft of the Trash Amendments is released for public review that the entire document, not just the changed text, be open for further comment to allow stakeholders to consider the whole of the revised proposal.		The public process for the development of the Trash Amendments has afforded extensive opportunity for stakeholder input: On June 26, 2007, October 7 and 14, 2010, the State Water Board held a public meetings and sought public input regarding a statewide regulatory effort to control trash in waters of the state, and solicited comments on the scope and content of the environmental information to be considered in the development of the project. The State Water Board convened a Public Advisory Group composed of ten stakeholders representing municipalities, California Department of Transportation, industry, and environmental groups. The Public Advisory Group met on July 26, 2011, August 30, 2011, October 12 and 13, 2011, May 22, 2012, August 13, 2012, and March 6, 2013 to provide comments on, and feedback to, the development of the proposed Trash Amendments and Draft Staff Report. In March, April, and May 2013, State Water Board held fourteen focused stakeholder meetings to provide an overview of the development of the proposed Trash

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			Amendments and to receive feedback on key issues prior to the development and distribution of the proposed Trash Amendments and the Draft Staff Report. On June 10, 2014, the State Water Board provided notice to members of the public and public agencies of the opportunity to submit written comments on the proposed Trash Amendments and the Draft Staff Report; the written comment period; and the dates for the public workshop and public hearing to receive oral comments and evidence regarding the proposed Trash Amendments. During the written public comment period, the State Water Board conducted a public workshop on July 16, 2014, and a public hearing on August 5, 2014, to solicit public comment and testimony regarding the proposed Trash Amendments and Draft Staff Report. The State Water Board is providing written responses to the written comment letters timely submitted and those late letters accepted for consideration. The regulations applicable to the State Water Board's certified exempt regulatory programs to comply with the California Environmental Quality Act provide the exclusive procedural requirements for the State Water Board's adoption of the proposed Trash Amendments. (23 Cal. Code Regs. §§ 3720-3780.) Additional public comment on the revised or added text contained in the proposed final Trash Amendments and SED is not required. Additional comment is required "only if recirculation would be required for an environmental impact report pursuant to California Code of Regulations, title 14, section 15088.5, in which case the board may limit any additional public comment to the significant new information contained in the recirculated Draft SED." (23 Cal. Code Regs. § 3779, subd. (e).) The recommended changes in the proposed final Trash Amendments and proposed Final Staff Report did not add "significant new information" and are responsive to prior extensive stakeholder input. As such the State Water Board is not providing a written comment period for the revisions made which constitute the proposed final

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			Trash Amendments and proposed Final Staff Report, and written comments will not be considered. The public may provide oral comments to the revisions contained in the proposed final documents at the meeting at which the State Water Board will consider adopting the proposed final Trash Amendments and approving the SED.
11.1	Add language to the proposed Trash Amendments indicating the permittees are in compliance with the receiving water limitation (water quality objective) so long as they are fully implementing Track 1 or Track 2.		Please see Responses to Comments 4.1 and 10.9.
11.2	The Los Angeles Regional Water Quality Control Board should be allowed to include permit provisions consistent with the Proposed Trash Amendments in areas where TMDLs exist if they desire without needing to reconsider the applicable TMDL(s).		The Los Angeles Water Board currently has the authority to reopen and consider existing trash TMDLs. The Trash Amendments provide direction to the Los Angeles Water Board to hold a public meeting to reconsider the scope of the TMDLs. The State Water Board does not intend to supersede the existing trash TMDLs with the adoption of the Trash Amendments, which expressly state that the trash control provisions contain therein do not apply to the waters within the jurisdiction of the Los Angeles Water Board for which trash TMDLs are in effect prior to the effective date of the Trash Amendments. (Ocean Plan Amendment at III.I.1.b; Part I ISWEBE at IV.A.1.b; see also Staff Report, Section 4.3.)
11.3	The Trash Amendments should recognize and allow for established prioritization schemes to be utilized in lieu of the proposed scheme if they have already been approved by the Regional Water Board or required in a permit without the need to provide additional documentation. The permittees are required to provide documentation as to the	e. If a regulated MS4 has a Regional Water Board approved or permit required prioritization scheme that differs from the priority land uses outlined in the amendment. the approved prioritization	The Water Boards are highly supportive of stakeholder-based watershed planning efforts that manage of storm water as a resource. The State Water Board is prioritizing trash control as a priority across California. The State Water Board believes the framework of the Trash Amendments allows prioritization of trash control to be compatible with existing watershed plans priorities. Specifically, the Trash Amendments encourage the use of multi-benefit projects that treat multiple pollutants, including trash, while infiltrating storm water runoff. In addition to the Trash Amendments, the State Water Board will continue

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	equivalency of the alternate land uses. It would be more efficient to allow the permittees to address the previously identified and Regional Board approved land uses without having to go through an additional and duplicative documentation procedure. Additionally, while the Proposed Trash Amendments provide flexibility for the permitting authorities to designate additional priority areas, it does not appear to allow for responsible agencies to lower the priority in certain areas. Local knowledge, supported by data, should be able to suffice as justification for jurisdictions to designate appropriate drainage areas as "non-priority" regardless of land use. The language should also provide flexibility to assign priorities based on metrics other than just land use if those metrics better address high trash generating areas.	scheme can be utilized in lieu of the priority land uses to comply with the Trash Amendments. Additionally, a regulated MS4 may determine that areas within priority land uses do not generate trash that accumulates in state waters (or in areas adjacent to state waters) in amounts that would either adversely affect beneficial uses, or cause nuisance. In the event that the regulated MS4 identifies such areas and is able to provide data supporting the finding, the permitting authority may waive the requirement for the MS4 to comply with Chapter IV.B.3.a CIII.L.2.a) with respect to the identified locations. The regulated MS4 shall submit documentation of the continued condition with annual reports as required under Chapter IV.B.7 (III.L.6).	to support multi-benefit projects and other sustainable alternative that infiltrate and treat storm water runoff through the Storm Water Strategic Initiative. Additionally, please see Response to Comment 4.4 for a discussion on "equivalent alternate land uses" to focus trash control to areas outside of "priority land uses" that generate higher amounts of trash. The State Water Board does not think the proposed language is necessary. (See Ocean Plan Amendment and Part I ISWEBE definition for "alternate equivalent land uses" within the "priority land uses" definition.)

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11.4	The Proposed Trash Amendments appear to require implementation of Track 1 or Track 2 for any storm drain that captures any runoff from a priority land use [Chapter IV.B.3.a.(l)/IV.B.3.a.(2) and Chapter III.L.2.a.(l)/Chapter III.L.2.a.(2) of the ISWEBE Plan and Ocean Plan, respectively] . This would trigger compliance requirements for a storm drain even if only a very small portion of a priority land use drains to the storm drain.	Recommendation: The Stakeholders recommend adding language to Chapter IV.B.3.a.(l)/IV.B.3.a.(2) and Chapter III.L.2.a.(l)/Chapter III.L.2.a.(2) of the ISWEBE Plan and Ocean Plan, respectively stating that permittees must address catchment areas where the priority land uses are greater than 25% of the total catchment area. Track 1: Install, operate and maintain full capture systems in their jurisdictions for all storm drains that captures runoff in catchment areas where ~~from one or more of the~~ priority land uses comprise >25% of the land area in the catchment in their jurisdictions; or Track 2: Install, operate, and maintain any combination of full capture systems, other treatment controls, institutional controls, and/or multi-benefit projects within either the jurisdiction of the MS4 permittee or within the	MS4 Phase I and Phase II permittees with regulatory authority over priority land uses will be required to comply with the prohibition of discharge by with Track 1 or Track 2. Track 1, which sets the performance standard, specifies that implementing trash controls in "all storm drains that capture runoff from one or more of the priority land uses in their jurisdiction." "In their jurisdiction" means that trash controls, specifically inserting treatment controls, are focused on locations within the right-of-way and publically owned land. The Trash Amendments specify that the primary activities need to be on industrial, commercial, and mixed urban on developed parcels as defined in the Trash Amendments. (Ocean Plan Amendment and Part I ISWEBE at definitions of “industrial”, “commercial”, and “mixed-urban”). Trash is a priority pollutant and all discharges, regardless of size are considered significant. The Trash Amendments are already focusing efforts on trash control by requiring controls on only priority land uses. Further reduction of areas requiring control to only portions of priority land use areas would not be consistent with the goal of the Trash Amendments. The State Water Board does not think the proposed language is necessary. See Staff Report sections, 2.4.1, 4.5, and 4.6.

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		jurisdiction of the MS4 permittee and contiguous MS4s permittees, so long as such combination achieves the same performance results as compliance under Track 1 would achieve for all storm drains that captures runoff in catchment areas where ~~from oa.e or more of the~~ priority land uses comprise >25% of the land area within the catchment ~~within such jurisdiction(s)~~.	
11.5	The Proposed Trash Amendments provide flexibility to permitting authorities to revise the priority land uses as well as define new trash sources. However, the Proposed Trash Amendments do not require the permitting authorities to provide significant justification of the changes. Allowing the permitting authorities to impose more stringent requirements without criteria to justify such requirements contradicts the establishment of consistent statewide trash requirements. A statewide plan that gives broad discretion to regional permitting authorities often results in uneven implementation of the plan.		Contrary to what is asserted in the comment, the proposed Trash Amendments do not allow permitting authorities "to revise the priority land uses" or "define new land uses." The Trash Amendments define "priority land uses" and provides that a permittee may apply to the permitting authority to implement the trash provisions in "alternative land uses." (Ocean Plan Amendment and Part I ISWEBE at the Definitions section.) The Trash Amendments acknowledge that trash may be generated from locations or land uses outside of the priority land uses and may require trash controls. The Trash Amendments provide discretion to the permitting authority to determine that such locations or land uses generate "substantial amounts of trash" and require trash controls. (Ocean Plan Amendment at III.L.2.d; Part I ISWEBE at IV.A.3.d.) The permitting authority's finding of "substantial amounts of trash" would be supported by its determination that

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	Recommendation: The Stakeholders recommend that the Proposed Trash Amendments should either eliminate the discretion or have very clear guidance on how the discretion should be used.		a permittee is causing or contributing to the violation of the statewide trash narrative water quality objective. The Trash Amendments would establish the framework for trash control across NPDES permits, WDRs, and waivers of WDRs. The Trash Amendments identify the trash control requirements which shall be incorporated into permits, WDRs, and waivers of WDRs, as applicable, due to permittee and discharger site-specific conditions. The discretion provided to permitting authorities within the Trash Amendments is fairly and adequately structured to reduce uneven implementation while providing flexibility necessary to address specific case-by-case circumstances (i.e., "substantial amounts of trash" and "alternative land uses.") As a result, the State Water Board does not support the recommendation.
11.6	Part (6) of the Priority Land Uses definition from the ISWEBE Plan and the Ocean Plan allows permittees to issue a request to the Los Angeles Regional Water Quality Control Board to comply with Chapter IV.B.3.a.I and Chapter III.J.2.a.I of the ISWEBE Plan and Ocean Plan, respectively, using alternate land uses equivalent to the defined Priority Land Uses. However, as written, the chapter references only allow the permittees to address the equivalent alternate land uses if utilizing Track 1. The references should be changed to allow the permittees to address the equivalent alternate land uses via Track 1 or Track 2. In addition, the chapter reference for the Ocean Plan is incorrect. The reference reads Chapter III.J.2.a.I, while it should		Regarding the recommendation that "[t]he references [in the Trash Amendments] should be changed to allow the permittees to address the equivalent alternate land uses via Track 1 or Track 2," the State Water Board agrees, pertinent revision has occurred in the proposed final Trash Amendments, and see Response to Comment 4.4. Regarding the recommended internal reference corrections, the State Water Board agrees and the Trash Amendments have been revised to reflect correct numbering and internal references for the Ocean Plan Amendment and Part 1 of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries.

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	read Chapter III.L.2.a.l.		
11.7	The Stakeholders recommend revise the language in the Proposed Trash Amendments (Chapter IV.B.7.b and Chapter III.L.6.b of the ISWEBE Plan and Ocean Plan, respectively) to allow for more flexibility in determining Track 2 performance and to remove the requirement for receiving water trash monitoring. In addition, remove "receiving waters" from Chapter IV.B.7.b.(5) and Chapter III.L.6.b.(5) of the ISWEBE Plan and Ocean Plan, respectively to read: "Has the amount of Trash in the MS4 decreased from the previous year? If not, explain why."		Please see Response to Comment 4.6.
11.8	The Stakeholders recommend adding language to the Proposed Trash Amendments requiring a permitting authority to consider revisions to the final compliance date of the Proposed Trash Amendments if new priority land uses are added during the duration of the compliance period.		Please see Response to Comment 10.8.
11.9	As drafted, the Proposed Trash Amendments would supersede existing stakeholder-based watershed planning efforts, effectively determining, without validation, that trash is the highest priority constituent throughout the Calleguas Creek Watershed and	The Stakeholders recommend including language after Chapter IV.B.3.a of the ISWEBE Plan and Chapter III.L.2.a of the Ocean Plan that states: A MS4 Permittee may request	See Response to Comment 10.7. The Water Boards are charged with protecting the beneficial uses of state waters from pollution and nuisance that may occur as a result of waste discharges in the region. The State of California, along with the State Water Board, recognizes that trash is a high priority pollutant that impairs the beneficial uses

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	potentially requiring the refocusing of resources from stakeholder developed priorities.	that compliance requirements for trash be established through a watershed prioritization and planning process outlined in MS4 permit requirements. This prioritization process would allow for evaluation of the trash in the context of other watershed priorities and provide a mechanism for modifying or reducing the requirements for compliance in accordance with the procedures outlined in the MS4 permit and an approved watershed plan. Through this process. monitoring data could be utilized to demonstrate that trash controls are not necessary for all priority land uses.	of aquatic life and public health, causes an aesthetic nuisance, and reduces the economic value of California's recreation areas. The presence of trash in surface waters, especially coastal and marine waters, is a serious issue in California. Trash discarded on land is frequently transported through storm drains to waterways, shorelines, the seafloor, and the ocean. Statewide and local studies have documented the presence of trash in state waters and the accumulation of land-based trash in the ocean. Street and storm drain trash studies conducted in regions across California have provided insight into the composition and quantity of trash that flows from urban streets into the storm drain system and out to adjacent waters. Trash is one of the most easily recognized pollutants and is a controllable pollutant in storm water. The Water Boards are highly supportive of stakeholder-based watershed planning efforts that manage of storm water as a resource. The State Water Board is prioritizing trash as a priority pollutant across California. The State Water Board believes the framework of the Trash Amendments allows prioritization of trash control to be a compatible with existing watershed plans priorities. Specifically, the proposed Trash Amendments encourage the use of multi-benefit projects that treat multiple pollutants, including trash, while infiltrating storm water runoff. Watershed plans, such as Water Quality Improvement Plans, would allow for trash to be selected as a high priority water quality issue and provide adaptive management and monitoring of trash. The State Water Board does not support the recommendation.
11.10	The Stakeholders recommend that a more extensive list of certified devices should be prepared prior to the adoption of the Proposed Trash Amendments. The Stakeholders also recommend refining the full-capture device certification process		Please see Response to Comment 10.5. The Trash Amendments specify additional devices as explained in Response to Comment 10.5 and the State Water Board declines the recommendation to revise the Trash Amendment to specify that any full-capture device that meets

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	to streamline the certification process as much as possible by, for example, indicate that any full-capture device that meets the stated criteria fulfills the certification requirement.		the stated criteria fulfills the certification requirement.
11.11	The Stakeholders recommend including language in the Proposed Trash Amendments to clarify that existing trash controls can be considered when determining compliance with the Trash Amendments.		Please see Response to Comment 10.7. Additionally, existing controls may count as long as they reduce trash to achieve with full capture system equivalency. (See Ocean Plan Amendment and Part I ISWEBE definition of "full capture system equivalency.") See Responses to Comments 4.6 and 6.2
11.12	The Stakeholders recommend the State Board adds additional language to clarify the intent of the Proposed Trash Amendments with respect to the development of future TMDLs. The Stakeholders recommend adding language to the Proposed Trash Amendments stating that if the requirements in the Proposed Trash Amendments are being met, then no Trash TMDLs will be developed for those water bodies where the requirements are being fully met.		Please see Response to Comment 10.10. The State Water Board does not support the proposed revision to the final Trash Amendments. Listing waters as impaired and placement in Category 5 or 4b occurs through separate board consideration and action over which U.S. EPA has review and final approval authority.

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11.13	There are several incorrect section references in the ISWEBE Plan. Recommendation: For the ISWEBE Plan, all references to Chapter IV.C.3, Chapter IV.C.3.a, or Chapter IV.C.3.b should be revised to Chapter IV.B.3, Chapter IV.B.3 .a., and Chapter IV .B.3.b, respectively.	There are incorrect reference sections in Appendix E for the ISWEBE Plan. All references to Chapter IV.C.3, Chapter IV.C.3.a, or Chapter IV.C.3.b should be revised to Chapter IV.B.3, Chapter IV.B.3 .a., and Chapter IV .B.3.b, respectively.	The State Water Board agrees that the proposed draft Trash Amendments contained several incorrect internal references. Although differently than that recommended, the references have been corrected to accurately reflect the amendments as they comprise an amendment to the Ocean Plan and Part I of the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries.
12.1	Numerous cities have already successfully demonstrated continual attainment of trash reduction well in excess of 80 percent from pre-TMDL levels, but have no guidance from the State or Regional Boards on what constitutes achievement of the final "zero" trash discharge. The proposed Amendments are an opportunity for the State Board to provide such guidance. We strongly request the "except for the Los Angeles River Watershed" wording be removed and (for cities with demonstrable trash reduction attainments) the Trash TMDL deadline be extended until after the Los Angeles Regional Board "reconsiders the scope of its Trash TMDL".		Please see Response to Comment 6.7.
12.2	The Amendments could be improved by allowing more flexibility on where BMPs (like catch basin screens and baskets) are installed. Trash surveys and Daily Generation Rate		Trash is a priority pollutant across California. The State Water Board agrees that the Trash Amendments should provide flexibility for permittees to determine the most effective and efficient methods and controls to control trash discharges from the areas that have trash generation rates. Therefore, the

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	studies have been conducted over the past few years and have clearly shown trash generation of land uses varies from community to community and even within different areas of the same community. High priority trash areas such as all commercial and industrial areas are too broad a definition. The goal should be to install the trash catching devices where they are really needed-irrespective of land uses. Using litter surveys (such as the Keep America Beautiful Survey) or Daily Generation Rate studies as described in the Los Angeles River Watershed Trash TMDL or the Minimum Frequency of Assessment and Collection (MFAC) should be used to identify land uses that are really generating trash. It may be beneficial to develop a standardized survey.		proposed Trash Amendments focus on a dual alternative "compliance track" approach to provide the flexibility to permittees to determine the most effective means of controlling trash while taking into consideration particular site conditions, types of trash, and the available resources for maintenance and operation. (Ocean Plan Amendment at III.L.2.a; Part I ISWEBE at IV.A.3.a.) The priority land uses are based on lessons learned and extensive data collected from permittees with existing trash controls, either a Trash TMDL or permit conditions. The priority land uses include five categories of land uses that generate high amounts of trash. (See Trash Amendments, Definitions section for “priority land uses.”) The State Water Board recognizes that other land uses may generate higher rates of trash. To allow for these occurrences, the Trash Amendments include a provision for a MS4 permittee to focus on “equivalent alternate land uses” under both Track 1 and Track 2. (See Trash Amendments, Definitions section for “alternate equivalent land uses.”) Quantification measures such as street sweeping, mapping, and visual trash presence surveys can be used to prioritize these land uses for Track 1 or Track 2 controls. The “equivalent alternate land uses” should provide the requested flexibility for trash control measures. See Trash Amendments, Definitions section for “alternate equivalent land uses.”)
12.3	The Amendments imply, but need to be made clearer that the burden for control of these plastic pellets is on the manufacturer and transporter. The cities within the Los Angeles River Watershed are already required to capture trash larger than X inch, and any smaller would result in significant screen clogging issues which would in turn would result in		The Trash Amendments state: "This prohibition of discharge applies to the discharge of preproduction plastic by manufacturers of preproduction plastics, transporters of preproduction plastics, and manufacturers that use preproduction plastics in the manufacture of other products to surface waters of the State [...] ." (Ocean Plan Amendment at III.I.6.e; Part I ISWEBE at IV.A.2.e.) The Trash Amendments clearly provide that the prohibition applies to manufacturers and transporters of preproduction plastics who discharge into surface waters. The prohibition of discharge on preproduction

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	flooding issues.		plastics provides a clear enforcement mechanism for the Water Boards if there is a discharge of preproduction plastics to waters of the state. In event there is a discharge of preproduction plastics in a municipality, the Water Boards may be notified to follow with an investigation and necessary enforcement. All facilities with the potential to discharge preproduction plastics must continue to comply with the "Preproduction Plastic Debris Program" under Water Code section 13367(a) and the requirements in the IGP (Order No. 2014-0057-DWQ) to comply with the prohibition concerning preproduction plastics.
13.1	Requiring the reopening of the LA Trash TMDL to utilize the narrative WQO in the Proposed Trash Amendments would minimize potential future impacts after the final compliance date of the LAR Trash TMDL. In addition, this would allow for the statewide consistency the Proposed Trash Amendments aim to provide while ensuring that responsible parties in the Los Angeles River watershed are held to the same standard as those in the remainder of the state.		The Los Angeles River Watershed and Ballona Creek Trash TMDLs are nearing final compliance (September 30, 2016 and September 30, 2015, respectively) and have made extensive success in trash reductions. The proposed Trash Amendments do not direct a public meeting by the Los Angeles Water Board to reconsider the scope of those two trash TMDLs. (See Ocean Plan Amendment III.L.1 and Part I ISWEBE, Definitions, "Full capture system equivalency.") Additionally, please see Response to Comment 6.7.
13.2	The City feels the responsible parties of the LA Trash TMDL should be required to implement BMPs in priority land use areas consistent with the remainder of the state. Implementing BMPs in these areas would allow the City to focus resources to address areas generating trash rather than distributing resources throughout the		Please see Responses to Comments 6.7 and 13.1.

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	City in areas that may not generate significant levels of trash. Implementing BMPs only in priority land use areas would also allow for the statewide consistency the Proposed Trash Amendments aim to provide. Further, it would allow the City to use scarce resources to meet other MS4 Permit and other TMDL obligations for constituents such as bacteria and metals.		
13.3	The City of Burbank (City) recommends adding language to the Proposed Trash Amendments indicating the permittees are in compliance with the receiving water limitations so long as they are fully implementing Track 1 or Track 2.		Please see Responses to Comments 4.1 and 10.9.
13.4	The City of Burbank recommends the LARWQCB should be allowed to include permit provisions consistent with the Proposed Trash Amendments in areas where TMDLs exist without needing to reconsider the applicable TMDL(s).		The Trash Amendments would apply to all surface waters in the state, with the exception of those waters within the jurisdiction of the Los Angeles Water Board that have trash TMDLs in effect prior to the Trash Amendments. The fifteen trash and debris TMDLs in the Los Angeles Region have more stringent provisions than the Trash Amendments. The Trash Amendments do not apply to existing trash TMDLs in the Los Angeles Region; however, the Trash Amendments direct the Los Angeles Water Board to reconsider the scope of its trash and debris TMDLs within one year of the Trash Amendments' effective date and focus its permittees' trash control efforts on high trash generation areas rather than all areas within each permittee's jurisdiction. The reconsideration would occur for all existing trash TMDLs, except for the Los Angeles River Watershed and Ballona Creek Trash TMDLs. Additionally, the Los Angeles Water Board has the authority to reconsider the scope of the existing trash and debris TMDLs in lieu of the Trash Amendments. Please see Response to Comment 6.7.

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13.5	The Proposed Trash Amendments appear to require implementation of Track 1 or Track 2 for any storm drain that captures any runoff from a priority land use [Chapter IV.B.3.a.(1)/IV.B.3.a.(2) and Chapter III.L.2.a.(1)/Chapter III.L.2.a.(2) of the ISWEBE Plan and Ocean Plan, respectively]. This would trigger compliance requirements for a storm drain even if only a very small portion of a priority land use drains to the storm drain. Recommendation: The City recommends adding language to Chapter IV.B.3.a.(1)/IV.B.3.a.(2) and Chapter III.L.2.a.(1)/Chapter III.L.2.a.(2) of the ISWEBE Plan and Ocean Plan, respectively stating that permittees must address catchment areas where the priority land uses are greater than 25% of the total catchment area.		Please see Response to Comment 11.4.
13.6	The Proposed Trash Amendments provide flexibility to permitting authorities to revise the priority land uses as well as define new trash sources (Chapter IV.B.3.d of the ISWEBE Plan and Chapter III.L.2.d of the Ocean Plan). However, the Proposed Trash Amendments do not require the permitting authorities to provide significant justification of the changes. Allowing the permitting authorities to impose more stringent requirements without criteria to		Please see Response to Comment 11.5.

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	justify such requirements contradicts the establishment of consistent statewide trash requirements. A statewide plan that gives broad discretion to regional permitting authorities often results in uneven implementation of the plan. Recommendation: The City recommends that the Proposed Trash Amendments should either eliminate the discretion or have very clear guidance on how the discretion should be used (e.g., the permitting authority must provide sufficient data to justify the addition of land uses).		
13.7	The City recommends adding language to the Proposed Trash Amendments requiring a permitting authority to consider revisions to the final compliance date of the Proposed Trash Amendments if new priority land uses are added during the duration of the compliance period.		Please see Response to Comment 10.8.
14.1	The intent of this letter is to express our support for the comments of the Venture Countywide Stormwater Quality Program, the California Stormwater Quality Association (CASQA), and Calleguas Creek Watershed Stakeholders. In particular, based on our experience implementing requirements of the trash TMDL, we strongly support the use of the narrative water quality objective as proposed, which		The State Water Board is appreciative of the support for the narrative water quality objective and Track 2. Please see the Responses to Comment Letters 4, 11, and 75.

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	provides a clear, concise definition from which municipalities can prioritize management decisions. We also believe that providing flexibility in establishing monitoring and effectiveness evaluation programs under Track 2 will result in more effective and efficient implementation of the proposed Amendments.		
14.2	The proposed Trash Amendments provide a narrative water quality objective (WQO) in Chapter III.B and Chapter II.C of the ISWEBE Plan and Ocean Plan, respectively, and a prohibition of trash discharge in Chapter IV.B.2 and Chapter III.I.6 of the ISWEBE Plan and the Ocean Plan respectively. The permittees would be considered in full compliance with the prohibition of trash discharge so long as the permittees were fully implementing Tack 1 or Track 2 (Chapter IV.B.2.a and Chapter III.I.6.a, of the ISWEBE Plan and Ocean Plan, respectively). However, the proposed Trash Amendments do not indicate that meeting the discharge prohibition requirements would also mean the permittees are in compliance with receiving water limitations. Recommendation: The City recommends adding language to the proposed Trash amendments indicating the permittees are in compliance with the receiving water		Please see Response to Comments 4.1 and 10.9.

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	limitations so long as they are fully implementing Track 1 or Track 2.		
14.3	The proposed Trash Amendments require permitting authorities to re-open, re-issue or newly adopt NPDES permits to include requirements consistent with the proposed Trash Amendments (Chapter IV.B.5 and Chapter III.L.4 of the ISWEBE Plan and the Ocean Plan, respectively). The proposed Trash Amendments also include a requirement for the Los Angeles Regional Water Quality Control Board to convene a public meeting to reconsider the scope of the TMDLs to include provisions consistent with the proposed Trash amendments (Chapter IV.B.1.b.(2) and Chapter III.L.1.b.(2) of the ISWEBE Plan and the Ocean Plan, respectively). However, by the time the proposed trash amendments become effective and the Los Angeles Regional Water Quality Control Board modifies the TMDL(s), it will likely be too late to meaningfully impact the implementation of compliance measures for point source-responsible permittees subject to the TMDL(s). As a result, having a mechanism to streamline incorporation of permit requirements consistent with the proposed Trash amendments in lieu of TMDL requirements, if requested by the		Please see Responses to Comments 6.7 and 13.4.

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	permittees, should be included. Recommendation: The Los Angeles Regional Water Quality Control Board should be allowed to include permit provisions consistent with the proposed Trash amendments in areas where TMDLs exist if they desire without needing to reconsider the applicable TMDL(s).		
14.4	The Ventura MS4 Permit required permittees to develop a prioritization scheme for implementation of trash controls. The Trash Amendments should recognize and allow for established prioritization schemes to be utilized in lieu of the proposed scheme if they have already been approved by the Regional Water Board or required in a permit without the need to provide additional documentation. Part (6) of the Priority Land Uses definition from the ISWEBE Plan and the Ocean Plan allows permittees to issue a request to the Los Angeles Regional Water Quality Control Board to Comply with the Chapter IV.B.3.a.1 and the Chapter III.J.2.a.1 of the ISWEBE Plan and the Ocean Plan, respectively, using alternate land uses equivalent to the defined Priority Land Uses. However, the permittees are required to provide documentation as to the equivalent	e. If a regulated MS4 has a Regional Water Board approved or permit required prioritization scheme that differs from the priority land uses outlined in the amendment, the approved prioritization scheme can be utilized in lieu of the priority land uses to comply with the Trash Amendments. Additionally, a regulated MS4 may determine that areas within a priority land use do not generate trash that accumulates in state waters (or in areas adjacent to state waters) in amounts that would either adversely affect beneficial uses, or cause nuisance. In the	The State Water Board is pleased that the Venture MS4 Permit (No. CAS004002) requires a prioritization of catch basin designated as consistently generating highest, moderate, and low volumes of trash. The permit requires that permittees submit a map or list of catch basins with their GPS coordinates and their designation. The map or list shall contain the rational or data to support designations. As this was due July 8, 2011, Venture MS4 Permit permittees should have a detailed understanding and data to support where trash is generated at high levels. The focus of the proposed Trash Amendments is to control the discharge of trash from the areas within MS4 that generates the highest amounts of the trash. The proposed Trash Amendments focus on implementing trash controls in five “priority land use” types, namely high-density residential, industrial, commercial, mixed urban, and public transportation. (Ocean Plan Amendment and Part I ISWEBE definition for “priority land uses.”) The State Water Board understands that trash generation maybe higher in other locations than the five priority land use types. For those situations, a permittee can substitute priority land uses for alternate equivalent land uses. Approval of alternate equivalent land uses is at discretion of the permitting authority with supporting evidence. (See Ocean Plan Amendment and Part I ISWEBE definitions for “priority land uses.”) For the Ventura MS4 Permit, the Los Angeles Water Board could approve determined alternative equivalent

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	of the alternate land uses. It would be more efficient to allow the permittees to address the previously identified and approved by Regional Water Board land uses without having to go through an additional documentation procedure. Additionally, while the proposed Trash Amendments provide flexibility for the permitting authorities to designate additional priority areas, it does not appear to allow for responsible agencies to lower the priority in certain area. Local knowledge, supported by data, should be able to suffice as justification for jurisdictions to designate appropriate drainage areas as "non-priority" regardless of land use. Recommendations: Modify language in Chapter IV.B.3 (ISWEBE Plan) and Chapter III.L.2 (Ocean Plan) and by adding Chapter IV.B.3.e and Chapter III.L.2.e, respectively (see Recommended Language).	event that the regulated MS4 identifies such areas and is able to provide data supporting the finding, the permitting authority may waive the requirement for the MS4 to comply with the Chapter IV.B.3.a (III.L.2.a) with respect to the identified locations. The regulated MS4 shall submit documentation of the continued condition with annual reports are required under Chapter IV.B.7 (III.L.6).	land uses for permittees based on information that was collected and presented as required in the Ventura MS4 Permit No. CAS004002. The State Water Board does not think the proposed language is necessary. Additionally, please see Response to Comment 11.3.
14.5	Part (6) of the Priority Land Uses definition from the ISWEBE Plan allows for permittees to issue a request to the Los Angeles Regional Water Quality Control Board to comply with Chapter IV.B.3.a.1 of the ISWEBE Plan using alternate land uses equivalent to the defined Priority Land uses. However, as written, the Chapter reference for the ISWEBE Plan only allows the	Recommendations: 1) Modify the Chapter reference in Part (6) of the Priority Land Uses definition as such: ... comply under Chapter IV.B.3.a.1 and Chapter IV.B.3.a.2. 2) Modify the Chapter reference in Part (6) of the Priority Land Uses definition as	Please see Responses to Comments 4.4 and 11.13.

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	permittees to address the equivalent alternate land uses if utilizing Track 1. The reference should be changed to allow the permittees to address the equivalent alternate land uses via Track 1 or Track 2. In addition, the chapter reference is incorrect. The reference reads Chapter III.J.2.a.1, while it should read Chapter III.L.2.a.1. Recommendations: 1) Modify the Chapter reference in Part (6) of the Priority Land Uses definition as such:...comply under Chapter IV.B.3.a.1 and Chapter IV.B.3.a.2. 2) Modify the Chapter reference in Part (6) of the Priority Land Uses definition as such: ...comply under Chapter III.~~J~~L.2.a.1 and Chapter III.L.2.a.2.	such: comply under Chapter III.JL.2.a.1 and Chapter III.L.2.a.2.	
14.6	Demonstration of performance under Track 2 should not be limited to monitoring BMP performance (e.g., counting, weighing, measuring volume) as demonstrating effectiveness of trash BMPs. The monitoring is extremely difficult and expensive. Permittees should be allowed to propose the method of demonstrating performance in their plan. For instance, rigorous visual assessments have proven to be effective tools in some jurisdictions. A current effort in the Bay Area, funded by a Proposition 84 grant, may provide additional tools for permittees to incorporate into their		Please see Response to Comment 4.6.

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	plans in the future. (The project is expected to be completed in 2017.) The City objects to the requirement for stormwater permittees to conduct receiving water monitoring. Based on our Trash TMDL implementation experience, other sources contribute trash to receiving waters and imposing this requirement on stormwater permittees will not provide an indication of effective stormwater trash control programs. While stormwater permittees may want to conduct receiving water monitoring to demonstrate performance, it should not be mandated. Recommendation: The City recommends the State Water Board revise the language in the proposed Trash Amendments (Chapter IV.B.7.b and Chapter III.L.6.b of the ISWEBE Plan and Ocean Plan, respectively) to allow for more flexibility in determining Track 2 performance and to remove the requirement for receiving water trash monitoring. Also, remove "'s receiving waters" from Chapter IV.B.7.b. (5) of the ISWEBE Plan and the Ocean Plan to read: "Has the amount of Trash in the MS4 decreased from the previous year? If not, explain why".		
14.7	The proposed Trash Amendments indicate that the State Water Board would take responsibility for the certification process for full capture		The State Water Board agrees that full capture system certification should be streamlined and consistent statewide. The purpose of the certification process is to provide consistency statewide in the systems that will be installed and

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	systems, but those full capture systems previously certified by the Los Angeles Regional Water Quality Control Board would remain certified for use by permittees as a compliance method (Chapter IV.B.1.b.(1) and Chapter III.L.1.b.(2) of the ISWEBE Plan and Ocean Plan, respectively). Full-capture devices vary widely in capital and maintenance costs. Therefore, having a better idea of the devices that will be certified is necessary for developing credible costs estimates to inform permittees whether to commit to Track 1 or Track 2. Alternatively, the language could be revised to indicate that any full-capture device that meets the stated criteria fulfills the certification requirement. Additionally, the time frame for obtaining certification is a concern. The Executive Officer approval process should have a rapid turnaround time to allow permittees to move forward with planning and installation within the time schedule granted. Recommendation: The City recommends that a more extensive list of certified devices should be prepared prior to the adoption of the proposed Trash Amendments. The City also recommends refining the full-capture device certification process to streamline the certification process as much as		assurance that valuable resources are being spent on properly functioning full capture systems that achieve the goals of the Trash Amendments. Full capture systems with a new design should be certified by the Executive Director of the State Water Board. It is not intended for each installation to be certified, but for the full capture system design to be certified. Once the certification request letter is submitted to the Executive Director of the State Water Board, the request will be addressed in a timely manner to not impact permittee planning and installation. (See Ocean Plan Amendment and Part I ISWEBE definition "full capture system.") Additionally, please see Response to Comment 10.5.

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	possible.		
14.8	The City has implemented various trash control measures within the Calleguas Creek Watershed. However, the proposed Trash Amendments do not havea provision that details how existing trash control measures would be utilized for evaluating compliance with the proposed Trash Amendments. Recommendation: The City recommends including language in the proposed Trash Amendments to clarify that existing trash controls can be considered when determining compliance with the Trash Amendments.		Please see Response to Comment 10.7.
14.9	It appears that the proposed Trash Amendments will serve as an alternative to a Total Maximum Daily load (TMDL), thereby preventing the need to develop trash TMDLs in the future. It seems that implementation of the proposed Trash Amendments represents a single regulatory action addressing MS4 permittee requirements thereby removing the need to develop wasteload allocations via a TMDL for MS4 permittees. Recommendation: The City recommends the State Board add additional language to clarify the intent of the proposed Trash Amendments with respect to the development of future TMDLs. We also recommend adding language to		Please see Response to Comment 10.10.

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	the proposed Trash Amendments stating that if the requirements in the proposed Trash Amendments are being met, then no Trash TMDLs will be developed for those water bodies where the requirements are being fully met.		
15.1	The City of Capitola supports: • The narrative water quality objective. • The option of developing and implementing regulatory source controls. • The potential for time extensions. • Use of priority land uses.		The State Water Board appreciates the support the narrative water quality objective and priority land uses. Regulatory source controls and time extensions have been omitted from the final proposed Trash Amendments. See also the General Response to Comment Letter 1 and Response to Comment 1.2.
15.2	Capitola requests the State Water Resources Control Board to provide all agencies more time to work together and develop a more flexible policy to address trash that is aligned with local planning efforts, instead of a 'one size fits all' approach.		The proposed final Trash Amendments have been crafted with intention of flexibility and statewide consistency to target trash control to locations that generate the highest amounts of trash. The duel track compliance approach provides the requested flexibility to not be a 'one-size fits all' approach. As proposed, the Trash Amendments provide for a two track compliance approach to achieve the effective removal of trash in locations that generate high trash rates. There are five priority land uses identified in the Trash Amendments include high-density residential dwellings, commercial, industrial, mix-urban, and public transportation stations. Areas such as low-density residential and suburban were not included in order to focus limited resources to areas that generate the most trash. Track 1 requires the installation of full capture systems on storm drains which capture runoff from priority land uses and that adhere to specified requirements. Track 2 permits municipalities to adjust to their available resources and provides flexibility to develop a diverse combination of treatment and institutional controls. Please see Responses to Comments 10.2, 10.7, and 11.9.

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15.3	Delay until a funding source is identified to provide for the implementation or ongoing maintenance of the structural controls required to capture trash. Limited local resources shifted from local priority efforts to address trash is a disconnect between local and statewide planning efforts.		Please see Response to Comment 10.4.
15.4	The Proposed Trash Amendments provide a narrative water quality objective (WQO) in Chapter III.B and Chapter II.C of the ISWEBE Plan and Ocean Plan, respectively and a prohibition of trash discharge in Chapter IV.B.2 and Chapter III.I.6 of the ISWEBE Plan and Ocean Plan, respectively. The permittees would be considered in full compliance with the prohibition of trash discharge so long as the permittees were fully implementing Track 1 or Track 2 (Chapter IV.B.2.a and Chapter III.I.6.a, of the ISWEBE Plan and Ocean Plan, respectively). However, the Proposed Trash Amendments do not indicate that meeting the discharge prohibition requirements would also mean the permittees are in compliance with receiving water limitations (i.e., meeting the WQO). This could result in permittees being subject to a Trash TMDL for the receiving water, even if in compliance with permittees' MS4 Permit. Recommendation: The City		Please see Response to Comments 4.1 and 10.9.

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	of Capitola recommends adding language to the Proposed Trash Amendments indicating the permittees are in compliance with the receiving water limitations so long as they are fully implementing Track 1 or Track 2.		
15.5	As defined in the Proposed Trash Amendments, the predefined priority areas may not be appropriate for all jurisdictions and does not consider local knowledge of receiving water conditions and previous data collection efforts. As currently drafted, the Proposed Trash Amendments assume that there is a problem in the defined priority areas, effectively forcing a costly "one size fits all" approach onto the jurisdictions. The approach should allow for more local flexibility in this prioritization. Additionally, the expected costs to implement the Proposed Amendments will be substantial and the value of these requirements are uncertain, given the current receiving water priorities developed through the stakeholder process. As drafted, the Proposed Trash Amendments would supersede existing stakeholder-based watershed planning efforts, effectively determining, without validation, that trash is the highest priority in all watershed areas and potentially requiring the refocusing of resources from stakeholder		Please see Responses to Comments 11.9 and 15.2.

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	developed priorities. Recommendation: The City of Capitola recommends including language after Chapter IV.B.3.a of the ISWEBE Plan and Chapter III.L.2.a of the Ocean Plan that states: A MS4 Permittee may request that compliance requirements for trash be established through a watershed prioritization and planning process outlined in MS4 permit requirements. This prioritization process would allow for evaluation of the trash in the context of other watershed priorities and provide a mechanism for modifying or reducing the requirements for compliance in accordance with the procedures outlined in the MS4 permit and an approved watershed plan. Through this process, monitoring data could be utilized to demonstrate that trash controls are not necessary for all priority land uses.		
15.6	The Proposed Trash Amendments appear to require implementation of Track 1 or Track 2 for any storm drain that captures any runoff from a priority land use (Chapter IV.B.3.a.(l)/IV.B.3.a.(2) and Chapter III.L.2.a.(l)/Chapter III.L.2.a.(2) of the ISWEBE Plan and Ocean Plan, respectively). This would trigger compliance requirements for a storm drain even if only a very small portion of a priority land use drains to	Recommendation: The City of Capitola recommends adding language to Chapter IV.B.3.a.(l)/IV.B.3.a.(2) and Chapter III.L.2.a.(1)/Chapter III.L.2.a.(2) of the ISWEBE Plan and Ocean Plan, respectively, stating that permittees must address	Please see Response to Comment 11.4.

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	the storm drain.	catchment areas where the priority land uses are greater than 25% of the total catchment area. (1) Track 1: Install, operate and maintain full capture systems in their jurisdictions for all storm drains that capture runoff in catchment areas where priority land uses comprise >25% of the land area in the catchment; or (2) Track 2: Install, operate, and maintain any combination of full capture systems, other treatment controls, institutional controls, and/or multi-benefit projects within either the jurisdiction of the MS4 permittee or within the jurisdiction of the MS4 permittee and contiguous MS4s permittees, so long as such combination achieves the same performance results as compliance under Track 1 would achieve for all storm drains that capture runoff in catchment areas where priority land uses comprise >25% of	

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		the land area within the catchment.	
15.7	The Proposed Trash Amendments, in Chapter IV.B.7.b and Chapter III.L.6.b of the ISWEBE Plan and Ocean Plan, respectively, require permittees implementing Track 2 to monitor to demonstrate mandated BMP performance results; effectiveness of the full capture systems, other structural BMPs, institutional controls, and/or multi-benefit projects; and compliance with performance standards. In addition, the permittees must monitor the amount of trash in receiving waters. Demonstration of performance under Track 2 should not be limited to monitoring as demonstrating effectiveness of trash BMPs through monitoring is extremely difficult. Permittees should be allowed to propose the method of demonstrating performance in their plan. In addition, receiving water monitoring should not be required since other sources contribute trash. While a permittee may want to conduct receiving water monitoring to demonstrate performance, it should not be mandated in case other methods are appropriate (e.g. pounds of trash removed through a control measure). Recommendation: The City of Capitola recommends the State Water Board revise the language in the Proposed Trash		Please see Response to Comment 4.6.

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	Amendments (Chapter IV.B.7.b and Chapter III.L.6.b of the ISWEBE Plan and Ocean Plan, respectively) to allow for more flexibility in determining Track 2 performance and to remove the requirement for receiving water trash monitoring.		
15.8	It appears that the Proposed Trash Amendments will serve as an alternative to a TMDL, thereby preventing the need to develop trash TMDLs in the future. If additional language were included to clarify the intent of the Proposed Trash Amendments with respect to the development of future TMDLs, then implementation of the Proposed Trash Amendments represents a single regulatory action addressing MS4 permittee requirements thereby removing the need to develop wasteload allocations via a TMDL for MS4 permittees. Recommendation: The City of Capitola recommends that language be added to clarify the intent of the Proposed Trash Amendments stating that if the requirements in the Proposed Trash Amendments are being met, then no Trash TMDLs will be developed for those water bodies where the requirements are being fully implemented.		Please see Response to Comment 10.10.
16.1	The Trash Amendment prioritizes areas solely based on land use designations. This approach		The State Water Board agrees that the Trash Amendments should provide flexibility for permittees to determine the most effective and efficient methods and controls to control trash

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	assumes that all areas within one land use category generate the same amount of trash. Local knowledge and experience shows that this is not the case, and other factors should be taken into consideration. Data available from street sweeping, storm drain cleaning, and other information should be used to prioritize high-trash volume areas in each jurisdiction. Identifying actual priority areas will result in higher efficiency and effectiveness and will achieve the goals at the shortest possible time. Recommendation: The City of Chula Vista recommends that flexibility be provided for jurisdictions to use available data to prioritize high-trash volume areas of their jurisdiction.		discharges from the areas that have trash generation rates. Therefore, the Trash Amendments focus on a dual alternative "compliance track" approach to provide the flexibility for permittees to determine the most effective means of controlling trash while taking into consideration particular site conditions, types of trash, and the available resources for maintenance and operation. The priority land uses are based on lessons learned and extensive data collected from permittees with existing trash controls, either a Trash TMDL or permit conditions. The priority land uses include five categories of land uses that generate high amounts of trash. The State Water Board recognizes that other land uses may generate higher rates of trash. To allow for these occurrences, the Trash Amendments include a provision for a MS4 permittee to focus on ”equivalent alternate land uses” under both Track 1 and Track 2. Quantification measures such as street sweeping, mapping, and visual trash presence surveys can be used to prioritize these land uses for Track 1 or Track 2 controls. (See Ocean Plan Amendment and Part I ISWEBE definition for “alternate equivalent land uses” within the “priority land use” definition.)

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16.2	High-density residential areas are categorized as priority land uses. This category includes apartment and condominium complexes. While more people per acre live in these types of residential communities than single family homes, there is generally much more strict oversight on the maintenance and management of common areas and private streets by homeowner associations and management companies. Residents are required to comply with strict community regulations and pay for the community's maintenance costs. Therefore, they are more sensitive about keeping the community clean in order to avoid higher homeowner association fees. Recommendation: The City of Chula Vista recommends that the High Density Residential category be deleted from the list of Priority Land Uses.		The State Water Board recognizes that each priority land use across the state will generate trash a varying rates due to site specific conditions. To allow for these occurrences, the proposed Trash Amendments include a provision for a MS4 permittee to focus on "equivalent alternate land uses" under Track 1. (See Ocean Plan Amendment and Part I ISWEBE definition for ""equivalent alternate land uses.") Quantification measures such as street sweeping, mapping, and visual trash presence surveys can be used to prioritize these land uses. The "equivalent alternate land uses" should provide the requested flexibility for trash control measures. Additionally, if the City of Chula Vista could demonstrate to the applicable permitting authority that existing trash controls achieve the prohibition of discharge and full capture system equivalency, then those locations could be deemed in compliance with the prohibition of discharge for trash.
16.3	Clarification is needed to enable jurisdictions to evaluate the equivalency of other treatment controls, institutional controls, and multi-benefit projects; and ensure that they will meet compliance if they choose the Track 2 option. Uncertainty about this issue will expose jurisdictions to enforcement and/or legal action. Recommendation: The City of Chula Vista recommends adding language		A central aim of the Trash Amendments is to focus trash controls to areas with high trash generation rates utilizing a dual alternative compliance track approach (i.e., Track 1 and Track 2). The two tracks allow NPDES storm water permittees to determine and implement the most effective means of controlling trash while taking into consideration particular site conditions, types of trash, and the available resources for maintenance and operation. Track 1 focuses solely on utilizing full capture systems to capture trash greater than 5 mm at the storm drain before storm water enters the receiving water. As successfully demonstrated across California, full capture systems are highly effective at capturing trash when operated

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	to clarify how jurisdictions are to evaluate equivalency with Track 1 if they decide to choose Track 2.		and maintained properly. While the State Water Board recognizes the effectiveness of full capture systems, there are site-specific conditions in a municipality that may make the installation and operation of full capture systems a less achievable option. Additionally, the State Water Board recognizes that there are a wide variety of available mechanisms to control trash such as partial capture systems, institutional controls, and multi-benefit projects. Thus, Track 2 is intended to allow permittees to utilize the full range of mechanisms to control trash in order to achieve equivalent performance Track 1. It is the State Water Board's intent that full capture systems would be selected first and installed where not cost prohibitive and supplemented with institutional controls and other treatment controls from existing permit requirements. To clarify this intent, the following language has been included in Track 2: "It is; however, the State Water Board's expectation is that the MS4 permittee will elect to install full capture systems where such installation is not cost-prohibitive." (See Ocean Plan Amendment III.L.2.a.2; Part I ISWEBE IV.A.3.a.2.) Additionally please see Response to Comments 4.6 and 6.2.
16.4	Monitoring is expensive and should not constitute a significant portion of the program total costs. While monitoring is necessary to assess the effectiveness of the program, it does not by itself result in cleaner water. A cost-effective monitoring protocol should be developed based on simple visual observations, which allows more of the limited resources to be spent on actual treatment control measures. Recommendation: The City of Chula		Please see Response to Comment 4.6.

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	Vista recommends allowing other methods of assessment in addition to a cost-effective monitoring program to determine compliance.		
16.5	Implementation of the Trash Amendment will impose significant costs on jurisdictions. The State Water Board can include provisions in the Trash Amendment to allow Regional Water Boards to provide credit to jurisdictions to offset some of their obligations toward MS4 Permit requirements and compensate for the additional costs. Recommendation: The City of Chula Vista recommends the addition of language to allow Regional Water Boards to provide credit to jurisdictions to offset some of their MS4 permit requirements and compensate for additional costs.		The economic analysis for the proposed Trash Amendments estimated the incremental annual cost to comply with the requirements of the proposed Trash Amendments ranged from $4 to $10.67 per year per capita for MS4 Phase I NPDES permittees and from $7.77 to $7.91 per year per capita for smaller communities regulated under MS4 Phase II permits (See Final Staff Report Appendix C). The State Water Board understands that permittees have other permit requirements. With the Trash Amendments, the State Water Board recognizes that trash is a priority pollutant statewide. In modifying, re-issuing, adopting new NPDES permits, the permitting authority must prioritize trash as a priority pollutant and the assessment of other permit requirements is at the discretion of the permitting authority.
17.1	As drafted, they would potentially require Bay Area municipalities to inefficiently redirect limited public resources away from activities currently aligned with trash reduction provisions in the MRP.		Please see Response to Comment 4.2.
17.2	Provide consistency with the proposed narrative Water Quality Objective by including language in the trash discharge prohibitions to specify that the trash discharges being prohibited and controlled are "in amounts that cause impairment		Please see Response to Comments 4.1 and 10.9.

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	of beneficial uses or conditions of nuisance in receiving waters."		
17.3	Provide an alternative (i.e., Track 3) to allow for compliance to be achieved via continued implementation of the trash-specific provisions in the MRP.		Please see Response to Comment 4.2.
17.4	Provide "certification" for all devices that were installed or are in the process of being installed in the Bay Area if they were previously accepted by SF Bay Regional Board staff as meeting the design criteria for full capture systems.		Please see Response to Comment 4.3.
17.5	We strongly urge the State Board to consider the recommendations proposed by BASMAA and allow SCVURPPP permittees to continue the process of reducing trash from MS4 discharges in manner that is consistent with the Bay Area framework designed to achieve water quality goals outlined in the MRP which are consistent with the proposed amendments.		Please see the Response to Comment Letter 4.
18.1	The City of Del Mar requests that a workshop be held at a Southern California location.		Several focused stakeholder meetings were held in southern California. However, the State Water Board will not be holding a public workshop in southern California.

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18.2	The City of Del Mar supports the staff recommendation in the Draft Staff Report to combine definitions from Basin Plans, California Government Code and the California Water Code to define trash. However, the City is concerned with “natural materials” such as leaf litter and pine needles being included in the trash definition. Recommendation: Language changes to definition of Trash in Appendix I, Definition of Terms, of the Ocean Plan and Appendix A, Glossary, of the Inland Surface Waters, Enclosed Bays, and Estuaries of California (ISWEBE) Plan.	Trash means all improperly discarded solid material from any production, manufacturing, or processing operation including, but not limited to, products, product packaging, or containers constructed of plastic, steel, aluminum, glass, paper, or other synthetic ~~or natural~~ materials.	The State Water Board intends "natural materials" in the definition of trash to refer to production, manufacturing or processing operations as consistent with the California Government Code's definition of "litter." This specifically excludes natural materials, such as leaf litter and pine needles. (See Staff Report Section 4.1 Issue 1) The State Water Board does not think the proposed language is necessary.
18.3	The City of Del Mar does not support having a numeric water quality objective of zero. The City of Del Mar supports using a narrative WQO for trash as it is a more practical means of implementing a prohibition of discharge. Recommendation: The City of Del Mar supports the language in Chapter II.C.5 of the Ocean Plan and Chapter III.B of the ISWEBE Plan: “Trash shall not accumulate in ocean waters, along shorelines or adjacent areas in amounts that adversely affect beneficial uses or cause nuisance.”		The State Water Board agrees with this comment. In addition, please see Response to Comment 6.1.

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18.4	The Trash Amendments should not supersede existing stakeholder-based watershed planning efforts, effectively determining, without validation, that trash is the highest priority in all watershed areas and potentially requiring the refocusing of resources from stakeholder developed priorities. Recommendation: The City of Del Mar would support adding a requirement to Trash Amendments where jurisdictions without waters impaired for trash would still be required to conduct education and outreach efforts or if currently conducting, continue current trash control strategies. The City of Del Mar also suggest edits to the Trash Amendments, Chapter III.L.1.b of the Ocean Plan and Chapter IV.B.1.b of the ISWEBE Plan (see Recommended Language).	These Trash Provisions apply to all surface waters of the State <u>that are listed on the 303(d) list as impaired for trash</u>, with the exception of those waters within the jurisdiction of the Los Angeles Regional Water Quality Control Board (Los Angeles Water Board) for which trash Total Maximum Daily Loads (TMDLs) are in effect prior to the effective date of these Trash Provisions; provided, however, that: <u>(3) Jurisdictions without listings on the 303(d) list for trash, shall conduct institutional control efforts or if currently conducting, continue trash control strategies.</u>	Trash is a pervasive pollutant impairing the beneficial uses of California surface waters. Trash in waterways, on beaches, and in the ocean poses threats to aquatic life, wildlife, public health, recreation, fishing and other economic activities. The approach of the proposed Trash Amendments is not only reactive, but also preventive in addressing trash in state waters. The intent of the Trash Amendments is to protect the beneficial uses of California's surface waters from trash, regardless of being 303(d) listed for trash. The State Water Board understands that trash enters a water body via multiple pathways, and storm water is a dominate transport pathway. Trash is a controllable priority pollutant, especially in storm water. The fifteen existing trash and debris TMDLs in the Los Angeles Region have demonstrated that full capture systems are a proven and effective best management practice to remove trash from storm water. The Trash Amendments aim to focus trash controls on areas with high trash generation rates, as specified by the priority land uses for Phase I and Phase II MS4 permittees. In addition to trash controls in priority land uses, the Trash Amendments propose to allow a permitting authority to make a determination that other specific land uses or locations to generate substantial amounts of trash and require Track 1 or Track 2 trash controls. The State Water Board does not think the proposed language is necessary.
18.5	The City of Del Mar supports limiting the application of the Trash Amendments to only those water bodies that are listed on the 303(d) list as impaired for trash. The City of Del Mar supports that the Trash Amendments apply to "high trash generating areas" when those areas include water bodies that are listed on the 303(d) list as impaired for trash. The City of Del Mar believes	Chapter III.1.b of the Ocean Plan and Chapter III.B.1.b of the ISWEBE Plan: These Trash Provisions apply to all surface waters of the State listed on <u>the 303(d) list as impaired for trash,</u> with the exception of those waters within the	Please see Response to Comments 11.4 and 18.4.

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	permittees should have flexibility in defining "high trash generating areas" in their respective jurisdiction to allow catchment systems to be placed in areas with the greatest impact. Recommendation: Edits to the Trash Amendments (see recommended language).	jurisdiction of the Los Angeles Regional Water Quality Control Board (Los Angeles Water Board) for which trash Total Maximum Daily Loads (TMDLs) are in effect prior to the effective date of these Trash Provisions; provided, however, that: Chapter III.L.2.a of the Ocean Plan and Chapter IV.B.3.a of the ISWEBE Plan: (1) Track 1: Install, operate and maintain full capture systems in their jurisdictions for all storm drains that captures runoff in catchment areas where ~~from one or more of the~~ priority land uses comprise >25% of the land area in the catchment ~~in their jurisdictions~~; or (2) Track 2: Install, operate, and maintain any combination of full capture systems, other treatment controls, institutional controls, and/or multi-benefit projects within either the jurisdiction of the MS4 permittee or within the jurisdiction of the MS4	

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		permittee and contiguous MS4s permittees, so long as such combination achieves the same performance results as compliance under Track 1 would achieve for all storm drains that captures runoff in catchment areas where ~~from one or more of the~~ priority land uses comprise >25% of the land area within the catchment ~~within such jurisdiction(s)~~.	
18.6	The City of Del Mar believes that the time schedule for compliance with the Trash Amendments should apply only to those waters listed on the 303(d) list for trash. When a water body becomes impaired for trash and is listed on the 303(d) list that would trigger the time schedule for full compliance with the Trash Amendments. Recommendations: The City of Del Mar believes that a better time schedule for implementation of the Trash Amendments would be for the ten year time clock to begin after the permittee officially submits their notice of choosing Track 1 or Track 2. This would prevent the ten year time clock from starting during the time period where the City is	Chapter III.L.4.a.(3) and (4) of the Ocean Plan and Chapter IV.B.5.a.(3) and (4) of the ISWEBE Plan: • NPDES Permits Regulating MS4 Permittees that have Regulatory Authority over Priority Land Uses and that have waters listed on the 303(d) list as impaired for trash. • For MS4 permittees that elect to comply with Chapter III.L.2.a.1. (Track 1), full compliance shall occur within ten (10) years of the permittee's notice indicating which track	Please see Response to Comment 18.4. In addition, to allow for sufficient time to plan for implementing effective controls, the State Water Board is providing 18 months to develop an implementation plan prior to the beginning of the ten year compliance schedule, which coincides with the effective date of the implementing permit. (See Ocean Plan Amendment III.L.4.1 and Part I ISWEBE IV.A.5.1.) The fifteen year maximum deadline from the effective date of the Trash Amendments provides five years for the permitting authority to incorporate the Trash Provisions into an implementing permit. (See Ocean Plan Amendment III.L.4.2-3 and Part I ISWEBE IV.A.5.2-3.) The State Water Board does not think the proposed language is necessary.

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	researching and developing a trash program compliant with the Trash Amendments. The City of Del Mar also suggests edits to the Trash Amendments (see recommended language).	was chosen ~~effective date of the first implementing permit (whether such permit is re-opened, re-issued or newly adopted)~~, along with achievements of interim milestones such as an average of ten percent (10%) of the full capture systems installed every year. In no case may the final compliance date be later than fifteen (15) years from the permittee's written notice indicating which track was chosen ~~effective date of these Trash Provisions~~. • For MS4 permittees that elect to comply with Chapter III.L.2.a.2. (Track 2), full compliance shall occur within ten (10) years of the permittee's notice indicating which track was chosen ~~effective date of the first implementing permit~~ (whether such permit is re-opened, re-issued or newly adopted), along with achievements of interim milestones such as average load	

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		reductions of ten percent (10%) per year. In no case may the final compliance date be later than fifteen (15) years from the permittee's written notice indicating which track was chosen ~~effective date of these Trash Provisions~~.	
18.7	The City of Del Mar supports the option of time extensions for employing regulatory source controls.		Please see Response to Comment 4.5.
18.8	The City of Del Mar currently implements a comprehensive monitoring program and believes that monitoring requirements should be tied to WQIP monitoring to conserve implementing resources and avoid creating an additional and/or separate monitoring program. Due to the lack of waters impaired for trash, the City of Del Mar supports implementing the Trash Amendments and associated proposed monitoring requirements only if a water body becomes impaired for trash and is subsequently listed on the 303(d) list.		Please see Response to Comment 11.9. As the proposed Trash Amendments will be implemented through respective NPDES permits. Implementation provisions and monitoring and reporting requirements could be incorporated as part of Water Quality Improvement Plans, if in align with the Trash Amendments and approved by the permitting authority.

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19.1	The Proposed Trash Amendments would impose new State requirements on local agencies without identifying a funding reimbursement source. Prior to adoption of the proposed policy, the State Water Resources Control Board must first identify a reliable funding source to reimburse local jurisdictions for the cost of the new requirements, as mandated by the California Constitution.		Please see Response to Comment 10.4.
19.2	The Proposed Trash Amendments are premised upon a postulation that trash is an acute problem in all waters, and requires specific actions by all municipalities that discharge to those waters. Alternatively, the Proposed Trash Amendments should address trash in a manner similar to other pollutants in which actions would be required only after impairment has been documented or a water quality objective has been exceeded and the regulated entity has contributed to that impairment or objective exceedance.		Please see Response to Comment 18.4.

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19.3	The rigid implementation requirements expressed in the Proposed Trash Amendments do not allow flexibility for local resources to be used efficiently and to address "real world" problems. Alternatively, if a problem (as defined by a documented impairment, see comment #2 above) is identified, regulated entities should be allowed to address trash issues consistent with their local planning and implementation strategies to meet the defined narrative water quality objective. A narrative water quality objective for trash is supportive of the State Water Resources Control Board's goal of statewide consistency, and as such, should be fully developed for incorporation into the Proposed Trash Amendments.		The State Water Board agrees. Please see Response to Comment 6.1.
20.1	The Proposed Amendments do not identify a funding source for this, so presumably the City will be required to fund it out of its budget. Similar to other jurisdictions, the City is still recovering from the economic downturn and this would be a significant burden to city finances unless permanent alternative funding sources are established.		Please see Response to Comment 10.4.
20.2	The City requests that the State Board incorporate more flexible language that will keep trash as a legitimate concern but allow cities to address at an appropriate level for		Please see Response to Comment 11.3.

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	their watershed and their population. Escondido has very few locations with trash or debris concerns. Recommendation: the State Water Board include language which will allow trash assessment data to be used to modify the City's approach, regardless of priority land uses. While the City appreciates the intent of Track Two to add such flexibility to the Proposed Trash Amendments, the proposed language is not clear enough as to provide guidance for the City's situation.		
20.3	As San Diego Region municipalities embark on Water Quality Improvement Plans for all Region 9 watersheds, the City is concerned that the Proposed Trash Amendments do not acknowledge the current watershed management efforts underway, including pollutant prioritization, goal setting, and strategy development. The watershed planning process allows municipalities to focus scarce resources on solutions to address the highest water quality priorities. The Proposed Trash Amendments should be modified to recognize and integrate with such efforts, perhaps with a third compliance track.		Please see Response to Comment 11.9.
20.4	The City requests that a standard methodology for municipalities to measure trash is established in the Trash Amendments, as no such		Currently, there are several approaches to monitoring trash in California, for example the Minimum Frequency of Assessment and Collection Program, the Daily Generation Rate, and the Rapid Trash Assessment. In addition, there are potential new

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	guidance currently exists. Furthermore, the City anticipates that much of the data collection required for this effort will come from MS4 and catch basin insert cleaning and maintenance which removes a significant amount of trash & debris from the environment. The equipment used to perform this work (typically a vactor truck) removes an intermingled volume of trash, plant debris, and sediment from catch basins. It is of utmost importance that the State and Regional Water Boards recognize that it is not feasible to separate the items within catch basins for separate tracking and reporting purposes		methodologies, such as outcomes from the Proposition 84 Grant project Tracking California's Trash. Because there will be a variety implementation approaches, the monitoring and reporting requirements should offer flexibility for permittees to demonstrate compliance with the prohibition of discharge for trash. However, a level of statewide consistency in monitoring and reporting also needs to exist. The balance between the needs for consistency and flexibility is achieved through standardized objectives in the monitoring program. As a result, the Trash Amendments aim to establish minimum monitoring and reporting provisions, while providing the option for Water Boards to include more extensive provisions in their implementing permits. This approach provides flexibility to Water Board permit writers to design monitoring programs that reflect the compliance methods elected by permittees along with regional characteristics. For statewide consistency, all monitoring programs would be striving to answer similar fundamental questions. (See Final Staff Report at Sections 2.7 and 4.10, Ocean Plan Amendments III.L.5, and Part I ISWEBE IV.A.5.)
20.5	City's engineers are concerned about the full capture size limit of 5 millimeters (mm). Vegetation and debris transported in large volumes during storm events cause blockages in trash capture devices and may cause localized flooding. This consideration increases the cost of installing full trash capture devices because underground catch basins may need to be resized to accommodate potential flows.		Full capture systems have been successfully installed and operated in California for over ten years. While leaf litter does accumulate, this can be minimized with routine cleaning and maintenance. Additionally, full capture systems provide a bypass route when runoff flow extends the design capacity, in order to alleviate potential flooding concerns. (See Final Staff Report in Section 5.1.)

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20.6	The Proposed Trash Amendments should clarify whether municipalities would be able to switch tracks throughout the course of implementation. This may provide a buffer should practical experience, budget constraints or economic considerations force the city to reassess, and for example, purchase and installation of full capture devices under Track 1.		The State Water Board is appreciative of this concern. The ability to change Tracks would be possible at the discretion of the permitting authority after the effective date of the first implementing permit. If a permittee changes Tracks, then permitting authority would likely need to modify the permit requirements to be in compliance with the implementation provisions in the Trash Amendments. For example, if a permittee begins implementation under Track 1 and switches to Track 2, then the permittee would be responsible for achieving the Track 2 requirements, such as submission of an implementation plan, and monitoring and reporting.
20.7	The City views these amendments as an unfunded mandate. The implementation costs alone are onerous, and the maintenance of capture devices will be an ongoing and even larger expense than installation costs. The State should commit to offer implementation grants for small and medium-sized jurisdictions during the initial period (ten years after incorporation into Regional MS4 Permits).		Please see Responses to Comments 10.4 and 29.4.
20.8	The City recommends that comprehensive recommendations regarding full capture devices are presented as part of the guidance. It will provide reassurance to the City that a method for full capture accepted in another region can be transferred to our region. This will avoid burdensome and lengthy approval processes and reduce redundancy across different Regional Boards.		The State Water Board intends for resources to be efficiently directed towards effective treatment controls to capture and remove trash. The proposed Final Staff Report specifies the full capture systems currently certified by the Los Angeles Water Board and listed in Appendix I of the Bay Area-wide Trash Capture Demonstration Project, Final Project Report (May 8, 2014) that will satisfy the requirements of the Trash Amendments. (See Final Staff Report in Sections 2.8 and 5.1, Ocean Plan Amendment and Part I ISWEBE definition for "full capture system equivalency.")

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20.9	The City is concerned that sources of trash from non-MS4 sources will be attributed to the City's compliance responsibility under these amendments. Such sources include: littering on highways under Caltrans management homeless encampments and/or dumping directly in receiving waters, Phase II MS4 properties, and School District properties. The Proposed Trash Amendments should address how material from these other sources will be accounted for.		Please see Response to Comment 10.6.
20.10	Section 2 of the Draft Staff Report states "No Other Agency approvals are expected to be required to implement the Proposed Amendments." When the Sediment Quality Objectives were adopted, EPA Region XI had to approve the amendment. Why is that not true with these amendments?		The proposed Trash Amendments and Draft Staff Report discussed the actual implementation of the Trash Amendments by permittees when it stated that no other agencies are expected to be required to implement the Trash Amendments (i.e., once the Trash Amendments become final there are no other agencies that have separate jurisdiction over the action). The proposed Trash Amendments and Draft Staff Report did not detail how the Trash Amendments "become final". After the State Water Board adopts the Trash Amendments, the Final Staff Report will be submitted for review of the regulatory record to the California Office of Administrative Law and final approval from the U.S. Environmental Protection Agency. The Trash Amendments become effective following approval by the U.S. Environmental Protection Agency. Accordingly, Section 2.12 has been revised in the proposed Final Staff Report.

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20.11	On page 65 of Section 4 in the Proposed Amendments the trash definition should include the size minimum of 5 mm similar to that as presented in Consideration 3 of Section 4.1. Inclusion of a 5 mm minimum would provide consistency with compliance requirements for full capture devices.	"Trash means all improperly discarded solid material over 5 mm in size from any production, manufacturing, or processing operation including, but not limited to products, product packaging, or containers constructed of plastic, steel, aluminum, glass, paper, or other synthetic ~~or natural~~ materials."	The State Water Board disagrees that there should be a size limitation on the definition of trash. A size limitation doesn't address small pieces of trash, such as preproduction plastics and small pieces of trash, which can adversely impact beneficial uses. (See the Final Staff Report Section 4.1.)
20.12	III.I.2.d of the Proposed Trash Amendments allows permitting authorities to determine that other, specific land uses generate substantial amounts of trash and require permittees to implement Track 1 and Track 2 for those land uses. If a permitting authority adds new priority land uses during the duration of the compliance period, it could be difficult for a permittee to achieve compliance with the Proposed Amendments if the areas they are required to address change while they are attempting to address those areas. We recommend adding language to the Proposed Amendments requiring a permitting authority to consider revisions to the final compliance date of the Proposed Amendments if new priority land uses are added during		Trash is a priority pollutant across California. The Trash Amendments aim to focus trash controls on areas high trash generation rates, as specified by the priority land uses for Phase I and Phase II MS4 permittees. In addition to trash controls in priority land uses, the Trash Amendments propose to allow a permitting authority to make a determination that other specific land uses or locations to generate substantial amounts of trash and require Track 1 or Track 2 trash controls. The Trash Amendments proposed a ten year compliance schedule for Track 1 and Track 2; however, there was not a time schedule for specific land uses and locations designed as high trash generating. Additional language has been provided in the proposed final Trash Amendments specifying that a permitting authority can set a time schedule for the specific land use and locations determined to generate substantial amounts of trash where the final compliance can be no later than ten years from the determination. (Ocean Plan Amendment III.L.4.a.5 and Part I ISWEBE IV.A.5.a.5.)

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	the duration of the compliance period.		
20.13	As drafted, the Proposed Amendments would supersede existing stakeholder-based watershed planning efforts, effectively determining, without validation, that trash is the highest priority and potentially requiring the refocusing of resources from stakeholder developed priorities.	We recommend including language in Chapter IV.B.3of the ISWEBE Plan and Chapter III.L.2.a of the Ocean Plan stating: A MS4 Permittee may request that compliance requirements for trash be established through a watershed prioritization and planning process outlined in MS4 Permit requirements. This prioritization process would allow for evaluation of the trash in the context of other watershed priorities and provide a mechanism for modifying or reducing the requirements for compliance in accordance with the procedures outlined in the MS4 permit and an approved watershed plan. Through this process, monitoring data could be utilized to demonstrate that trash controls are not necessary for all priority land uses.	Please see Response to Comment 11.9.

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20.14	The Proposed Trash Amendments appear to require implementation of Track 1 or Track 2 for any storm drain that captures any runoff from a priority land use. This would trigger compliance requirements for a storm drain even if only a very small portion of a priority land use drains to the storm drain.	Recommendation: Recommend adding language to Chapter IV.B.3.a.(1)/IV.B.3.a.(2) and Chapter III.L.2.a.(l)/Chapter lll.l.2.a.(2) of the ISWEBE Plan and Ocean Plan, respectively stating that permittees must address catchment areas where the priority land uses are greater than 25% of the total catchment area. Track 1: Install, operate and maintain full capture systems in their jurisdictions for all storm drains that captures runoff in catchment areas where priority land uses comprise >25% of the land area in the catchment; or Track 2: Install, operate, and maintain any combination of full capture systems, other treatment controls, institutional controls, and/or multi-benefit projects within either the jurisdiction of the MS4 permittee or within the jurisdiction of the MS4 permittee and	Please see Response to Comment 11.4.

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		contiguous MS4s permittees, so long as such combination achieves the same performance results as compliance under Track 1 would achieve for all storm drains that captures runoff in catchment areas where priority land uses comprise >25% of the land area within the catchment.	
20.15	Demonstration of performance under Track 2 should not be limited to monitoring as demonstrating effectiveness of trash BMPs through monitoring is extremely difficult. Permittees should be allowed to propose the method of demonstrating performance in their plan. In addition, receiving water monitoring should not be required since other sources contribute trash. While a permittee may want to conduct receiving water monitoring to demonstrate performance, it should not be mandated in case other methods are appropriate (e.g. pounds of t rash removed through a control measure). Numeric trash data, no matter the metric (pieces, weight, volume), are an unreliable way to determine BMP effectiveness. Monitoring programs in the Los Angeles Region have shown that		Please see Response to Comment 4.6.

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	trash accumulation is highly variable leading to an inability to discern any trends in data. Permittees must have the flexibility to identify non-numeric monitoring measures to demonstrate effectiveness.		
21.1	Additional time for the comment period.		The State Water Board did not lengthen the 55-day comment period because it also held a public workshop in the midst of the comment period to provide an opportunity to address concerns, clarify issues, and answer questions.
21.2	The State of California needs to provide a source of funding for Cities to comply with the Proposed Trash Amendments. The City does not have a drainage fee/utility and as such, 100% of the stormwater management program costs are funded by the General Fund and impact fees. Prop 218 currently precludes the City from establishing a fee for stormwater management activities therefor increased costs must be taken from budgets for other programs and services (General Fund). This is not the time to put such an administrative burden on cities and cities cannot afford to comply with these unfunded mandates. To put this into context, the City is currently only able to budget approximately $200,000 per year on storm drain improvement projects. The capital cost to meet the Proposed Trash Amendment requirements will require approximately an additional		Please see Responses to Comments 10.4 and 29.4.

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	$200,000 per year. Likewise, the City is currently only able to budget approximately $400,000 per year for storm drain system maintenance activities and street cleaning activities. The increased maintenance cost to meet the Proposed Trash Amendment requirements will require approximately an additional $650,000 per year by the tenth year of the program. The City recognizes the water quality benefits of reducing trash, however the costs to comply exceeds our funding capability. Recommendation: The State must assist with funding for those requirements.		
21.3	Due to the significant cost to comply with the Proposed Trash Amendments, as currently written, we are concerned that much of our limited resources will be taken away from current efforts to reduce our target pollutants, to implementing trash removal BMP's in many areas that are not generating significant amounts of trash. Recommendation: The Proposed Trash Amendments allow cities to evaluate areas in question and provide the Regional Water Boards with the authority to approve an area exemption if the City has demonstrated that the area in question generates trash at rates that are significantly lower than estimated for the priority land use		Trash is a priority pollutant across California. A dual alternative "compliance Track" approach tailored to each NPDES storm water permit category would provide flexibility to permittees to determine the most effective means of controlling trash while taking into consideration particular site conditions, types of trash, and the available resources for maintenance and operation. The priority land uses are shown to be areas that generate significant amounts of trash and would thereby be the focus of limited resources. With the "equivalent alternate land uses," a permittee can exchange priority land uses shown to be low trash generating with alternative areas shown to be high trash generator. (See Ocean Plan Amendment and Part I ISWEBE definition for "priority land uses.") Therefore, limited resources are being applied to the areas with the highest trash generating rates.

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	listed.		
21.4	Supports the comments of CASQA and the Statewide Stormwater Coalition.		Please see the Responses to Comment Letters 10 and 68.
22.1	High-density residential land use with at least 10 developed dwelling unit/acre results in focusing on single family. High-density residential land use should be defined at equal to or greater than five dwelling units per building.		The proposed final Trash Amendments continue to be defined with at least 10 dwelling units per acre. (See Ocean Plan Amendment and Part I ISWEBE definition for "priority land use.")
22.2	The commercial land use definition should be refined to focus on commercial uses that have the potential to produce trash (such as fast food or take-out restaurants, retail and food markets) and exempt professional and office uses that only provide services.		The State Water Board disagrees that the definition of commercial should be modified as it focuses on the "sale or transfer of goods". The Trash Amendments do provide the ability to substitute a priority land use for an alternate land use. The alternative equivalent land uses allows for the situation to exchange parts of commercial for other high trash generating land uses. (See Ocean Plan Amendment and Part I ISWEBE definition for "priority land uses.")
22.3	The definitions Priority Land Uses are unnecessarily broad and will mandate storm drain retrofits in wide areas of low trash generation. Recommendation: To address the need for better tailored priority area definitions and the inherent variability of development-related trash generation across the state, the City recommends a process whereby municipalities are able to propose modifications to high priority areas to focus on high-trash generating areas/land uses/development types based on site-specific documentation, such as catch basin		Please see Response to Comment 12.2.

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	cleaning data or trash generation studies.		
22.4	If the City implemented Track 1, full capture devices would be required on approximately 4,600 catch basins. Utilizing the estimated cost from Appendix C: Economic Considerations for the Proposed Amendments to Statewide Water Quality Control Plans to Control Trash of $1,142 per catch basin insert for installation and one year of operations and maintenance, an estimated total cost to implement Track 1 for the City of Irvine is $5,253,200. This cost estimate results in a cost per capita of $21.65, more than double the $10.50 Estimated Annual Cost Per Capita (After Full Implementation in Year 10) from Table 13.		The Economic Considerations analysis used two methods to estimate the incremental costs of compliance with the Trash Amendments. The first method is based on cost of compliance per capita, and the second method is based on land cover. It is recognized that the estimated incremental annual cost to comply may vary for site specific conditions. As the Economic Considerations represent a statewide average, communities may wish to conduct their own cost analyses. (See Appendix C of the Final Staff Report.)
22.5	While it could be argued that compliance through Track 2 would provide some flexibility to address the above concerns, the burden of proof of performance results for Track 2 programs is impossible to meet for the following reasons: • A performance evaluation cannot be developed for an unknown target. The performance results to be achieved by the exclusive use of full capture systems (Track 1) is unknown, unless a municipality has already installed full capture		The proposed final Trash Amendments were modified to address the performance standard concern with the incorporation of the term full capture system equivalency. Track 2 allow for multi-jurisdictional collaboration. (Ocean Plan Amendments III.L.2.a, Part I ISWEBE IV.A.3.a, and definition of "full capture system equivalency.") Additionally, if the existing trash generation is low then the reduction target is also low and achievable. Please see the Response to Comment 6.2.

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	systems and monitored their performance. • It is unclear how effectiveness of an individual municipal program could be objectively measured and quantified, since the original source of trash in receiving waters is unknown. Trash from upstream dischargers will pass between jurisdictional boundaries and could be erroneously attributed to downstream municipal systems. • If the level of trash discharged from a municipal system is already low, it may be impossible to document reductions from the previous year.		
23.1	The City of La Mesa supports the focus on high trash generating land uses. Focus on these areas within a community will allow stormwater programs to invest resources where they will provide the best return on the investment in the controls. Recommendation: Rather than installing devices in areas where the return on the investment will be low, we recommend that the Trash Amendments allow for flexibility by establishing a process through which permittees could petition their Regional Water Board to review the areas in question and give the public agency the authority to exempt such areas if they are found not to be high		Please see Responses to Comments 10.7 and 12.2.

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	trash generating.		
23.2	Many MS4s around the state have been working extensively with the Regional Water Boards to develop and implement programs based on watershed planning and the prioritization of water quality conditions. Recommendation: The Proposed Trash Amendments need to recognize the value of current management programs and not divert resources away from ongoing successful efforts to control trash in our waterways or place additional demand on already limited resources. We urge the State Water Board to allow MS4 programs with existing focused water quality implementation plans to address trash in the prioritization context of those existing plans.		Please see Response to Comment 11.9.
23.3	City of La Mesa does not dispute the water quality benefits of controlling trash, however, the amendments represent added costs, and may take away from other planned water quality efforts. Not only are we concerned with the initial cost of installing these full capture devises but also the ongoing costs of managing and maintaining them. Recommendation: The City of La Mesa recommends that the State		The State Water Board agrees that permittees partnering together or partnering with other entities is a beneficial idea for controlling trash. As such, the Trash Amendments specify coordination of effort between Caltrans and MS4 in overlapping significant trash generating and/or priority land uses. Coordination with Caltrans will increase the avenues for funding. The State Water Board has and will continue to support loans and grants for projects that implement the Trash Amendments. The State Water Board has multiple programs to provide funding. The Public Resources Code requires that the Proposition 84 Storm Water Grant Program funds are used to

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	Water Board partner with permittees to explore possible ways to fund these trash control measures.		provide matching grants to local public agencies for the reduction and prevention of storm water contamination to rivers, lakes, and streams. Please visit the following website for more information: http://waterboards.ca.gov/water_issues/program/grants_loans/prop84/index.shtml Additional financial assistance information including information on the Clean Water State Revolving Fund loans, is available at: http://www.waterboards.ca.gov/water_issues/programs/grants_loans/ CalRecycle administers funding programs to assist with waste disposable, specifically reducing beverage container litter in the waste stream. Information on the Beverage Container Recycling Grants is available at: http://www.calrecycle.ca.gov/bevcontainer/grants/
24.1	The City of Lodi also supports the comments submitted by the California Stormwater Quality Association, the Statewide Stormwater Coalition, and the County of San Diego,		Please see Response to Comment Letters 10, 45, and 68.
24.2	Request the State Water Resources Control Board to provide all agencies more time to work together and develop a more flexible policy to address trash that is aligned with local planning efforts, instead of a 'one size fits all' approach.		The Trash Amendments have undergone an extensive public participation. The State Water Board believes the Trash Amendments have been crafted to provide both statewide consistency and flexibility. (See Final Staff Report Section 2.14.)
24.3	Delay until a funding source is identified to provide for the implementation or ongoing maintenance of the structural controls required to capture trash. Limited local resources shifted from		Please see Response to 10.4.

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	local priority efforts to address trash is a disconnect between local and statewide planning efforts.		
24.4	Compliance with Water Quality Objective and Prohibition of Trash Discharge The Proposed Trash Amendments provide a narrative water quality objective (WOO) in Chapter lll.B and Chapter ll.C of the ISWEBE Plan and Ocean Plan, respectively and a prohibition of trash discharge in Chapter IV.B.2 and Chapter lll.I.6 of the ISWEBE Plan and Ocean Plan, respectively. The permittees would be considered in full compliance with the prohibition of trash discharge so long as the permittees were fully implementing Track 1 or Track 2 (Chapter IV.B.2.a and Chapter lll.I.6.a, of the ISWEBE Plan and Ocean Plan, respectively). However, the Proposed Trash Amendments do not indicate that meeting the discharge prohibition requirements would also mean the permittees are in compliance with receiving water limitations (i.e., meeting the WOO). This could result in permittees being subject to a Trash TMDL for the receiving water, even if in compliance with permittees' MS4 Permit.	Recommendation: City of Lodi recommends adding language to the Proposed Trash Amendments indicating the permittees are in compliance with the receiving water limitations so long as they are fully implementing Track I orTrack2.	Please see Response to Comments 4.1 and 10.9.

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24.5	As defined in the Proposed Trash Amendments, the predefined priority areas may not be appropriate for all jurisdictions and does not consider local knowledge of receiving water conditions and previous data collection efforts. As currently drafted, the Proposed Trash Amendments assume that there is a problem in the defined priority areas, effectively forcing a costly "one size fits all" approach onto the jurisdictions. City of Lodi supports the concept of prioritized land uses to address problem areas; however, the approach should allow for more local flexibility in this prioritization. City of Lodi and the other municipal separate storm sewer system (MS4) Co-permittees in our watersheds have been working extensively with the Regional Water Quality Control Board to develop and implement a MS4 Permit based on watershed planning and the prioritization of water quality conditions. The comprehensive planning process considers trash, as well as a host of other potential pollutants, with trash currently categorized as a lower tier priority pollutant. Additionally, the expected costs to implement the Proposed Amendments will be substantial and the value of these requirements are uncertain, given the current receiving water priorities developed through the stakeholder	Recommendation: City of Lodi recommends including language after Chapter IV.B.3.a of the ISWEBE Plan and Chapter lll.L.2.a of the Ocean Plan that states: A MS4 Permittee may request that compliance requirements for trash be established through a watershed prioritization and planning process outlined in M54 permit requirements. This prioritization process would allow for evaluation of the trash in the context of other watershed priorities and provide a mechanism for modifying or reducing the requirements for compliance in accordance with the procedures outlined in the MS4 permit and an approved watershed plan. Through this process, monitoring data could be utilized to demonstrate that trash controls are not necessary for all	Please see Response to Comment 11.9.

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	process. As drafted, the Proposed Trash Amendments would supersede existing stakeholder-based watershed planning efforts, effectively determining, without validation, that trash is the highest priority in all watershed areas and potentially requiring the refocusing of resources from stakeholder developed priorities.	priority land uses.	
24.6	The Proposed Trash Amendments appear to require implementation of Track 1 or Track 2 for any storm drain that captures any runoff from a priority land use [Chapter IV.B.3.a.(1)/1V.8.3.a.(2) and Chapter lll.L.2.a.(1)/Chapter lll.L.2.a.(2) of the ISWEBE Plan and Ocean Plan, respectively. This would trigger compliance requirements for a storm drain even if only a very small portion of a priority land use drains to the storm drain.	Recommendation: Recommend adding language to Chapter IV. B. 3.a. (1)/IV. B. 3.a. (2) and Chapter I I I. 1.2.a. (1)/Chapter lll.L.2.a.(2) of the ISWEBE Plan and Ocean Plan, respectively stating that permittees must address catchment areas where the priority land uses are greater than 25% of the total catchment area. (1)Track 1: Install, operate and maintain full capture systems in their jurisdictions for all storm drains that captures runoff in catchment areas where priority land uses comprise >25% of the land area in the catchment; or (2)Track2: Install,	Please see Response to Comment 11.4.

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		operate, and maintain any combination of full capture systems, other treatment controls, institutional controls, and/or multi-benefit projects within either the jurisdiction of the MS4 permittee or within the jurisdiction of the MS4 permittee and contiguous MS4s permittees, so long as such combination achieves the same performance results as compliance under Track 1 would achieve for all storm drains that captures runoff in catchment areas where-priority land uses comprise >25% of the land area within the catchment'	
24.7	The Proposed Trash Amendments, in Chapter IV.B.7.b and Chapter II¡.L.6.b of the ISWEBE Plan and Ocean Plan, respectively, require permittees implementing Track 2 to monitor to demonstrate mandated BMP performance results; effectiveness of the full capture systems, other structural BMPs, institutional controls, and/or multi-benefit projects; and compliance with performance standards. In addition,	Recommendation: City of Lodi recommends the State Water Board revise the language in the Proposed Trash Amendments (Chapter IV.8.7.b and Chapter III.L.6.b of the ISWEBE Plan and Ocean Plan, respectively) to allow for more flexibility	Please see Response to Comment 4.6.

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	the permittees must monitor the amount of trash in receiving waters. Demonstration of performance under Track 2 should not be limited to monitoring as demonstrating effectiveness of trash BMPs through monitoring is extremely difficult. Permittees should be allowed to propose the method of demonstrating performance in their plan. In addition, receiving water monitoring should not be required since other sources contribute trash. While a permittee may want to conduct receiving water monitoring to demonstrate performance, it should not be mandated in case other methods are appropriate (e.9. pounds of trash removed through a control measure).	in determining Track 2 performance and to remove the requirement for receiving water trash monitoring.	

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24.8	It appears that the Proposed Trash Amendments will serve as an alternative to a TMDL, thereby preventing the need to develop trash TMDLs in the future. City of Lodi recommends the State Board adds additional language to clarify the intent of the Proposed Trash Amendments with respect to the development of future TMDLS. It seems that implementation of the Proposed Trash Amendments represents a single regulatory action addressing MS4 permittee requirements thereby removing the need to develop wasteload allocations via a TMDL for MS4 permittees.	Recommendation: City of Lodi recommends that language should be included in the Proposed Trash Amendments stating that if the requirements in the Proposed Trash Amendments are being met, then no Trash TMDLs will be developed for those water bodies where the requirements are being fully implemented.	Please see Response to Comment 10.10.
24.9	The well-established Community Planning Groups in these rural areas have established priority issues through rigorous stakeholder planning processes. Rural towns have commercial areas that will be under the Trash Amendments. These rural communities have limited resources available to fund programs, and there is not a reasonable return on investment for these small communities to implement extensive trash controls. Based on their local planning processes, the threat of firestorms or other local priorities may be the best	Recommendation: City of Lodi recommends exempting rural areas from the Trash Amendments that are not directly contiguous to urbanized areas.	Trash is a priority pollutant across California and is impairing the beneficial uses of surface waters. This issue is not limited by community type, e.g., rural or urban. The State Water Board agrees that rural communities might contribute less trash than urban communities, due to population size; however, the State Water Board does not think the recommended language is necessary. The implementation provisions of the Trash Amendments are aimed to focus trash controls in five priority land uses. A rural community covered by a MS4 permit would comply with the prohibition of discharge via Track 1 or Track 2 to the extent that there are priority land uses.

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	use of their limited resources.		
25.1	Full capture devices installed in private drains; inlets downstream of priority land uses that already have trash controls. Rationale for change Page 74 of the staff report references maintenance of full capture systems installed on private properties, which indicates that the State Water Board intended to allow treatment BM Ps installed on private properties to help satisfy the requirement to remove trash from discharges from priority land uses. However, the existing text of L.2.a.(l) and L.2.a.(2) implicitly prohibits installation of full capture devices and other treatment controls or institutional I controls on private property from being part of the municipality's approach to comply with the proposed Trash Amendments. The suggested revisions above would give municipalities subject to MS4 NDPES permits the option of complying either by installing BMPs or implementing institutional controls on their own public property or by requiring the implementation of these approaches on private property. Additionally, the proposed language would allow municipalities not to have to install a full capture device (or Track 2 equivalent) when the only priority land use draining to a given storm drain is a facility permitted	Suggested revision to L.2.a.(1) and L.2.a.(2) (1) Track 1: Install, operate and maintain, or require to be installed, operated, and maintained, full capture systems* ~~for all storm drains that captures~~ to treat-runoff from all land area in each permittee's jurisdiction that drains to the permittee's MS4 and is classified as one or more of the priority land uses* ~~in their jurisdictions~~; or (2) Track 2: Install, operate, and maintain, or require to be installed operated, and maintained, any combination of full capture systems*, other treatment controls*, institutional controls*, and/or multi-benefit projects* within either the jurisdiction of the MS4* permittee or within the jurisdiction of the MS4* permittee and contiguous MS4s* permittees, so long as such combination achieves the same	Pursuant to the express terms of the Trash Amendments (Ocean Plan Amendment at III.L.2.a; Part I ISWEBE at IV.A.3.a), the requirement for MS4 permittees to comply with Track 1 or Track 2 extends to the extent they have "regulatory authority" over priority land uses in their jurisdiction. If the MS4 permittee has legal authority to install, operate, and maintain full capture systems for a storm drain, whether at the actual site of the drain or inline, then that permittee would be required to do so under the Trash Amendments. To comply with Track 1, full capture systems must be installed, operated, and maintained for "all storm drains that capture runoff from priority land uses. (Ocean Plan Amendment at III.L.2.a.1; Part I ISWEBE at IV.A.3.a.1.) Insofar as an MS4 permittee does not have authority over a private storm drain, the MS4 would comply with Track 1 by, for example, installing a vortex separator system inline, which would capture trash from a whole drainage area of individual storm drains (see Staff Report section 5.1.3), or installing trash nets (see Staff Report section 5.1.4) to capture trash from drainage areas of storm drains. (See generally, discussion in Staff Report in Section 5 through 5.1.5.) The State Water Board does not support the recommendation. Additionally, Please see Response to Comment 11.4.

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	under the Industrial General Permit (IGP), which would be required to install trash controls as a condition of its own coverage under the JGP. Under that circumstance, requiring the MS4 permittee to install a full capture system (or Track 2 equivalent) for a priority land use that has already been addressed at the source as a condition of the JGP would not be an effective use of MS4 permittee resources. Overall, the revised language proposed above gives jurisdictions more flexibility to find the most efficient and effective way to remove trash from priority land use discharges, which appears to have been the intent of the regulations given the discussion in the staff report.	performance results as compliance under Track 1 would achieve for all land area In each permittee's jurisdiction that drains to the permittee's MS4 and is classified as ~~all storm drains that captures runoff from~~ one or more of the priority land uses * ~~within such jurisdiction(s).~~	
25.2	The City agrees that public transportation stations, such as light rail stations or bus terminals, have the potential to be significant sources of trash and should be considered priority land uses. Bus stops, on the other hand, may change locations every few years. This could create compliance difficulties for strategies that involve structural BMPs, and it could also discourage expansion or optimization of public transportation routes within the City of National City. The City of National City is pursuing and implementing smart growth development practices and	Suggested revision to Appendix I (Definitions) "(5) Public transportation stations: major facilities or sites where public transit agencies' vehicles load or unload passengers or goods (e.g., bus or light passenger rail stations ~~and steps~~)."	The State Water Board is encouraged by the City of National City's implementation for smart growth development practices and does not anticipate the Trash Amendments will discourage the expansion of public transportation and smart growth. Within Track 2, the Trash Amendments provide flexibility with options such as of the use of low-impact development and multi-benefit projects to control trash.

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	encouraging non-car transportation, including public transportation, in a significant portion of the City. The City is concerned that the proposed Trash Amendments could discourage expansion of public transportation opportunities and smart growth, which could have unintended negative environmental consequences.		
26.1	The Staff Report states the proposed program has been in development for a number of years and that a group of stakeholders was convened to provide input on the development of the program. It is also noted that stakeholder group meetings were not made public and the Staff Report is the first publicly available document that provides information on how the program is to be implemented. We believe this is a large undertaking for a statewide program and our experience has shown that significant resources and costs will be expended to comply with these amendments. We urge the State to move slowly and provide additional time and more workshops to allow municipalities additional comments before these amendments are formally adopted. The time factor also does not allow for the review of the many supporting studies cited in the Staff Report within the comment period allowed.		Please see Response to Comment 3.1.

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26.2	The Staff Report states that the strategy to control trash is taken primarily from the experience in the San Francisco Bay and Los Angeles regions. We agree that those regions may have similar conditions applicable statewide but it must also be recognized that there are differences between regions and what is applicable in one region is not necessarily applicable in another region. It is important to recognize these differences because the cost to each municipality for the proposed program will be in the thousands to millions of dollars over the term of implementation as noted in the Appendix C of the Staff Report. We commend the State for proposing a trash control strategy that is reasonable and applicable only to high trash generating areas instead of implementing a zero discharge policy for all land uses and water bodies. This latter option would make no sense and would be a waste of public funds and resources since wind driven trash can find its way to a water body and lead to a finding of noncompliance even with full implementation of trash control devices. It should also be noted that the storm events greater than the one-year event may produce trash that should not lead to a finding of noncompliance. Recommendation: Recognize that		A full capture system has been defined to "trap all particles that are 5 mm or greater, and has a design treatment capacity that is either:…b) appropriately sized to, and designed to carry at least the same flows as, the corresponding storm drain." The intention of part b) of the definition is to address the concern that storm events greater can carry trash into water bodies. (See Ocean Plan Amendment and Part I ISWEBE definition for "full capture system.")

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	storm events greater than one-year can carry trash into water bodies.		
26.3	The proposed amendments are based on strategy to control trash from priority land uses, which include residential high density, urban mixed, industrial and commercial, transportation hubs, bus stops and others. While it is clear that these land uses may produce high amounts of trash, how these land uses are incorporated into the program and defined needs to be considered. High Density Residential: It is anticipated that residential high density neighborhoods will generate significant amounts of trash as shown in studies but it should be noted that the term and definition of high density varies among municipalities and the resulting densities are not all the same. In Orange, the term "high density" is not a category within the City's Zoning Code. The proposed amendments define high density as ten dwelling units per acre. In Orange, this would translate to a zoning district categorized as Low Medium Density ResidentiaiR-2 that allows within its mixture duplexes and small apartment buildings and has a density range of six to fifteen units per acre with an expected range of 8 units per acre.		The proposed Trash Amendments focus on areas with high trash generation rates, such as priority land uses for MS4 Phase I and Phase II permittees and significant trash generating areas for Caltrans. There is no existing data on the location of priority land uses. A GIS analysis was used to determine the possible geographic scope of the proposed Trash Amendments. Land cover data within census designated places and regional water board boundaries were used to provide an estimate the area covered under the proposed Trash Amendments. Due to lack of statewide consistency in land use planning and GIS data from individual municipalities, "Developed, High Intensity" was assumed to be an analogous proxy to the priority land uses of the proposed Trash Amendments: high density residential, industrial, commercial, mixed urban, and public transportation stations. However, high density residential, as defined in the Trash Amendments, is based on units per acres and not impervious area percentage. (See Final Staff Report Section 3.1.)

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	Impervious area in this district can range from 45% to 90% as noted in the Orange County Hydrology Manual for this building density. Because the R-2 district allows ten units per acre, it would be categorized as a priority land use even though it may not meet the impervious area definition of 80-100% for high density as defined in Staff Report Section 3.2. Clearly, the lower range of Low Medium Density Residential in Orange of six units per acre would not meet this definition or be compatible with Figure 24 of the Staff Report. Recommendation: The amendments should be revised to clarify that high density as used in the amendments with a building density of ten units per acre is a surrogate for residential land use that contains 80-100% impervious area. Municipalities should be allowed the opportunity to review their respective codes to ascertain what type of residential density meets the 80-100% impervious area criteria. It should also be recognized that zoning such as Orange's R-2 has a range of building densities and that trash control devices would only be used in areas where the existing built condition contains 80-100% impervious area. A field reconnaissance would be allowed to ensure only those areas with high		

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	impervious areas are retrofitted with trash control devices.		
26.4	Within the category of Industrial land use there can be many subdivisions. In Orange, there is light and heavy manufacturing. Within the City we have seen a shift in industrial processing particularly in the Light Industrial use category where manufacturing processes are conducted indoors under cover and are not exposed to the elements. As a result, we have not seen a significant amount of trash generated on public streets in most areas with this land use. This is confirmed by the number of times City maintenance crews have had to clean catch basins within these areas. To require the use of trash control devices in industrial areas without verifying that significant trash is generated would result in a waste of public funds. In heavy industrial manufacturing areas many facilities are subject to the State General Industrial Storm Water Permit where it is expected that trash control devices will be required onsite. The use of onsite trash control devices will minimize onsite trash discharged to the street and trash control devices may not be required within the public street. Recommendation: The amendments should be revised to allow municipalities the opportunity to		For these situations described, the permittee can utilize "equivalent alternate land uses" to substitute a priority land use for an alternate land use within the permittee's jurisdiction that generates rate of trash equivalent to or greater than the priority land use being substituted. (See Ocean Plan Amendment and Part I ISWEBE, Definitions Section, for "priority land uses.") Additionally, please see Response to Comments 10.1, 11.4, 12.2, and 25.1.

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	assess whether industrial land use areas are high trash generating areas. The amendments should also be clear that municipalities are only responsible for providing trash control devices within a public street or areas they are responsible for maintaining. This does not include responsibility for providing and maintaining trash control devices on private land (shopping areas, apartment complexes, mobile home areas, etc.) or private communities with private streets.		
26.5	Bus Stops: Bus stops are also designated a priority land use where trash controlling devices must be used. As with residential development, not all bus stops generate significant amounts of trash. Provisions should be included in the amendments to allow surveys of bus stop areas to determine which areas produce significant amounts of trash. In these areas, alternate methods to control trash such as more frequent cleaning should be allowed in lieu of providing a full capture device downstream. Recommendation: Allow alternate methods to capture trash in lieu of installing full capture devices downstream.		Please see Response to Comment 12.2.
26.6	The amendments propose a two path alternative for compliance: Track 1 or Track 2. Track 1 requires		A full capture system has been defined to "trap all particles that are 5 mm or greater, and has a design treatment capacity that is either:…b) appropriately sized to, and designed to carry at

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	operation and maintenance of full capture systems that capture runoff from priority land uses. Track 2 can be a combination of full capture systems and other alternative measures that achieve the same trash reduction goal. Full Capture Devices: As defined in the amendments, full capture devices must be able to capture trash 5mm and greater and sized for the 1-hr rainfall intensity of a 1-year storm event. Alternatively, it can be sized to handle the inlet storm drain capacity. This definition borrows from the full capture definition used in the Los Angeles River Watershed Trash TMDL. Using this definition may make sense to match the ongoing trash control efforts in the Los Angeles and the San Francisco Bay Area where municipalities are trying to comply with existing trash TMDLs. However, this definition will have a negative impact in other regions where existing trash control devices, particularly vortex separators, were installed to meet MS4 permit design requirements such as the 0.2 inches per hour rainfall intensity specified in the Orange County Santa Ana Region permit. The proposed criteria will significantly reduce the usefulness of these devices that were installed at great expense. Recommendation: The full capture		least the same flows as, the corresponding storm drain." The intention of part b) of the definition is to address this concern of storm drain design. (See Ocean Plan Amendment and Part I ISWEBE definition for "full capture system.")

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	design criteria should be revised to match existing criteria in municipal MS4 permits for rainfall intensity or at a minimum grandfather devices installed or under design in existing MS4 permits.		
26.7	Certification Process: The Staff Reports indicates that devices already approved by the Los Angeles Regional Board will be accepted but that all new full capture devices used to satisfy Track 1 would be certified and approved by the State. A listing of these devices would be useful. However, there is no listing of approved devices nor is information provided on what needs to be submitted for obtaining approval of the new device. The processing and review time to get a device approved is also not specified. This information is important to know in selecting future trash control devices. It may be possible that a municipality elects to implement a device that has not been approved and submits the device for State approval. If the State fails to act in a timely manner the potential exists for the municipality to be out of compliance because it failed to install 10% of the devices due to State delays or inaction. Recommendation: Provide a listing of approved full capture devices and the		Please see Response to Comment 10.5.

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	information needed to get full capture devices approved and the anticipated review time.		
26.8	A major concern with the program is the timing of the proposed amendments and their cost implications. Over the last ten years there has been a significant expansion in the listing of impaired waters statewide and development of their corresponding TMDLs. TMDLs typically cover one pollutant and can cost millions of dollars annually to implement as shown by the statewide trash and bacteria TMDLs and the proposed solution for treating selenium in Orange County. Add to these existing TMDLs additional TMDL programs or a program such as the one proposed and the result can be millions of dollars in annual expenditures to municipalities. Because of the significant cost of this program, the additional costs cannot be taken lightly and it must be noted that the proposed program is being implemented statewide without a finding of water body impairment that is typically a prerequisite before dischargers are required to comply with imposed limits. In addition, stakeholders are generally involved in developing TMDLs so that the solution is clear and everyone understands the potential costs. In this program, stakeholders are being		Trash is a priority pollutant across California. A dual alternative "compliance track" approach tailored to each NPDES storm water permit category would provide flexibility to permittees to determine the most effective means of controlling trash while taking into consideration particular site conditions, types of trash, and the available resources for maintenance and operation. With the priority land use approach, efforts to control trash would be focused to the areas that contribute the most to the problem. This approach contrasts a trash TMDL approach which establishes a numeric target of zero for the entire watershed. Therefore, the Trash Amendments provide a lower resource alternative to control trash in contrast to a water body by water body TMDL approach.

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	given an opportunity to provide comments instead of a thorough vetting of the program.		
26.9	To assess the expected program cost to municipalities, Appendix C provides tables of costs incurred by municipalities in the Los Angeles region and from a survey of MS4 permittees. These tables provide useful information and show that the anticipated program costs will be in the millions. Data from the City's experience with trash capturing devices has shown that automatic retractable screens cost an average of $833 per catch basin. Add to that the cost of pipe screen connectors to make it a full capture system and the result would be an additional $300-$400 dollars per catch basin. This translates to about $1100 per catch basin or about $14.90 per capita. This amount is higher than the $8.96 shown in Table 13 of Appendix C (page C-24) and the $800 per unit noted on page C-30. Experience with the automatic retractable screens has also shown that they require extensive maintenance to prevent captured trash from discharging downstream. As a preliminary estimate to assess the cost to the City, if we assume a range of one third to one half of the City's 1900 catch basins are to be retrofitted with automatic retractable		The Economic Considerations in Appendix C provides a summary overview of the costs associated with reasonably foreseeable means of compliance that permittees may select to be in compliance with the proposed Trash Amendments. The economic analysis is conducted at the macro level to assess the estimated overall impact of the proposed Trash Amendments and provides gross average estimates of the cost per capita and the cost per acre based on specific cost assumptions. The Economic Considerations does not specify the compliance cost for specific permittees. Page C-8 of the analysis states that "A more detailed analysis would be needed to estimate cost at the micro or project-specific level for each individual permittee." The value of $8.96 per capita in Table 13 (page C-24) is the average capital cost per capita for communities with a population between 100,000 and 500,000. The City of Orange estimate of $14.90 per capita is within the range of cost considered in the analysis for their population size group (139,419). On page C-32 of the economic analysis, the State Water Board identified that the cost per capita ranged from $3 per person per year to up to $60 per person per year.

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	screens and pipe connector screens, the anticipated costs would range from $700,000 to about $1,000,000. However, these devices are maintenance intensive and this cost must be balanced against a vortex separator which needs to be maintained 1-2 times per year but is likely to cost up to $100,000 per unit. A mixture of the two types of trash control devices is likely to be the preferred solution but that would put the program cost in the millions of dollars.		
26.10	Faced with the anticipated high costs of the program and the ever expanding universe of storm water programs that compete for the same resources, municipalities will have a difficult time securing funding without assistance. Municipalities cannot simply raise rates. The Bighorn-Desert View Water Agency decision of 2006 effectively prohibited raising utility rates under Proposition 218 without voter approval. With no money to fund trash control devices, this program along with health and safety programs will compete for General Fund revenues. Municipalities will be faced with the difficult choice of deciding which programs to fund at the expense of others. The State should consider ways to fund the program or assist municipalities in finding appropriate funding. Another way to lessen the		Please see Responses to Comments 10.4 and 29.4.

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	financial burden is to expand the time allowed for implementation of the program. TMDLs with anticipated high costs now routinely allow implementation periods up to twenty years. Recommendation: a) The amendments should be revised to provide up to twenty years to implement the trash control program. b) The State should assist in funding the trash control program or find funding solutions.		
27.1	The City also supports and includes by reference comments submitted by the Bay Area Stormwater Management Agencies Association (BASMAA) and the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP).		Please see Response to Comment Letters 4 and 63.
27.2	For the expanded plastic bag ordinance, data on store compliance, observations of bag use at stores, as well as field observations and counts of bags at clean up events show that plastic bags used and found in the environment have been significantly reduced. Therefore, the benefit of such source control actions should be better accounted for in the Trash Amendments.		Please see General Response to Comment Letter 1 and Comment 1.3. (Ocean Plan Amendment at removed III.L.5; Part I ISWEBE at removed IV.A.6)
27.3	The City of Palo Alto supports BASMAA's request to provide an alternative track in the		Please see Response to Comment 4.2.

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	implementation requirements of the trash amendments for the San Francisco Bay Area Phase I MS4 dischargers under the jurisdiction of the San Francisco Bay Regional Water Quality Control Board. Bay Area permittees have already spent significant resources on preparing and implementing long-term trash reduction plans and mapping community-specific high, medium, and low trash generating areas. This effort provides a path to complying with trash reduction goals in the Bay Area Phase I regional NPDES municipal stormwater permit. Therefore, the submittal of written notice on whether a permittee will follow Track 1 - full trash capture or Track 2 - a combination of controls, as well as the requirement for those permittees electing to follow Track 2 to submit an implementation plan, is duplicative of efforts already undertaken in the Bay Area and would divert resources away from implementing trash controls already planned. At a minimum, the requirements for duplicative efforts should be waived for Bay Area permittees, and priority land areas identified in the long-term trash plans should be deemed acceptable.		
27.4	The City of Palo Alto is also concerned about the monitoring requirements included in the Trash Amendments, specifically the		Please see Response to Comment 4.6.

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	monitoring questions asking MS4s to determine whether trash discharge has decreased through the MS4 and in the receiving water from year to year. The City supports BASMAA's request to replace these questions with "to what extent has trash from priority land uses been addressed?" This question could be answered through on-land visual assessments, which have been performed successfully as an assessment tool in Bay Area municipalities, including Palo Alto. Receiving water trash amounts should not be used to measure compliance with stormwater trash reduction requirements. While the goal of all our efforts is to reduce trash in receiving waters, the receiving waters in Palo Alto are heavily influenced by discharges from areas that Palo Alto has no jurisdiction over (notably Highway 101, which is under the jurisdiction of Caltrans).		
27.5	Trash data from shoreline clean ups is highly variable from year to year and is not an accurate indicator of trash that may have been discharged through the storm drain system nor of the effectiveness of the City's substantial efforts in controlling trash. Rather than prescribing documentation of Track 2 performance, permittees should have the ability to determine and implement cost-effective methods to		The Trash Amendments do provide the ability and flexibility to the permittee to determine and implement cost-effective methods to monitor trash reduction associated with MS4s. In the method developed for the proposed Trash Amendments, the permittee who selects Track 2 must demonstrate that the selected trash controls are effective and achieve equivalent trash load reductions to Track 1 in order to be in compliance with the prohibition of discharge for trash. The proposed final Trash Amendments introduced the term full capture system equivalency to provide clarity of how to demonstrate and achieve equivalent trash load reduction in Track 2 to Track 1. The Trash Amendments both establish the framework to full

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	monitor trash reduction associated with MS4s.		capture system equivalency and Track 2 monitoring and provide the flexibility to both the permittee and permitting authority to determine the permit specifics within the framework.
28.1	We recognize the importance of developing effective, cost-effective measures that will result in overall trash reduction in these sensitive environments. While Roseville supports the goal of incorporating feasible measures to reduce trash impacts, this goal must be balanced with practical realities. For example, the draft Amendment requires full capture of trash within "high priority" land uses, which we contend is an unreasonable and unattainable goal that will ultimately make permittees vulnerable to increased legal challenges.		Trash is a priority pollutant across California. The State Water Board agrees that the Trash Amendments should provide flexibility for permittees to determine the most effective and efficient methods and controls to control trash discharges from the areas that have high trash generation rates. Therefore, the Trash Amendments focus on a dual alternative "compliance track" approach to provide the flexibility to permittees to determine the most effective means of controlling trash while taking into consideration particular site conditions, types of trash, and the available resources for maintenance and operation. The priority land uses are based on lessons learned and extensive data collected from permittees with existing trash controls, either trash TMDLs or permit conditions. The priority land uses include five categories of land uses that generate high amounts of trash.
28.2	We appreciate the efforts of the State Board staff to conduct stakeholder meetings held in 2013 on the proposed draft; however, there was virtually no communication with the regulated communities between the time of the last workshop and the release of the draft amendment on June 11th of this year. Based on the information provided during the July 16th workshop, it was apparent that the environmental community was fully apprised of the content and requirements being included in the draft document. We believe that if		Please see Response to Comment 3.1.

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	the regulated communities participated in a similar manner during the development of the draft that the outcome would have resulted in a document that was better understood resulting in more effective outcomes.		
28.3	We also, find that the draft Amendment is economically impracticable. Roseville along with many other jurisdictions throughout the state is just beginning to recover from the economic downturn and have neither staff nor resources capable of responding to the vast majority of the increased requirements. Our initial analysis of the draft is that it will cost Roseville approximately $8 million to fully implement the proposed requirements over a ten year period. The cost estimate does not include the expenses of maintaining the equipment or systems in perpetuity. Due to constraints on fee collection for stormwater systems these costs directly impact our City's general fund, which continues to be subjected to a list of growing demands placed on it each-and-every year. The reality of local government's limited funds must be addressed within the draft Amendment through safe-harbor provisions for permittees who are fiscally unable to comply.		Please see Responses to Comment 10.4.

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29.1	The Proposed Trash Amendments stem from identified trash-impaired water bodies in highly populated regions of the state (Los Angeles, San Francisco, San Diego, and Colorado River Basin). The City appreciates the efforts of the State and Regional Water Boards to work with municipalities to address the nature of this problem specific to these areas. The current proposal uses studies from these areas and superimposes these solutions statewide. This extrapolation does not translate to the City or other communities of lesser population densities, differing geography, and demographics. The Proposed Trash Amendments clearly are focused on MS4 discharges as the primary contributor of trash. This is evidenced by the structure of Track 1 and Track 2 alternatives for compliance. For Track 1 compliance, only MS4 discharges are addressed. This track fails to address other sources of trash in waterways which can be the primary contributor of trash in many communities. This could result in implementation of an expensive and ineffective prescriptive methodology for many communities, without any measurable results from a baseline condition to assess true effectiveness. Track 2, as proposed, does create somewhat of a		Please see Responses to Comments 4.6, 6.1, 6.2, 10.1, 10.7 and 12.2.

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	methodology for assessment and measurement, but creates an endless process of chasing an unachievable goal of zero trash. Failure to be able to achieve this goal under Track 2 will drive many municipalities to move toward Track 1 based purely on the potential of third party lawsuits and not on what is best for water quality. We recommend that the Proposed Trash Amendments be modified to require a clearly-defined methodology to perform these assessments to determine the actual impact of trash in all MS4 jurisdictions. This assessment should not be limited to trash from MS4 discharges, but should include identification of all sources (i.e. illegal dumping, windblown trash, etc.). This would allow the municipalities to calibrate their efforts to mitigate trash based on what is the major source contributor. If implemented thoughtfully, the State could be provided much needed data on the primary sources of trash, which could drive science-based regulations for source control.		
29.2	The proposed regulations place an undue burden on MS4 communities and do not require the producers of products that negatively impact the environment to be part of the solution. Plastics, fast food wrappers, cigarette butts, and other		Please see Response to 4.5.

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	single use items are the bulk of the items that are contributing to trash in waterways. Where possible the State should take action to eliminate or reduce the source of trash. Through forward-thinking programs, and working with other State agencies such as the Department of Resources Recycling and Recovery, trash reduction can be achieved through statewide bans on specific products and increased fees to incentivize recycling. There are many great examples already in place where source control or alternative products have been effectively implemented statewide. Chlorpyrifos and Diazinon were once used as primary pesticides for decades and resulted in impairments in water bodies in many regions. Copper used in brakes is also a water quality problem. Through statewide phasing out of these products, and changing to alternative materials that achieve the same results, these impairments are no longer ongoing threats to water quality. In cases where elimination of a product is not feasible, such as the use of plastic and glass bottles, significant trash reductions could be achieved by increasing redemption values and making recycling more convenient. The Cal Recycle program for waste oil can be a model for implementing and funding these		

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	types of activities. Source control and funding for trash mitigation should be borne by the producer and consumer of these products. By placing the burden to mitigate these issues on municipalities the Proposed Trash Amendments do little to address the source of the issue for the long term.		
29.3	The City has over 20 years of water quality data that is used to establish which pollutants of concern (POC) or target pollutants is the highest priority for the community. Programs and funding have been defined based on the prioritization of the water quality conditions. The Proposed Trash Amendments will require funding for implementation, which with the limitations of Proposition 218 will likely require the recalibrating of funds from other water quality priorities. Effectively trash will be the highest priority for funding and resources, while identified watershed based priorities become a secondary issue. The Proposed Trash Amendments need to recognize the value of current management programs and not divert resources away from ongoing successful efforts to control t rash in our waterways or place additional demands on already limited resources. We urge the State Water Board to allow MS4 programs with existing POC-focused water quality		Please see Responses to Comments 10.4 and 11.9.

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	implementation plans to address trash in the prioritization context of those existing plans.		
29.4	The cost to local government of complying with the Proposed Trash Amendments is significant. The economic analysis included as Appendix C to the Draft Staff Report estimates an incremental annual cost for Phase I MS4s ranging from $4 to $10.67 per capita. This cost estimate includes capital and operation and maintenance (O&M) costs, but the analysis excludes costs of developing implementation plans, monitoring, and reporting, citing the uncertainty of such costs. For the City of Sacramento, with a population of approximately 475,000 residents, using the State Board's own economic analysis translates to an additional annual cost ranging from $1.9 million to $5.07 million to implement the Proposed Trash Amendments. As noted, this does not include costs of developing implementation plans, monitoring, and reporting, which also can be significant based on the City's experience with the development of implementation plans, monitoring, and reporting to meet other NPDES requirements. The Draft Staff Report does not include any explanation or discussion of how agencies responsible for operation of MS4s, like the City, are expected to pay		Please see Responses to Comments 4.7 and 10.4. Regarding the estimation of costs referenced by commenter, Water Code section 13241 requires the State Water Board to consider certain factors, including economic considerations, in establishing the narrative water quality objective for trash which it did as more fully described in the Staff Report (Section 9 and Appendix C). In accordance with the California Code of Regulations, title 23, section 3777, subsections (b)(4) and (c), the Staff Report also considers a range of economic factors in its environmental analysis of the reasonably foreseeable methods of compliance, but the Staff Report does not engage in speculation or conjecture, nor does it conduct a site-specific project level analysis for the methods of compliance. The Economic Considerations in Appendix C provide an overview of the costs associated with reasonably foreseeable means of compliance that permittees may select to be in compliance with the Trash Amendments. The economic analysis was conducted at the macro level to assess the estimated overall impact of the Trash Amendments and provides gross average estimates of the cost per capita and the cost per acre based on specific cost assumptions. The Economic Considerations does not specify the precise compliance cost for specific permittees. Page C-8 of the analysis states that "A more detailed analysis would be needed to estimate cost at the micro or project-specific level for each individual permittee." It is very difficult to determine the actual cost of implementing compliance programs because of the highly variable factors and unknown level of implementation among different permittees and differences in monitoring and reporting by permittees. It is also difficult to isolate program costs attributable to permit compliance because they can vary widely. Despite those difficulties, effort has been made to identify program compliance costs to aid in the economic

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	these significant additional costs to address a problem- the deposit of trash- that the agencies do not create and cannot fully control. The City funds its MS4 NPDES permit compliance from storm drainage rates paid by City businesses and residents. The City's storm drainage system currently has a significant backlog of unmet capital improvement needs because the lion's share of annual revenues from storm drainage rates must be spent to meet current O&M requirements. Adding capital, O&M, implementation, monitoring, and reporting requirements to the City's NPDES permit to comply with the Proposed Trash Amendments will impose significant new costs that the City cannot fund with its current storm drainage rate revenues. Unless funding is provided by the State or from other sources, these new requirements may constitute an unfunded State mandate subject to re imbursement under article XIII B, section 6 of the California Constitution. Section 6 of article XIII B provides, in relevant part: "Whenever the Legislature or any state agency mandates a new program or higher level of service on any local government, the State shall provide a subvention of funds to reimburse that local government for the costs of the program or		consideration required by Water Code section 13241. To implement the narrative water quality objective for trash in accordance with Water Code section 13242, the Trash Amendments contain a prohibition of discharge, implementation provisions, time schedule, and monitoring and reporting requirements. The Trash Amendments do not establish the requirements for the monitoring programs or reports, although they do provide that the reports should consider addressing a number of issues to demonstrate compliance with the requirements applicable to the discharger and that such reports must be submitted to the applicable Water Board annually. The costs for completing the monitoring and reporting reports will vary depending on the permittee's size and particular compliance track (Track 1, Track 2, or the existing permit prohibition in the general permit for storm water discharges associated with construction activities). Since the Trash Amendments do not establish the specific requirements for the monitoring, the economic analysis does not include an estimate of those potential costs. These costs are expected to be negligible relative to capital and operation and maintenance costs. However, to provide a further estimation on the cost of monitoring, the State Water Board has allocated $1,080,000 in Proposition 84 Storm Water Grant Program funds to the project Tracking California's Trash focused on developing planning, designing and monitoring templates for evaluating trash controls necessary for complying with Track 2 requirements. In addition, State Water Board estimates the cost to perform trash monitoring and reporting for a city with 350,000 inhabitants (such as Bakersfield). The initial estimate indicates that the Track 2 monitoring and reporting might cost on the order of $105,000 annually or $0.30 per year per capita. Additionally, there is an element of cost consideration inherent in the maximum extent practicable (MEP) standard. While the term "maximum extent practicable" is not specifically defined in the Clean Water Act or its implementing regulations, U.S. EPA,

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	increased level of service ...." This subvention requirement does not extend to federally mandated programs (Government Code§ 17556 (c)), and a program that requires a higher level of service does not constitute a mandate within the meaning of article XIII B, if the local agency has the authority to levy charges, fees, or assessments sufficient to pay for the program (Government Code,§ 17556 (d)). The subvention requirement should apply in this instance, because: (1) the Proposed Trash Amendments are not federal mandates since they exceed any specific requirements for MS4s specified in the Clean Water Act or other federal law; and (2) while the City has authority to impose storm drainage rates to pay its cost to comply with the Proposed Trash Amendments, this authority is significantly constrained by the constitutional requirement specified in Proposition 218 (California Constitution article XIII D, section 6, subd. (c)) for voter approval of any increase in storm drainage rates. Further, the recent passage of Proposition 26 (California Constitution article XIII C, section 1) prevents the City from adopting new regulatory fees to fund such costs without voter approval of a special tax. For these reasons, imposing the Proposed Trash Amendments on the		courts, and the State Water Board have addressed what constitutes MEP. MEP is not a one-size fits all approach. Rather, MEP is an evolving, flexible, and advancing concept, which considers practicability. That includes technical and economic practicability. Compliance with the MEP standard involves applying BMPs that are effective in reducing or eliminating the discharge of pollutants in storm water to receiving waters. BMP development is a dynamic process, and the menu of BMPs may require changes over time as experience is gained and/or the state of the science and art progresses. MEP is the cumulative effect of implementing, evaluating, and making corresponding changes to a variety of technically appropriate and economically practicable BMPs, ensuring that the most appropriate controls are implemented in the most effective manner. The State Water Board has held that "MEP requires permittees to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the costs would be prohibitive." (State Water Board Order WQ 2000-11.) Regarding commenter's assertion that the costs necessary to comply with the Trash Amendments may constitute an unfunded state mandate, the State Water Board disagrees. The costs incurred by a local government to implement the provisions required by the Trash Amendments are not subject to the requirement contained in Article XIIIB, Section (6) of the California Constitution that local government costs mandated by the State must be funded by the State—for numerous reasons, including the following: First, the Trash Amendments requirement that a MS4 permittee elect and comply with either Track 1 or Track 2 is not self-implementing. The Trash Amendments require the applicable State or Regional Water Board to include the requirements contained in the Trash Amendments into applicable NPDES permits. Any argument that the Trash Amendments are an

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	City's MS4 permit without providing funding may create an unfunded State mandate for which reimbursement will be required.		"unfunded state mandate" is premature until the issuance of such permits. Second, reimbursement or subvention does not extend to federal mandated programs. The costs associated with implementing the permit's eventual conditions (including compliance with Track 1 or Track 2, monitoring, implementation plans, etc.) are not a state, reimbursable mandate because the trash provisions are required under the broad, federal mandate of the Clean Water Act NPDES program. The water boards must comply with federal law when issuing a NPDES permit. The Clean Water Act compels the State Water Board to include broad treatment controls in MS4 permits as it determines necessary to reduce the discharge of pollutants. (CWA § 401(p)(3)(B)(iii).) Although federal law does not expressly require the precise trash provisions' treatment controls, upon incorporation into permits, the trash provisions would come within the mandate of Clean Water Act section 401(p)(3)(B)(iii) that permits contain controls to reduce trash to the "maximum extent practicable" and "such other provisions as the [State Water Board] determines appropriate." The requirements contained in the Trash Amendments do not exceed the obligations required under federal law but comports with the federal "floor." Additionally, it is well established that "[a] mere increase in the cost of providing a service which is the result of a requirement mandated by the state is not tantamount to a higher level of service." (*Long Beach Unified Sch. Dist. v. State of California* (225 Cal.App.3d 155, 173.) Third, compliance with Track 1 is not a state mandate because a permittee is not absolutely required to implement Track 1. A permittee may implement any combination of controls identified under Track 2 (full capture devices, multi-benefit projects, institutional controls and other treatment controls). Such controls include best management practices of street sweeping, education and outreach programs, trash collection, and ordinances. Any permittee selecting Track 2 may cater the controls it implements to the unique circumstances of the trash

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			generation within its jurisdiction, so long as the permittee can demonstrate that those controls will be equally effective in controlling trash as the "full capture system equivalency" standard. Fourth, under the Clean Water Act, the discharge of pollutants is prohibited without a permit. The permittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in federal Clean Water Act section 301, subdivision (a) and in lieu of numeric restrictions on their discharges. To the extent, the local agencies have voluntarily availed themselves of the permit, the program is not a state mandate. (See e.g., *County of San Diego v. State of California* (1997) 15 Cal.4th 68, 107-08.) Likewise, the permittees have voluntarily sought a program-based municipal storm water permit in lieu of a numeric limits approach. (See *City of Abilene v. U.S. E.P.A.* (5th Cir. 2003) 325 F.3d 657, 662-63 [noting that municipalities can choose between a management permit or a permit with numeric limits].) The local agencies' voluntary decision to file a report of waste discharge proposing a program-based permit is a voluntary decision not subject to subvention. (See *Environmental Defense Center v. USEPA* (9th Cir. 2003) 344 F.3d 832, 845-48.) Fifth, reimbursement is not required where a local agency permittee has authority to levy charges, fees, or assessments sufficient to pay for such a program. Assuming for the sake of argument that a local agency assesses fees to address trash generation in a way that requires voter approval pursuant to Proposition 218 or Proposition 26, as commenter suggests, that does not mean the local agency does not have fee authority for purposes of subvention/mandates law.
29.5	MS4s communities would be considered in full compliance with the prohibition of trash discharge so long as they were fully implementing		Please see Response to Comments 4.1 and 10.9.

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	Track 1 or Track 2. However, the Proposed Trash Amendments do not indicate that meeting the discharge prohibition requirements would also mean the MS4s are in compliance with the stated narrative water quality objective. The City requests language be added to the Proposed Trash Amendments indicating that the MS4s are in compliance with the receiving water limitations so long as they are fully implementing Track 1 or Track 2. In conclusion, the City believes that the intent of the Proposed Trash Amendments has merit, but fails to address the issue in a well-rounded and scientific manner. We look forward to working with the Board on a collaborative process to move this issue forward and create a consistent trash policy that also addresses the unique nature of each community. Based on our comments and those comments and concerns expressed by stakeholders at the July 16, 2014 workshop, the City requests that when the revised draft of the Trash Amendments is released for public review that the entire document, not just the changed text, be open for further comment. This will allow stakeholders to consider the revisions in the context of the entire proposal.		

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30.1	The City is again encouraged by the State Water Resources Control Board's (State Board) stakeholder engagement in the adoption process as this provides an opportunity to incorporate stakeholder perspectives into the trash amendments and develop a sound approach for protecting beneficial uses that are impaired due to trash.		The State Water Board has undergone an extensive stakeholder engagement with the proposed Trash Amendments in order to create a program to provide statewide consistency and flexibility to protect beneficial uses that are impaired due to trash. (See Final Staff Report Section 2.14.) Please see Response to Comment 10.12.
30.2	We support the use of the narrative water quality objective as proposed as it provides a clear, concise definition from which the City can prioritize management decisions using our existing watershed management plans. The City also supports the option of developing and implementing regulatory source controls and the potential for time extensions where these are implemented. As proposed, the State Board has provided incentives for local jurisdictions to develop innovative approaches to regulatory compliance.		Comment noted. The State Water Board is appreciative of the support.
30.3	The Proposed Trash Amendments need to recognize time schedule differences between implementation and certification of full capture systems. While the Los Angeles TMDL program has provided a list of certified full captured systems, the Proposed Trash Amendment should allow permit holders an opportunity to evaluate additional full capture		The State Water Board does not anticipate that the timing of implementation plans and certification of full capture systems will be an issue. In addition to systems certified by the Los Angeles Water Board, the Trash Amendments have been modified to incorporate full capture systems listed in Appendix I of the Bay Area-wide Trash Capture Demonstration Project. This provides a wide range of full capture systems to begin development of an implementation plan based on the existing market conditions for full capture systems. (See Final Staff Report Section 5.1 and the Ocean Plan Amendment and Part I

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	systems that are applicable at the local level. It is recommended that the compliance schedule start when the Certification of a Full Capture Systems proposed by a permit holder has been approved by the State Board.		ISWEBE definition for "full capture systems.")
30.4	It appears that the Proposed Trash Amendments will in effect be an alternative to a TMDL, thereby preventing the need to develop trash TMDLs in the future. The City recommends additional language be added to clarify the intent of the State Water Resources Control Board with respect to the development of future TMDLs and that implementation of the Proposed Trash Amendments represents a single regulatory action addressing MS4 NPDES Permittee requirements thereby removing the need to develop wasteload allocations via a TMDL for MS4 NPDES Permittees. Multiple pollutant TMDLs are allowed 20 year compliance schedule to achieve the necessary load reductions. Recommendation - Expand the compliance schedule to 20 years when trash is being included in a watershed with other TMDLs.		Please see Responses to Comments 7.7 and 10.10.

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30.5	It is unclear whether implementation of Track 1 or 2 would ensure compliance with all of the provisions in the Proposed Trash Amendments, including the water quality objectives. Language should be included within the Proposed Trash Amendments to state that implementation of Track 1 or Track 2 constitutes compliance with the discharge prohibitions and receiving water limitations.	Recommendation- Amend language in III.I.6 (Ocean Plan) and IV.B.2 (Inland Surface Waters, Enclosed Bays, and Estuaries Plan) as follows: The discharge of Trash to surface waters of the State, or the deposition of Trash where it may be discharged into surface waters of the State is prohibited. Compliance with this prohibition of discharge <u>and with the receiving water limitations</u> shall be achieved as follows:	Please see Response to Comments 4.1 and 10.9.
30.6	The Proposed Trash Amendments do not account for current watershed planning and prioritization efforts are occurring throughout southern California. Under the current Phase I MS4 Permit for the San Diego Region (Order R9-2013-0001), the watershed co-permittees and stakeholders (including San Diego Water Quality Control Board, Region 9 staff) are required to identify, assess, and prioritize pollutants, including trash, within the various watersheds in the San Diego region. As proposed, the Proposed Trash Amendments will supersede recent planning efforts, diverting limited	Recommendation- Modify language in Section III.L.2.a. (Ocean Plan) and IV.B.3.a. (Inland Surface Waters, Enclosed Bays, and Estuaries Plan) as follows: a. <u>For discharges to water bodies in which the beneficial uses are impaired by trash or discharges to water bodies located in regions where MS4 permittees have determined trash to be a highest priority</u>	Please see Response to Comment 11.9.

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	resources from the highest priority water quality conditions (e.g., bacteria) within a particular watershed to trash, which has often not been found to be the highest priority water quality condition in a watershed. The watershed planning and prioritization process in the Proposed Trash Amendments is well aligned with the San Diego Regional Water Quality Control Board's Practical Vision for protecting receiving waters. The Practical Vision creates a set of guiding principles including prioritization of water quality conditions based on receiving water quality, which is followed by implementation of strategies to address the highest priority water quality conditions. Implementation of the Proposed Trash Amendments should be required in watersheds where either trash has been identified as causing impairment or, if through a watershed management planning process, trash has been identified as the highest priority water quality condition. Where trash has not been identified as causing an impairment or as a highest priority water quality condition, it should be addressed according to current MS4 Permit requirements.	water quality condition pursuant to a watershed management program required under a MS4 Permit, MS4 permittees with regulatory authority over priority land uses shall comply with the prohibition of discharge in Chapter III.I.6.a. herein by either of the following measures:	

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30.7	The Proposed Trash Amendments state "treatment controls likely to be used for compliance with the proposed Trash Amendments may include installation of catch basins inserts within existing catch basins." In many cases, municipalities are moving toward LID installations, so installing a catch basin insert may not line up with the green infrastructure plans. While LID is included as an option under Track 2, the amendments and certified trash capture devices should recognize LID measures under Track 1, as full-capture devices.	Recommendation- Amend language for Track 1 as follows: (1) Track 1: Install, operate and maintain full capture systems (e.g., catch basin inserts, hydrodynamic separators, low impact development BMPs)	The State Water Board aims to utilize storm water as a resource to improve water quality and supply, as well as protect and restore key watershed processes such as overland flow, groundwater recharge, and pollutant uptake. When done properly, catch basins can help reduce flooding, mitigate storm water pollution, enhance habitat, and improve water use efficiency. Low impact development is a key BMP to treat storm water as a resource. If low impact development projects and multi-benefit projects can be demonstrated and certified to be full capture systems, then these projects will be considered applicable under Track 1. Additionally, please see Response to Comment 10.5 for more discussion on full capture system certification. (Ocean Plan Amendment and Part I ISWEBE definition for “full capture system.”)
30.8	The Proposed Trash Amendments appear to require implementation of Track 1 or Track 2 for any storm drain that captures any runoff from a priority land use. This would trigger compliance requirements for a storm drain even if only a very small portion of a priority land use drains to the storm drain.	Recommendation- Amend language for Tracks I and II to designate a threshold (e.g., priority land use covers a percent of the catchment area) that would trigger implementation within the catchment. (1) Track 1: Install, operate and maintain full capture systems in their jurisdictions for all storm drains that capture runoff in catchment areas where priority land uses comprise >25% of the land area in the catchment area.	Please see Response to Comment 11.4.

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		(2) Track 2: Install, operate, and maintain any combination of full capture systems, other treatment controls, institutional controls, and! or multi benefit projects within either the jurisdiction of the MS4 permittee or within the jurisdiction of the MS4 permittee and contiguous MS4s permittees, so long as such combination achieves the same performance results as compliance under Track 1 would achieve for all storm drains that captures runoff in catchment areas where priority land uses comprise >25% of the land area within the catchment area.	
30.9	As defined in the Proposed Trash Amendments, the defined priority areas may not be appropriate for all jurisdictions because they do not consider local knowledge of receiving water conditions and previous data collection efforts. As currently drafted, the amendments assume that there is a problem in the defined priority areas, effectively imposing a costly "one size fits all"	Recommendation- Modify language in Section III.L.2. (Ocean Plan) and IV.B.3 (Inland Surface Waters, Enclosed Bays, and Estuaries Plan) by adding Section III.L.2.e and IV.B.3.e, respectively, as follows: e. A regulated MS4	Please see Responses to Comments 10.7 and 15.2.

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	approach onto the local jurisdictions. The City supports the concept of prioritized land uses to address problem areas; however, the approach should allow for more local flexibility in this prioritization. The City has managed an extensive monitoring program for evaluating trash conditions at the MS4 major outfalls for many years, resulting in an in-depth understanding of the problem areas within its watersheds. While the Proposed Trash Amendments provide flexibility for the Regional Boards to designate additional priority areas, it does not appear to provide flexibility for Responsible Agencies to lower the priority in certain areas. Local knowledge, supported by data, should suffice as justification for local jurisdictions to designate appropriate drainage areas as "non-priority," regardless of land use.	permittee may determine which priority land use areas in its jurisdiction generate trash accumulation in receiving waters (or in areas adjacent to receiving waters) in such amounts that do not adversely affect beneficial uses, or cause a nuisance condition. In the event that the regulated MS4 permittee identifies such areas and provides data supporting such a finding, the permitting authority may waive the compliance requirement of Chapter III.L.2.a/IV .B.3 .a for that MS4 permittee with respect to the identified priority land use locations. The regulated MS4 permittee shall submit documentation supporting a continued finding of no beneficial use impairment or nuisance condition with annual reports as required under Section III.L.6/IV.B.7.	

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30.10	Construction sites may generate significant amounts of trash and the City supports regulation of trash from facilities covered under the Construction General Permit. However, where construction does not result in the developed site falling into a priority land use category under the Proposed Trash Amendments, controls specific to trash should only be required during construction.	Recommendation- Add language in Section III.L.2.c (Ocean Plan) and IV.B.3.c (Inland Surface Waters, Enclosed Bays, and Estuaries Plan) to clarify. Termination of permit coverage for industrial and construction storm water dischargers shall be conditioned upon the proper operation and maintenance of all post-construction controls as required by local land development regulations (e.g., full capture systems, other treatment controls, institutional controls, and/or multi-benefit projects) used at their facility(ies).	It is not the intention of the State Water Board to add a significant burden to construction site dischargers. The current Construction General Permit already has prohibition on trash (debris) which may prove adequate to implement the Trash Amendments. Please see Responses to Comments 5.1-3.
30.11	Through provisions III.L.2.d and III.L.3 (Ocean Plan) and IV.B.3.d and IV.B.4 (Inland Surface Waters, Enclosed Bays, and Estuaries Plan), the Regional Water Quality Control Board is provided discretion to add additional requirements for other sources, including non-point sources. While local flexibility may be appropriate (see Comments #3, #6), a statewide approach that provides broad discretion to Regional Water Quality Control	Recommendation - The Proposed Trash Amendments should provide clear guidance on how the discretion should be used by the Regional Water Quality Control Boards.	Please see Response to Comment 11.5.

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	Boards can result in uneven implementation and undermines the concept of a statewide approach.		
30.12	It is evident that other regulated sources (e.g., individual NPDES permit holders, agricultural operations) often contribute trash to receiving waters. While the City continues to work with its partners to identify successful management strategies for preventing trash from reaching receiving waters, it is critical that the Proposed Trash Amendments limit the liability of MS4 Permit holders for these other regulated sources and support a process that allows the City to apply its resources towards controlling trash within its areas of responsibility. The City recommends that the State Water Resources Control Board require that other regulated entities (e.g., individual NPDES permit holders, agricultural operations) implement the Proposed Trash Amendments through a regulatory process external to the NPDES Phase I and Phase II MS4 permits.	Recommendation-Language in III.L.3 (Ocean Plan) and IV.B.4 (Inland Surface Waters, Enclosed Bays, and Estuaries Plan) appears to provide direction/authority to the permitting authority to address other sources of trash. Examples should be added to include other NPDES permit holders and agricultural operations. The language could be strengthened by citing the authority from which this oversight is provided in the California Water Code (i.e., CWC §13263, 13267). The State Water Resources Control Board should also include provisions to require implementation of the Proposed Trash Amendments, not only through inclusion in MS4 Permits, but through other NPDES Permits, WDRs, and Waiver Provisions.	Please see Response to Comment 10.6.

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30.13	The City supports the option for time extensions where regulatory source controls are implemented and supports the concept of allowing credit for source control programs that are implemented prior to the effective date of the Proposed Trash Amendments. However, source control initiatives can take many years to come to fruition. Therefore, limiting the timeframes for implementation to three years from adoption may not be sufficient time to conduct research and outreach to communities in order to gain local support for true source control methodologies that may require behavioral changes on the part of the public. Due to the significant time necessary to develop and implement regulatory source controls, the three-year implementation timeframe in order to be considered for a time extension of the full compliance requirements, should be removed. In cases where regulatory source controls are employed within the 1 0-year compliance timeframe, Responsible Agencies should be eligible for the one year time extensions.	Recommendation- Modify language in Section III.L.5 (Ocean Plan) and IV.B.6 (Inland Surface Waters, Enclose Bays, and Estuaries Plan) as follows: The permitting authority may give MS4 permittees that are complying under Chapter III.L.2.a up to a three (3) year time extension for achieving full compliance in areas where regulatory source controls are employed that take effect prior to or within ten (10) years of the effective date of these Trash Provisions. Each regulatory source control employed by an MS4 permittee will be eligible for up to a one (1) year time extension.	Please see Response to Comment 4.5.

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30.14	Demonstration of performance under Track 2 should not be limited to monitoring. MS4 permittees should be allowed to propose the method of demonstrating performance in their implementation or watershed management plans. Receiving water monitoring should not be required since other sources outside of the control of MS4 permittees may contribute trash. While an entity may decide to conduct receiving water monitoring to demonstrate performance, it should not be mandated in the event another method is more appropriate (e.g., pounds of trash removed through a control measure). Further, The City has managed an extensive monitoring program for evaluating trash conditions at the MS4 major outfalls for 11 years. It is important for the Proposed Trash Amendments to recognize the value of existing data sets to answer management questions about the status and trends of any trash discharged from the MS4. As such, the Proposed Trash Amendments should include the flexibility to allow existing trash monitoring programs to continue under the Track 2 implementation requirements for areas that are not represented by a full capture device.	Recommendation: Include a provision in Track 2 monitoring requirements to allow for existing monitoring programs to fulfill implementation requirements at MS4 outfalls not fitted with a full capture device, as long as monitoring efforts demonstrate that trash is not accumulating in amounts that adversely affect beneficial uses or cause a nuisance condition.	Please see Response to Comment 4.6.

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30.15	The Proposed Trash Amendments indicate that the State Water Resources Control Board will take responsibility for the certification process for full capture systems, but those full capture systems previously certified by the Los Angeles Regional Water Quality Control Board would remain certified for use by permittees as a compliance method. A more extensive list of certified devices should be prepared prior to the adoption of the Proposed Trash Amendments. Full trash capture devices vary widely in capital and maintenance costs. Therefore, having a better idea of the devices that will be certified is necessary for MS4 permittees to develop credible costs estimates that inform the permittees whether to commit to Track 1 or Track 2. Alternatively, the language could be revised to indicate that any full-capture device that meets the stated criteria fulfills the certification requirement. Additionally, the timeframe for obtaining certification is a concern. The Executive Officer approval process needs to have a rapid turnaround time to allow permittees to move forward with planning and installation within the time schedule granted.	Recommendation- Amend language in Appendix I to define full-capture systems as follows: Prior to installation, full capture systems must be certified by the Executive Director, or designee, of the State Water Board. Uncertified full capture systems will not satisfy the requirements of these Trash Provisions unless they meet the criteria for full capture systems as defined above. Recommendation - Modify the compliance schedule to start when the state of California provides a list of certified full capture systems.	Please see Response to Comment 10.5.

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30.16	The City has many responsibilities and recognizes the importance of finding cost-effective approaches to provide the services our community requires and expects, while providing safe and clean water. As one of the largest cities in California, the expected costs to implement the Proposed Trash Amendments will be substantial and the value of implementing the provisions on a City-wide basis is uncertain given that trash has often not been identified as a receiving water priority through the watershed planning processes required under the current MS4 Permit (Order R9-2013-0001). Furthermore, the City's funding is limited and catch basin inserts and other likely control devices will not considered eligible for the water supply exception resulting from AB2403. As noted in previous comments (see comments #3, #6), the City would prefer that the Proposed Trash Amendments allow local jurisdictions to prioritize trash as a highest priority water quality condition, where substantiated, by taking into account all other water quality conditions and regulatory obligations. Further, the City should be allowed to use recently collected data to evaluate existing land uses to determine where there is a need for trash control, thus resulting in the implementation of controls where	Recommendations- Modify language in Section III.L.2.a. (Ocean Plan) and IV.B.3.a. (Inland Surface Waters, Enclosed Bays, and Estuaries Plan) as follows: (1) <u>For discharges to water bodies that are impaired by trash and for discharges to water bodies located in regions where MS4 permittees have determined trash to be a highest priority water quality condition pursuant to a watershed management program required under a MS4 Permit, MS4 permittees with regulatory authority over priority land uses.</u> (2) Modify language in Section III.L.2. (Ocean Plan) and IV.B.3 (Inland Surface Waters, Enclosed Bays, and Estuaries Plan) by adding Section III.L.2.e and IV.B.3.e, respectively, as follows: e. <u>A regulated MS4 permittee may determine which priority land use areas in its jurisdiction generate trash</u>	Please see Response to Comment 11.9.

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	necessary and appropriate. It would not be a prudent use of public funds to implement trash controls in all priority land uses, as designated in the Proposed Trash Amendments, without a local evaluation of the problem where data are available.	accumulation in receiving waters (or in areas adjacent to receiving waters) in such amounts that do not adversely affect beneficial uses, or cause a nuisance condition. In the event that the regulated MS4 permittee identifies such areas and provides data supporting such a finding, the permitting authority may waive the requirement of Chapter III.L.2.a/IV .B.3 .a for that MS4 permittee with respect to the identified priority land use locations. The regulated MS4 permittee shall submit documentation supporting a continued finding of no beneficial use impairment or nuisance condition with annual reports as required under Section III.L.6/IV.B.7. Recommendation - Please provide all calculations, notes, and assumptions used to determine proposed costs shown in Appendix C, Section V.	

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31.1	City of San Jose supports the recommendations in the BASMAA comment letter.		Please see Responses to Comment Letter 4.
31.2	Provide consistency between the proposed narrative Water Quality Objective and trash discharge prohibitions by revising the prohibitions to include language that qualify that the trash discharges being prohibited and controlled by the specified implementation requirements, is the trash "in amounts that cause impairment of beneficial uses or conditions of nuisance in receiving waters".		Please see Response to Comments 4.1 and 10.9.
31.3	Create an alternative that supports the progress of the Bay Area Phase I MS4s. San Jose and other cities regulated under the Bay Area Phase I permit have already spent considerable time and resources identifying, mapping, assessing, and programming high trash generating areas in their respective jurisdictions. The option of an alternative track will allow Bay Area cities to continue to focus on their high trash generation areas and implement their specific implementation plans. As currently written, Track 2 uses simplified land use designations to identify high trash generation areas. This varies significantly from the approach established by the Bay Area Phase I permittees. The proposed Track 2 approach does not contemplate the		Please see Response to Comment 4.2.

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	importance and necessity of applying local knowledge, nor does it account for site-specific variation. While Track 2, as currently drafted, will provide a valuable roadmap for Phase II jurisdictions that have not yet developed plans for trash reduction, it represents a step backward for San Jose and other cities that have spent years and millions of tax dollars preparing and submitting the required planning and compliance documentation and have made significant progress in targeting high priority trash generation areas.		
31.4	The City supports the use of institutional Controls as discussed in the State Amendments. However, granting a brief time extension for regulatory source control efforts, understates the significance of such actions in improving on-land and receiving water conditions. The City also recommends that the State Board use its authority to incentivize local government collaboration to support statewide advocacy for development of product and packaging redesign, take-back programs, and deposit legislation. The State Board has an opportunity to provide incentives for creating a collaborative environment that bring local governments together with regulators, private industry, and other stakeholders to work on		Please see Response to Comment 4.5.

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	product stewardship initiatives aimed at specific items such as cigarette butts and other forms of single-use packaging.		
31.5	The City recommends that the State Board add language that more clearly specifies the expectation that Caltrans and MS4 Phase II permittees will coordinate and fully capitalize on the opportunities presented by combining resources.		The State Water Board agrees that Caltrans and MS4 Phase I and Phase II permittees will have greater success of controlling trash in overlapping jurisdictions if they coordinate and full capitalize on the opportunities presented by combining resources in overlapping jurisdictions. (Ocean Plan Amendment III.L.2.b; Part I ISWEBE IV.A.3.b.)
32.1	There is no calculation or reporting standards listed in the proposed Trash Amendments. It is expected that reporting will be addressed in later versions.		The Trash Amendments provide the framework for minimum reporting and monitoring requirements that must be included in the implementing permit. Please see Responses to Comments 4.6 and 6.2.
32.2	Economic impacts should be considered, whether it be for full capture devices or additional programs. MS4 Permittees are struggling to maintain the current requirements. Requiring additional infrastructure or programs will further strain fiscal resources. Proposition 218 remains a major issue to consider when asking our citizens to fund these additional requirements.		Please see Response to Comment 10.4.
32.3	While ten to 15 years may seem like a long time, it is relatively short when taking into account the research, planning, bidding, funding, construction, and compliance with other regulations MS4 Permittees must consider. At a minimum, a 20		For statewide consistency and recognizing the need for site-specific flexibility, a ten year compliance schedule was developed for both Track 1 and Track 2. As permits are updated every five years, a ten year compliance schedule allows for adaptive management of the implementation plan to control trash. A ten year compliance schedule provides a sufficient amount of time for trash control with either Track 1 or

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	year timeframe should be considered.		Track 2 to be successful. A reduced compliance time for Track 2 may result in less effective programs at control trash. For these reasons, both Track 1 and Track 2 should have a ten year compliance schedule. (See Ocean Plan Amendment III.L.4 and Part I ISWEBE IV.A.5.) Additionally please see Response to Comment 7.7 and Staff Report section 2.5.
32.4	Instead of piecemeal treatment devices and programs for trash are the purpose of the Trash Amendments, projects that offer multiple benefits should be given priority. It is understood that trash is a visible nuisance, but projects that treat for multiple pollutants or act to replenish local groundwater should be considered more beneficial and a better use of resources. An efficient use of resources should be viewed as far more favorable by the regulators as well as our local and state citizens.		The State Water Board agrees with this comment. The Storm Water Program at the Water Boards encourages the management of storm water as a resource. The main objective of treating storm water as a resource is to protect and restore those watershed processes that are critical to watershed health. Multi-benefit projects that infiltrate and treat storm water runoff are encouraged within MS4 Phase I and Phase II permits. Within Track 2, multi-benefit projects are a supported method of compliance to control trash. In addition to trash control, multi-benefit projects treat other storm water runoff priority pollutants. As a whole, multi-benefit projects prevent impacts from flooding, mitigate storm water pollution (such as trash), create open space, enhance fish and wildlife habitat and improve water efficiency. (See Final Staff Report Section 5.4.)
32.5	Storm drain drainage areas are not specific to land-use areas. The regulated drainage areas should be defined as having more than 75% of the specified land-use in order to address the area.		Please see Response to Comment 11.4.

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32.6	It should be acknowledged that land-use areas are dispersed throughout communities and are not necessarily in defined quadrants. Municipal activities such as street sweeping routes are based on clustered areas and are not based on land-use zones. Measurements or reporting for specified land-use would be impossible or exceptionally difficult. Land-use areas should be amalgamated or defined as 75% or more.		Please see Response to Comment 11.4.
32.7	There is a perception that new regulations will affect properties that are privately owned and are already developed. With a specified timeframe to install treatment devices, requiring private properties to install treatment devices creates an eminent domain issue that creates a wide-variety of issues. It should be specified that treatment devices shall be required only on land that is within the public right-of-way or publically owned.		Please see Responses to Comments 11.4 and 25.1.
33.1	Santa Maria supports the State Board staffs decision to use a narrative water quality objective for trash. The narrative objective provides a clear standard that all can understand and that the City can use to prioritize its programs. The City agrees with State Board staff's recommendation not to use a numeric objective of "zero trash".		The State Water Board appreciates the support on a narrative water quality objective for trash.

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	While the City can and will continue to control and address many sources of trash, there are many sources that even the best program cannot control in all cases. A numeric objective is therefore not feasible in this situation, and Santa Maria urges the State Board to support staff's recommendation on this important question.		
33.2	Santa Maria generally supports the focus in the proposed Trash Amendments on priority land uses as a means of identifying key areas within the City where limited resources should be allocated to achieve maximum control benefit. The City believes that this approach should be refined and improved, but State Board staff's recommendation to focus trash controls on areas with high trash generation rates is the correct one and Santa Maria hopes the State Board supports it.		The State Water Board appreciates the support for prioritization of land uses for trash control.
33.3	As proposed, the Trash Amendments provide that the City could achieve compliance with the prohibition on the discharge of trash by implementing either Track 1 or Track 2. The clarity of this path to compliance with the discharge prohibition is appreciated and welcomed by the City. To provide similar clarity with regard to achieving compliance with the receiving water limitations language		Please see Response to Comments 4.1 and 10.9.

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	contained in the City's MS4 permit, which has been interpreted to require strict compliance with water quality objectives, the State Board should include a provision in the Trash Amendments that links compliance with the discharge prohibition to compliance with the narrative water quality objective. This level of regulatory certainty is important to support the City's ability to make the large capital investment that will be required to address trash under either Track 1 or Track 2. If implementation of either Track 1 or Track 2 results in compliance with the discharge prohibition, such compliance should also result in achievement of the water quality objective and compliance with the receiving water limitations language in the City's MS4 permit.		
33.4	Many municipalities in California are currently moving toward a watershed-based approach to achieving water quality requirements. There appears to be a scientific and regulatory consensus that a watershed-based approach that involves multiple stakeholders represents a better way to address water quality problems, as opposed to a narrow jurisdictional focus. Santa Maria is currently developing an Integrated Plan that is designed to look at all of the City's water quality obligations in a watershed-		Please see Response to Comment 11.9.

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	based context that will put the City in the best position to achieve all of its obligations through a consolidated approach. The concern with the Trash Amendments is that it prioritizes trash as a water quality concern above other sources of water quality impairment that may be more pressing on a watershed basis. Therefore, the City requests that the State Board consider adding language to the Trash Amendments that would allow for prioritizing issues for each watershed, through efforts such as the City's Integrated Plan or other similar approaches.		
33.5	Santa Maria supports the use of prioritized land uses to focus efforts in areas with the greatest contribution of trash. However, the proposed Trash Amendments should allow the City to determine at the local level which land uses contribute the greatest amount of trash in Santa Maria. While the Trash Amendments allow the City to identify additional land use types that should be prioritized, the document does not appear to allow the City to remove prioritized land use types. The Trash Amendments should establish a process to both add and delete prioritized land use types so that localized efforts can focus on the areas with the greatest contribution of trash.		Please see Responses to Comments 10.7 and 12.2.

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33.6	The Trash Amendment as proposed would establish a ten- to 15-year implementation timeline (1 0 years after the next permit adoption or 15 years, whichever occurs first). Implementation of either Track 1 or Track 2 will take time and a large capital investment. As with any large-scale public works project, it will take time for the City to plan, design, fund, and install the devices needed to implement the program. In addition, it will take time for the City to educate its community and change community norms regarding trash. A time horizon of 15-20 years would better reflect the implementation challenges the City will face.		Please see Response to Comments 32.3.
33.7	Because the Trash Amendment seeks to establish a statewide policy and approach to addressing trash, the Trash Amendment should specify that the policy and implementation approach replaces the need to develop local TMDLs for trash. Since the Trash Amendments are designed to establish compliance with the water quality objective for trash over the compliance period, it would appear to negate the need for local TMDLs or additional listing of impairment of trash.		Please see Response to Comment 10.10.
34.1	While the City generally supports the State Boards efforts with the proposed Amendments, the policy is		The Trash Amendments aim to establish a narrative water quality objective for trash and a prohibition of discharge, and then a set of implementation provisions to achieve compliance

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	focused on achieving 100% trash capture from the storm drain system (Page 11, Table 1) while the overall objective is focused on prohibiting trash accumulation in the waterway, "No trash shall accumulate in state waters (or in areas adjacent to state water) in amounts that would either adversely affect beneficial uses, or cause nuisance" (Page 11, 2.2). These two items appear to be inconsistent.		with the water quality objective and prohibition of discharge. These implementation provisions focus on controlling the discharge of trash from the areas and locations that generate highest amounts of trash. The Trash Amendments do not aim for a 100 % reduction of trash to state waters but reduction from the high trash generating areas that adversely affect beneficial uses or cause harm. Additionally, please see Response to Comment 4.1.
34.2	It is the City's experience that a significant percentage of the trash in our waterways is from homeless encampments, and is not in fact conveyed through the storm drain system. As written, the City could go through the resource intensive process of achieving full capture from the storm drain system and still not achieve the water quality objective. It is requested that the language of the objective be revised to specify that if no accumulation occurs as a result of discharge of trash from the storm drain system. Alternatively it is requested that the language in the proposed compliance tracks be revised to include the requirement to address trash that reaches the waterways through routes other than the storm drain system.		Although the implementation provisions for compliance with the prohibition of discharge focus on trash discharge via storm water, it is well recognized that trash is transported in surface waters via both point and non-point sources. The dual alternative “compliance track” approach provides flexibility to determine the most effective means of controlling trash while taking into consideration particular site conditions, types of trash, and the available resources for maintenance and operation. Specifically, Track 2 makes available a wide range of trash control strategies, from treatment to institutional controls, to target the high trash generating areas. Additionally, the permitting authority has the discretion to determine other land use or locations generate substantial amounts of trash and require trash controls. The permitting authority may also issue WDRs or waivers of WDRs to the land owner for other trash generating areas or facilities to address trash. Please see Responses to Comments 6.5 and 6.6.

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34.3	In order to achieve full trash capture, the City would need at to invest an estimated minimum of $1.2 million into storm drain improvements plus an additional l $1.2 million per year for maintenance. These dollar figures are substantial as the City has very limited funds and is limited in its ability to collect fees to fund this program by Proposition 218. It is requested that the State Board support the ability of Permittees to secure funding sources for storm water quality programs, such as this trash policy.		Please see Response to Comment 10.4.
34.4	In order to adequately address the systemic trash issue, high trash generating industries and sources need to be targeted in addition to implementing trash capture. It is requested that the State Board partner with State and Federal programs, such as CalRecycle (formally the Integrated Waste Management Board), to support policies, laws, and practices to reduce packaging and trash generation at the source.		State Water Board and CalRecycle staff worked in the development of the Trash Amendments and agree that there is a synergy between reducing trash at the source and controlling trash as a pollutant.
35.1	The City supports the use of the narrative water quality objective as proposed. This narrative objective provides a clear, concise definition from with the City can prioritize management decisions. As a Phase I MS4 permittee, the City also appreciates the two track for		The State Water Board appreciates the support for the narrative water quality objective for trash and two tracks. Please see Response to Comments 4.1 and 10.9.

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	compliance with the Proposed Trash Amendments. As proposed, the Trash Amendments would consider the City to be full compliance with the prohibition of trash discharge, as long as the City implements either Track 1 or Track 2. The proposed Trash Amendments, however, do not clearly indicate that meeting the discharge probation requirements would also mean the City is in compliance with receiving water limitations. This lack of clarity could result in the City being subject to further regulation for receiving water, even if it is in compliance with the Proposed Trash Amendments.		
35.2	The Proposed Trash Amendments also identify, but do not address certain significant source categories and transport pathways for trash. These include wind, illegal littering, illegal encampments in riverbeds, and water recreation/cruise ships. It is unclear who is responsible for attaining the trash water quality objective for trash from sources and pathways unaddressed by the Proposed Trash Amendments.		The Trash Amendments recognize that there are many pathways of trash to reach surface waters, and they aim to protect from amounts that adversely affect beneficial uses. The Trash Amendments focus on controlling trash transported via storm water to surface waters in the areas and location that generate the highest amounts of trash. While the focus of the Trash Amendments is not on the other sources of trash, the permitting authority has the ability to determine additional areas and locations to require trash controls through NPDES permits, WDRs, waivers of WDRs, and enforcement. (See Final Staff Report Appendix A.) Additionally please see Response to Comment 6.5.
35.3	The proposed Trash Amendments do not clearly indicate that meeting the discharge prohibition requirements would also mean the City is in compliance with receiving water limitations. This lack of clarity could result in the City being subject		Please see Response to Comments 4.1 and 10.9.

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	to further regulation for the receiving water, even if it is in compliance with the Proposed Trash Amendments. The City requests the addition of language to the Proposed Trash Amendments indicating the MS4 permittees will be in compliance with receiving water limitations so long as they are fully implementing Track 1 or Track 2.		
35.4	The City requests that language be included in the Proposed Trash Amendments stating that if the requirements in the Proposed Trash Amendments are being met, then no Trash TMDLs will be developed for those water bodies where the requirements are being fully implemented. Further, waters listed as impaired for trash should be removed from the 303d list because the Proposed Trash Amendments address the impairment.		Please see Response to Comment 10.10.
35.5	The City requests that language be included in the Proposed Trash Amendments to accommodate local and regional processes for prioritizing pollutant issues for each watershed, such as the WQIP. The City also requests language is included in the Proposed Trash Amendments that would provide a process to exclude from, modify, or delay implementation of the Proposed Trash Amendment requirements for those watersheds		Please see Response to Comment 11.9.

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	and subwatersheds where trash is not identified as a high priority water quality concern. The City also requests language be included in the Proposed Trash Amendments that would allow agencies, such as MS4 permittees, to complete a watershed based trash assessment, confirm the applicability of the Proposed Trash Amendments to each waterway, and allow time for industry to implement effective solutions to identified sources of trash.		
35.6	The Proposed Trash Amendments are being proposed without adequate consideration of the funding sources for implementing the amendments' requirements. The City has no clear source of funding to meet these requirements and believes these obligations constitute an unfunded mandated. Prior to approval of the Trash Amendment, the City requests the Board conduct a full assessment of the costs and benefits of the Proposed Trash Amendment. The City requests that language be added to the Proposed Trash Amendments allowing delayed implementation until a funding source is identified for the implementation and ongoing maintenance of the structural controls required to capture trash.		Please see Responses to Comments 10.4 and 29.4. Additionally, under state law, the State Water Board does not perform a cost benefit assessment.

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35.7	The City requests that language be added to the Proposed Trash Amendments that allows the City to adequately evaluate, designate, and prioritize those areas that would realize the greatest benefit. Including a process by which the City may lower the priority of areas that the Proposed Trash Amendments currently designates as "high priority" is essential to effective implementation.	A regulated MS4 may determine that areas within priority land uses do not generate trash that accumulates in state waters (or in areas adjacent to state waters) in amounts that would either adversely affect beneficial uses. or cause nuisance. In the event that the regulated MS4 identifies such areas and is able to provide data supporting the finding. the permitting authority may waive the requirement for the MS4 to comply with Chapter III.L.2.a/IV.B.3.a with respect to the identified locations. The regulated MS4 shall submit documentation of the continued condition with annual reports as required under Section III.L.6/IV.B.7.	Please see Responses to Comments 10.1 and 10.7.
35.8	The City requests that the language in the Proposed Trash Amendments, establishing a ten- to 15-year implementation timeline, be revised to establish a 15- to 20-year timeline (i.e., 15 years after the next permit adoption or 20 years, whichever		Please see Response to Comment 7.7.

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	occurs first).		
36.1	Our city is participating in two Watershed Management Programs (WMPs) pursuant to the requirements of Los Angeles Regional Board Order No. R4-2012-0175. One of these is for the Lower Los Angeles River Watershed, and the other is for the Los Cerritos Channel Watershed. The Lower Los Angeles River WMP lists trash as a highest priority pollutant since there is a trash TMDL for the Los Angeles River. The Los Cerritos Channel WMP lists trash as a high priority pollutant because there is a 303(d) listing for trash for the Los Cerritos Channel, but there is not yet a TMDL for trash for this water body. The proposed Trash Amendments would functionally make trash a highest priority pollutant for the Los Cerritos Channel Watershed. The Trash Amendments would also make trash a priority pollutant for the defined "priority land uses" statewide, even though the receiving waters for land uses might not have been determined to be impaired for trash.		The Water Boards are charged with protecting all beneficial uses from pollution and nuisance that may occur as a result of waste discharges in the region. The State of California recognizes that trash is a high priority pollutant that impairs the beneficial uses of aquatic life and public health, causes an aesthetic nuisance, and reduces the economic value of California's recreation areas. The presence of trash in surface waters, especially coastal and marine waters, is a prevalent issue in California. As the City of Signal Hill is participating in two Watershed Management Programs where trash is listed as a high priority pollutant, the State Water Board does not see a conflict with existing permit prioritizations and the Trash Amendments. Additionally, please see Response to Comment 11.9.
36.2	The fact that the three Regional Water Boards with 71 of the 72 trash listings already have programs in place to address trash indicates that the Trash Amendments, as drafted, are not necessary. There is a need to ensure that where trash TMDLs or		Regardless of current 303(d) listings for trash, trash is a problem statewide. The Trash Amendments aim to provide statewide consistency to reduce trash discharge from the areas that generate the highest amounts of trash. The Trash Amendments would establish a prohibition of discharge on preproduction plastics as well as establish a definition for trash. (See Ocean Plan Amendments III.I.6; Part I ISWEBE IV.A.2.)

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	other measures to address trash impairments arc developed permittees are allowed to focus on truly high trash generation areas and catch basins. The application of a prohibition of discharge of preproduction plastic by manufacturers of preproduction plastics, transporters of preproduction plastics and manufacturers that use preproduction plastics in the manufacture of other products is also needed. In addition, there should be statewide definitions of trash and debris.		
36.3	The Trash Amendments, as currently drafted, will likely result in multiple unintended consequences. First the de facto definition of trash as a high priority pollutant will likely result in the diversion of funds away from addressing local water quality issues such as listed impairments and other local pollutants of concern since, in the absence of major stormwater quality funding programs, most local governments have limited money available to address water quality. Secondly, making trash a high priority pollutant in the absence of a 303(d) listing for trash may cause financial hardships. Especially for Phase II MS4s, since neither of the specified compliance tracks is inexpensive.		Please see Responses to Comment 10.4.

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36.4	This assessment, prepared by the Coalition tor Environmental Protection, Restoration and Development, is not listed in the References section of the Draft Staff Report, and it should be reviewed before any action is taken on the proposed Trash Amendments. For the convenience of the Board. It is attached to this comment letter.		Thank you for your comment and attached report.
36.5	The focus of the proposed Trash Amendments on five priority land uses is a good start to focusing on high trash generation areas. By focusing on high density residential (with at least 10 developed residential units per acre). Industrial, commercial mixed urban, and public transportation station land uses. the areas addressed by either Track 1 or Track 2 procedures could be reduced by 50% or more of a municipality's land area, depending on the density and location of transportation stations. However, as noted above, a small percentage of catch basins in commercial and industrial areas have been demonstrated in a research study to contribute a major portion of the trash load. Of the 258 catch basins analyzed in the 2006 report. I 05 were in commercial and industrial areas, and all but one of the 34 catch basins responsible for generating 50% of the trash loadings were		The State Water Board is appreciative of the report and support for periodization of commercial and industrial areas for trash controls with priority land uses in the Trash Amendments. (Ocean Plan Amendment and Part I ISWEBE definition of “priority land uses.”)

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	located in commercial and industrial land use drainages.		
36.6	The draft amendments do allow an MS4 permittee with regulatory authority over priority land uses to request a Water Board allow the permittee to comply with Track 1 or Track 2 requirements with alternate land uses that generate loads of trash equivalent to or greater than one of the priority land uses. However, the draft amendments do not specifically allow targeting of high trash generation areas with priority land uses through the use of such tools as the "Keep America Beautiful Visible Litter Survey:· The draft Trash Amendment should be revised to allow - even encourage - targeting of truly high trash generation areas within the broad priority land uses.		Please see Responses to Comments 10.7 and 12.2.
36.7	The City of Signal Hill agrees with the California Stormwater Quality Association (CASQA) that regulatory source controls should be developed and implemented. The staff report notes on page 7 that "California is the leader in implementing local ordinances with goals of reducing trash specifically plastics. However, what is needed is a statewide program to reduce trash to complement the "consistent statewide approach to controlling trash discharges into waters of the		Please see Response to Comment 4.5.

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	state'· being developed by the State Water Board. The City agrees with the option of granting time extensions for adoption of regulatory source control ordinances by local governments. Such an incentive will encourage more local and perhaps regional, source control programs, but State action is also needed. Product and packaging stewardship should be encouraged and/or required by the State. SB 346, the brake pad bill, became law in 2010 and is on track to greatly reduce copper stormwater pollution by 2025. A similar effort is needed to reduce trash. Producers of products and packaging that ends up in the water could be required to design and implement recycling/collection programs and/or redesign products to be biodegradable in water. The State Water Board should work with other state agencies. The legislature, the California Product Stewardship Council, the Governor and product and packaging manufacturers to reduce trash at the source. In addition, the State Water Board should consider the market-related approaches to source control assessed in the 2006 report entitled "Market-Based Strategies For Reducing Trash Loadings to Los Angeles Area Watersheds, An Initial Assessment" discussed above.		

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36.8	Actually, the final compliance date for the Los Angeles River Trash TMDL is September 30, 2016. For September 30, 2014, the compliance point is 10% of the baseline load calculated as a rolling 3-year annual average. For July 30, 2015 the compliance point is 3.3% of the baseline load calculated as a rolling 3-year, average. The Regional Water Board clarified the final compliance date for the Los Angeles River Trash TMDL in Attachment 0 of Order No. R4-2012-0175. Section A.2 of the Attachment states, "Permittees shall comply with the final water quality based effluent limitation of zero trash discharged to the Los Angeles River no later than September 30. 20 I 6 and every year thereafter. Several cities, especially those installing certified full capture devices, have already achieved 90% compliance. However, achieving full compliance will be very expensive due to the need to retrofit or replace catch basins in which the certified full capture devices could not be installed.		Comment noted. The proposed Final Staff Report has been modified to reflect the final compliance date for the Los Angeles River Watershed Trash TMDL of September 30, 2016 (see Final Staff Report pp 5 and 75).
36.9	The City of Signal Hill requests that the phrase. 'except for the Los Angeles River Watershed and Ballona Creek Trash TMDLs, because these two TMDLs are approaching final compliance		The State Water Board considered this comment and modified the final compliance dates. (See Final Staff Report pp. 5 and 75.) However, the State Water Board does not recommend modifications final compliance point of the Los Angeles River Watershed and Ballona Creek Trash TMDLs.

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	deadlines of July 1, 2014 and 2014. respectively" be deleted and replaced with: "The final compliance point for the Los Angeles River and Ballona Creek Trash TMDLs will be delayed until six months after the Los Angeles Regional Water Board completes its reconsideration of the scope of its trash TMDLs. Further the Los Angeles Regional Water Board should be directed to consider each Permittee that is determined to have achieved 90% compliance with the current Los Angeles River and Ballona Creek Trash TMDLs to be in full compliance with the TMDLs. 90% compliance with a TMDL covering an entire jurisdiction is more than equivalent to compliance with the Trash Amendments. Those jurisdictions determined to be a minimum of 80% in compliance shall be allowed to achieve full compliance through focusing trash control efforts on high trash generation areas.		
36.10	The greatest assistance that the State Board could provide to local governments is in allowing the use of a certified trash surveys to focus the implementation of this new policy to catch basins that generate significant amounts of trash, irrespective of the land use category.		Comment noted. The proposed Trash Amendments allow for this flexibility to determine areas that generate comparative amounts of trash through the “alternative equivalent land use” provision within priority land uses.

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37.1	Given the site specific conditions within the City, and documented lack of trash in the drain inlets as documented by Lake Tahoe TMDL studies), Track 1 is not a viable option for the City since the MS4 is not the primary source of trash conveyed to local waterways and Lake Tahoe.		The State Water Board appreciates the feedback on Track 1. The Trash Amendments recognize Track 1 might not fit all municipalities, and thus has Track 2.
37.2	The City is concerned that the existing text in Track 2 requires extensive outfall monitoring and trash counting to determine load reductions, although site specific TMDL studies, data and volunteer collection efforts find that the primary source of trash is littering at Lake Tahoe beaches, not conveyance and delivery via the storm drain system. The City requests that Track 2 language include more flexible methods for monitoring and reporting, based on site specific information, not extrapolated methods from studies conducted in urban, heavily populated areas of the state.		Please see Response to Comment 4.6.
37.3	The City is concerned that the studies used to develop this statewide mandate focused on the sources of trash and methods for monitoring and reporting that were developed in large urban centers, which may not be applicable to many of the less developed, rural portions of the state.		Trash is a prevalent and controllable priority pollutant across California's surface waters, which is described in Sections 1 and 3, Appendix A, and Appendix C of the proposed Final Staff Report. While currently only 73 water bodies are 303(d) listed as impaired for trash, this number is increasing and TMDL implementation can be costly and intensive. A central element

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			of the proposed Trash Amendments is a land-use based compliance approach to focus trash controls to the areas with high trash generation rates, in contrast to all land uses. Within this land-use based approach, a dual alternative "compliance track" approach is proposed for permitted storm water dischargers to implement a prohibition of discharge for trash. While the dual alternative compliance track approach might not cover the entire jurisdiction of the permittee, it will target and reduce trash from the areas of the high rates of trash generation and protect the beneficial uses of California's surface waters.
37.4	The City is concerned that the proposed Statewide Amendments are based primarily on studies conducted in highly urbanized population centers, and will force smaller, less urbanized communities to include costly and time consuming monitoring efforts based on studies and methodologies developed for major urban areas within California. The City requests the Track 2 language include changes to allow flexibility to avoid counting and reporting trash quantities at outfalls, and focus efforts on more effective clean ups that target the primary source of trash at Lake Tahoe: littering at the beach.		Please see Responses to Comments 10.7 and 12.2.
38.1	The City and County recommend that the State Water Board partner with permittees to explore the creation of a non-competitive program to fund trash control measures. One such program that could serve as an example is the		Please see Response to Comment 4.7.

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	Used Oil Payment Program (OPP). The State Water Board should work with the California Product Stewardship Council to assess the most prevalent forms of litter and pursue legislative remedies for litter including taxes on products (such as cigarette butts) to fund local trash control programs.		
38.2	The City and County recommend that the Proposed Trash Amendments recognize the value of current management programs and not divert resources away from ongoing, successful efforts to control trash in our waterways or place additional demand on already-limited resources. We urge the State Water Board to allow MS4 programs with existing POCs-focused water quality implementation plans to address trash in the prioritization context of those existing plans.		Please see Response to Comment 11.9.
38.3	The City and County recommend that the State Water Board assess how already-established CalRecycle funding could be enhanced and/or redirected to local agencies to meet the trash reduction control requirements of the Proposed Trash Amendments.		Pursuant to Public Resources Code section 14581(a)(4)(A) of the California Beverage Container Recycling and Litter Reduction Act, the Department of Resources Recycling and Recovery (CalRecycle) is distributing $10,500,000 to eligible cities and counties specifically for beverage container recycling and litter cleanup activities though the Beverage Container Recycling Grant and Payment Program. This program has funded full capture systems and other litter abatement programs. For more information please see: http://www.calrecycle.ca.gov/BevContainer/Grants/CityCounty/default.htm
38.4.	A statewide ballot initiative should be proposed to help fund trash control		Comment noted. A statewide ballot initiative is outside of the scope of these proposed Trash Amendments.

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	in waterways with statewide impact.		
38.5	While the City and County continue to work to identify successful management strategies for preventing trash from reaching receiving waters, it is critical that the Proposed Trash Amendments limit the liability of MS4 Permit holders and support a process that allows the City and County to apply their resources towards controlling trash within their areas of responsibility. Language in III.L.3 (Ocean Plan) and IV.B.4 (Inland Surface Waters, Enclosed Bays, and Estuaries Plan) appears to provide direction/authority to the permitting authority to address other sources of trash. Examples should be added to include other NPDES permit holders and agricultural operations. The language could be strengthened by citing the authority with which this oversight is provided in the California Water Code (i.e., CWC §13263, 13267). The City and County recommend the State Water Board also include provisions to require implementation of the Proposed Trash Amendments, not only through inclusion in MS4 Permit, but through other NPDES Permits, WDRs, and Waiver Provisions.		Please see Response to Comment 10.6.

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38.6	The Proposed Trash Amendments state that for Permittees selecting Track 1 , "one potential compliance schedule is 10% completion of controls per year" (p. C-30). This suggested compliance schedule is likely to be infeasible for many Permittees, given the time it will take to accurately identify high priority areas, request and evaluate bids for installation of control devices, establish contracts, and order and install the control devices. Recommendation: The City and County recommend that Permittees be allowed to determine feasible milestones that are commensurate with the efforts that will need to take place each year.		Please see Response to Comment 6.8.
38.7	The Proposed Trash Amendments require Permittees selecting Track 2 to develop and submit an implementation plan that identifies the combination of controls that will achieve the same performance as Track 1. The Proposed Trash Amendments provide no guidance on either what will be considered an acceptable implementation plan or how equivalency should be demonstrated. We strongly recommend that clear guidance for the implementation plans and standards of equivalency be established prior to or with the adoption of the Trash Amendments.		Please see Response to Comment 16.3.

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	Clearly establishing these expectations is essential to informing the decisions regarding the choice of track. At present, it is unknown what efforts will be considered "equivalent" to full-trash capture. Permittees incur financial and compliance risks in choosing a Track which has no guidelines for determining compliance, placing them in a situation where the guidelines would be subject to on-going interpretation. Recommendation: The City and County recommend that standards of equivalency be established prior to or with the adoption of the Proposed Trash Amendments.		
38.8	While stormwater permittees may want to conduct receiving water monitoring to demonstrate performance, the City and County feel it should not be mandated. Other sources contribute trash to receiving waters, and imposing this requirement on stormwater permittees will not provide an indication of the effectiveness of stormwater trash control programs.		Please see Response to Comment 4.6.
38.9	The City and County recommend that a more extensive list of certified devices be prepared prior to the adoption of the Proposed Trash Amendments. We also recommend refining the full capture device certification process to streamline		Please see Response to Comment 10.5.

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	the certification process as much as possible. Additionally, the timeframe for obtaining certification is a concern. The Executive Officer approval process should have a rapid turnaround time to allow permittees to move forward with planning and installation within the time schedule granted.		
39.1	Specifically, the City is very supportive and greatly values of the multi-track implementation approach to meeting the water quality objectives set forth in the Proposed Amendments. Track 2 provides much needed flexibility for local jurisdictions to prioritize implementation based on available resources and local knowledge of the presence and source of trash in our community.		The State Water Board appreciates the support for Track 2.
39.2	The City is concerned that the Implementation Provisions, including the Time Schedule, as currently delineated in the Trash Amendments will divert resources and possibly compromise years of research, planning, and the implementation efforts that have been invested into our Short and Long Term Trash Reduction Plans. We respectfully request that the State Board consider establishing a mechanism that allows MRP permittees to comply with Track 2 implementation via continued implementation of the		Please see Response to Comment 4.2.

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	already developed Long Term Trash Reduction Plans, submitted to the San Francisco Bay Regional Water Quality Control Board as required by the MRP.		
39.3	We request that the State Board allow for the full trash capture devices previously "approved" by the San Francisco Bay Water Quality Control Board for installation under the Project to satisfy the requirements of the Trash Amendments consistent with process outlined for the full trash capture devices previously certified by the Los Angeles Regional Water Board as defined in the Trash Amendments.		Please see Response to Comment 4.3.
39.4	The City strongly supports the inclusion of these types of regulatory source controls as an institutional control available for implementation to comply with the Trash Amendments.		Please see Response to Comment 4.5.
40.1	We appreciate State Board's efforts to incorporate stakeholders' comments provided during the outreach meetings, particularly the inclusion of Track 2 type control measures in the draft Policy.		The State Water Board appreciates the support and attendance of the City of Walnut Creek at the focused stakeholder meeting in San Jose.
40.2	While the draft Policy is more clearly written, the regulatory provisions fail to acknowledge progress made by municipalities in the San Francisco Bay Area. Under the Municipal		Please see Response to Comment 4.2.

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	NPDES Regional Permit (MRP) for stormwater discharges, Bay Area municipalities have assessed the extent and magnitude of the trash issues and implemented enhanced control measures to reduce their impacts on our waterways and the San Francisco Bay.		
40.3	State Board should revise the proposed Policy to include "Track 3" for municipalities covered under the MRP to continue using any combination of full capture systems, other treatment controls, institutional controls and/or multi-benefit projects in a phased and prioritize approach that focuses on high trash generation areas as defined in the community-specific trash management plans.		Please see Response to Comment 4.2.
40.4	The proposed Policy should be revised to account for the benefit of true source control actions that we initiate or participate in addressing litter-prone items. Therefore, time extensions should be granted to municipalities for participating with other local agencies to advocate for legislation and industry cooperation in the development of product redesign, packaging redesign, take-back programs and deposit legislation.		Please see Response to Comment 4.5.
40.5	State Board should revise the definition of “high trash generating areas" to allow municipalities the option of identifying geographical		Please see Responses to Comments 10.7 and 12.2.

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	areas within their jurisdictions that generate problematic levels of trash, regardless of land use. As an example, a regional transit hub and freeway on-ramps, both of which are outside the City's authority, generate a problematic level of trash in comparison to our robust downtown core areas.		
40.6	Because trash is transported to receiving waters from pathways other than MS4s (such as illegal dumping into receiving waters, homeless encampments and wind), trash from these pathways may compound municipalities' abilities to observe trash reductions in creeks and shorelines. For this reason, data collected in receiving waters should not be considered a primary indicator of compliance.		Please see Response to Comments 4.6 and 34.2.
41.1	While the Draft Trash Control Amendment Staff Report purports to provide flexibility, closer examination of the proposed requirements and additional narrative adds, if adopted, additional reporting of monitoring requirements for construction site dischargers, and most importantly, adds a significant burden of proof element to compliance that is unnecessary given CICWQ research into existing construction site trash control practices. In other words, it appears the State Water Board is proposing regulation that is		It is not the intention for the Trash Amendments to add a significant burden to construction site dischargers. The current Construction General Permit already has prohibition on trash (debris) which may prove adequate to implement the Trash Amendments. Additionally, please see Response to Comments 5.1 and 5.2.

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	unnecessary and unhelpful given current regulation and industry practice.		
41.2	The problem of trash in receiving waters is localized and is being effectively addressed in that manner through the TMDL process and through implementation of other existing NPDES permits. We therefore question the need for any additional regulation at this time, in part because of the additional resources and time that will be required to comply with the Draft Trash Control Amendment when a problem with trash may never exist.		Trash is a problem statewide and greater action is necessary than the existing TMDLs and NPDES permits. Please see Response to Comment 44.4.
41.3	The determination of Track 1 and Track 2 equivalency is under development at this time according to the Draft Trash Control Amendment staff report and State Water Board staff (who provided clarification of intent at a workshop on 7/16/2014), and will be left to the discretion of the Regional Boards to develop at some future date. This kind of uncertainty in process is concerning, as is the fact the current prohibition of the discharge of trash appears to be working from the perspective of the construction industry, and additional regulation and so-called flexibility is unhelpful and may actually increase the cost to comply because of the difficulty of proving Track 2 equivalence with		Please see Response to Comment 16.3.

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	Track 1.		
41.4	We have concerns about the monitoring and reporting program (described on page 17 of the Staff Report, Section 2.7), which strongly implies a level of effort required by builders and contractors, significantly above and beyond what is currently required to demonstrate compliance (handled in the SWPPP, implemented vis-à-vis daily physical collection and containment of trash using source control principles). And, the Draft Trash Control Amendment makes conflicting statements about the necessity of specific monitoring requirements for construction dischargers, and clarification of intent by the State Water Board is requested. Specifically, see conflicting information discussed on page 17, Section 2.7 and pages 81-82 of the Staff Report, 4.10 No. 3.		The Industrial General Permit (IGP) and Construction General Permit (CGP) are statewide permits that regulate discharges of storm water and authorized non-storm water discharges associated with very specific industrial activities. These permits apply to thousands of projects with diverse features and characteristics between facilities and sites. As such, prescribing appropriate and consistent trash monitoring and reporting requirements for all permittees poses significant challenges. While the Trash Amendments do not contain trash monitoring requirements for the IGP and CGP, permittees would, however, be required to report the measures used to either (1) achieve the outright prohibition of trash or (2) achieve equivalent trash control through alternative methods. (Ocean Plan Amendment III.L.2.c and Part I ISWEBE IV.A.3.c.) Currently, the CGP prohibits the discharge for any debris, which includes plastic and other trash materials. The Trash Amendments establish an outright prohibition of the discharge of trash. The existing provisions in the CGP would be similar to the outright prohibition for trash. State Water Board does not intend to create additional regulations or monitoring for trash for CGP permittees. Please see Responses to Comment 5.1 and 5.2.

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41.5	The State Water Board did not estimate the financial impact of the Draft Trash Control Amendment on construction dischargers, and concluded the Draft Trash Control Amendment would not have any impact on the incremental cost of compliance. This is a faulty assumption considering that if the Draft Trash Control Amendment was adopted and construction dischargers chose to comply using Track 2, there will most certainly be a cost for demonstrating equivalency with Track 1 and this cost would be borne by the individual discharger/permit holder as we currently understand how the Draft Trash Control Amendment Track 2 process would be implemented.		Please see Response to Comment 5.2.
42.1	The narrative water quality objective stated here should be replaced with the numeric water quality objective of zero trash to reflect the fact that receiving waters have no assimilative capacity for trash. There are no legal findings presented to support the selection of any other standard. The zero trash objective contained in the Los Angeles area Trash TMDLs has been tested and upheld by the Fourth Appellate District Court. Although there are technical challenges to limiting all trash entering jurisdictional waters,		Please see Response to Comment 6.1.

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	properly designed and maintained full capture systems are established means of eliminating the discharge of trash from municipal separate storm sewer systems.		
42.2	The level of control provided in these trash amendments is not sufficient to meet the narrative water quality objective proposed for the Ocean Plan since trash control is not required for non-priority land uses. These areas do generate trash, albeit generally at lower levels than priority land uses. These amendments essentially shield dischargers from having to control trash from these land uses by defining compliance with the water quality objective as treatment of priority land uses only. This is unacceptable. Preferably, the water quality objective for trash would be satisfied only for areas adequately treated by Track 1 and Track 2 controls. Other "non-priority" areas would not escape coverage but treatment there would be de-prioritized in favor of a focus on high priority areas.		See Final Staff Report, sections 1.5 and 2. A central element of the Trash Amendments is a land-use based compliance approach to focus trash controls to the areas with high trash generation rates. (Ocean Plan Amendment at III.L.2; Part I ISWEBE at IV.A.3.) However, the Trash Amendments do not, as the commenter suggests, limit control to priority land uses only. See Ocean Plan Amendment at III.L.1.a and Part I ISWEBE at IV.A.1.a, which describes the scope of the dischargers subject to the prohibition of discharge of trash. Additionally, the Trash Amendments allow the permitting authority to determine other locations or land uses within an MS4's jurisdiction, on a case by case basis, that have significant trash generation rates (e.g. sufficient to cause or contribute to an exceedance of water quality objectives or creation of nuisance) and require additional trash controls. (Ocean Plan Amendment at III.L.2.d and III.L.3; Part I ISWEBE at IV.A.3.d and IV.A.4.) The Trash Provisions also allow the permitting authority to require other dischargers to implement trash controls. These approaches are sufficient trash controls to meet standards in a reasonable amount of time.
42.3	Track 1 does not differentiate		Pursuant to the express terms of the Trash Amendments

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	between public and private drains, instead referring to "all storm drains". Please confirm that this includes storm drains on private property.		(Ocean Plan Amendment at III.L.2.a; Part I ISWEBE at IV.A.3.a), the requirement for MS4 permittees to comply with Track 1 or Track 2 extends to the extent they have "regulatory authority" over priority land uses in their jurisdiction. If the MS4 permittee has legal authority to install, operate, and maintain full capture systems for a storm drain, whether at the actual site of the drain or inline, then that permittee would be required to do so under the Trash Amendments. To comply with Track 1, full capture systems must be installed, operated, and maintained for "all storm drains that capture runoff from priority land uses. (Ocean Plan Amendment at III.L.2.a.1; Part I ISWEBE at IV.A.3.a.1.) Insofar as an MS4 permittee does not have authority over a private storm drain, the MS4 would comply with Track 1 by, for example, installing a vortex separator system inline, which would capture trash from a whole drainage area of individual storm drains (see Staff Report section 5.1.3), or installing trash nets (see Staff Report section 5.1.4) to capture trash from drainage areas of storm drains. (See generally, discussion in Staff Report in Section 5 through 5.1.5.) The State Water Board does not support the recommendation. Additionally, Please see Response to Comment 11.4.
42.4	Avoid backsliding in areas with existing trash regulation - Appendix D - Section III.I.6.a Section III.I.6.a seems to provide dischargers with existing trash control requirements that are more stringent than the proposed provisions with a less stringent compliance option. For example, the 15 Los Angeles area TMDLs set a trash reduction target of zero trash. Applicability in Los Angeles region is addressed in the "Applicability" section, but section III.I.6.a should		Backsliding generally refers to reductions in treatment levels required by NPDES permits. The Clean Water Act and U.S. EPA's regulations limit the circumstances under which modified or reissued permits may set less stringent effluent limitations than required by previous permits. (CWA § 402(0)(3)(A)-(E); 40 CFR § 122.44(l); see also 40 CFR § 122.62 (applicable circumstances for permit modification or revocation).) The "anti-backsliding" provisions generally prohibit relaxation of effluent limitations previously established on the basis of best professional judgment, unless circumstances exist which make one of the exceptions to the general rule applicable. The commenter also misconstrues applicability of the prohibition contained in Section III.L.6.a, which states: "Dischargers with NPDES permits that contain specific requirements for the control of Trash that are consistent with these Trash Provisions

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	be modified to state: "Only programs with less stringent existing trash control requirements would be deemed in compliance with the prohibition of discharge if they are consistent with section III.L.2." Where more stringent standards already apply, for example as part of an NPDES permit incorporating local TMDLs, they must remain in place to avoid backsliding.		shall be determined to be in compliance with this prohibition if the dischargers are in full compliance with such requirements." Such applicability of the prohibition does not authorize a reduction in treatment levels required by NPDES permits. The Trash Amendments' prohibition of discharge does not apply the waters for which the 15 Los Angeles TMDLs apply. The Trash Amendments do not effectuate a lowering of treatment levels by accepting more stringent TMDLs from their application. Additionally, the proposed Trash Amendments direct the Los Angeles Water Board to hold a public meeting to reconsider the scope of its trash TMDLs within one year of the Trash Amendments' effective date and focus its permittees' trash control efforts on high trash generation areas rather than all areas within each permittee's jurisdiction. The reconsideration would occur for all existing trash TMDLs except for the Los Angeles River Watershed and Ballona Creek Trash TMDLs, because those two TMDLs are approaching final compliance deadlines.

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42.5	Full capture system approval process must be improved - Appendix D – Section III.L.1.b.(1) To ensure reliable performance of full capture systems, the following improvements to the certification process are recommended: · Prohibit the use of on-line trash control devices that direct peak flows through the trash storage area unless they are cleaned out after each significant storm event (<0.25" depth); or specify that full capture systems must retain trash in an off-line configuration where peak flows are diverted upstream of the trash storage area. · Require in-field demonstration that trash control systems can capture and retain trash at the design treatment flow rate. Alternatively laboratory demonstration of trash capture and retention may be demonstrated using an influent stream containing a representative mix of gross solids including sediment, organic debris and trash. · Document the maintenance procedures and frequency required to maintain adequate trash removal and retention at the design flow rate. Include this information in any full capture certification. · Require an initial inspection frequency of monthly or after each significant event greater than 0.25" in depth for		Comment noted. These recommendations may be considered during the certification process. See Staff Report at section 2.8, which includes a revised discussion for the certification process the State Water Board will utilize.

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	the first year with maintenance performed when screens are 25% clogged or when trash systems. Based on observations during this period inspection frequency may be extended, but should occur at twice the frequency that maintenance is required. Prior to acceptance by the State Board, an independent audit of the effectiveness of previously certified full-capture BMPs in Los Angeles is needed per the requirements above and with particular focus on the actual operation and maintenance burden imposed by each type of system. To receive credit for full capture system treatment, maintenance efforts must be adequate to ensure that devices continuously have capacity to remove and retain 5 mm particles from the one year storm.		
42.6	Los Angeles area trash TMDL requirements should not be undermined Appendix D – Section III.L.1.b.(2) Although not explicitly stated, this section seems to allow Los Angeles area permittees to reduce the scope of their trash control efforts to focus only on priority land uses. This is unacceptable since it contradicts the clear direction given in the Trash TMDLs that the goal of zero trash discharge be		See Responses to Comments 6.7 and 42.2.

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	attained.		
42.7	This section (Section III.L.2.a) should be amended to require permitting authorities electing to pursue Track 2 to implement full capture systems where feasible, prior to consideration of other controls.		The proposed Trash Amendments define Track 2 so that any combination of the treatment controls, institutional controls, and multi-benefit projects may be used to achieve the same performance results as compliance under Track 1, namely full capture system equivalency. To provide flexibility to the permittee in trash control plan development, the proposed Trash Amendments do not specify the order of types of controls that should be installed. However, in order to achieve "full capture system equivalency," the Trash Amendments provide that the State Water Board expects that MS4 permittees will elect to install full capture systems where such installation is not cost-prohibitive. This expectation and the phrase full capture system equivalency were incorporated into the proposed final Trash Amendments. (Ocean Plan Amendment and Part I ISWEBE at definition for "full capture system equivalency".) The term "feasible" would have to be further defined and the State Water Board is disinclined to introduce that term under Track 2 as a compliance requirement. Please see Responses to Comment 6.2 and 6.3.
42.8	This section requires permittees to select either Track 1 or 2. Although not expressly stated, it seems that this decision is intended to be made once based on mitigation approaches selected for the entire drainage network under the jurisdiction of the permittee. Considering the likelihood that there will be at least one location in each jurisdiction where full capture systems are infeasible, this interpretation will push virtually every jurisdiction into Track 2. A better approach would be to allow the jurisdiction to select Track 1 or Track		Comment noted. See Response to Comment 42.7.

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	2 on a catchment by catchment basis with a requirement that full capture systems be installed where feasible. Alternatively, a Track 1 could include an allowance of up to 5% of area treated by non-full capture systems.		
42.9	The reference in this section to Chapter III.I.6.a should be corrected to reference Chapter III.I.6.		The section references have been corrected in the proposed final Trash Amendments.
42.10	This section seems to offer industrial permittees a path to compliance with the narrative trash objective that is based on installation of full capture systems. This is surprising given the fact that preproduction plastics are typically smaller than 5 mm in diameter and will not be controlled by full capture systems. Since industrial sites are listed among the priority land uses that are covered in section III.L.2.a, full capture controls or equivalently effective controls would already be required. This section must be amended to require additional controls that are effective for preproduction plastics. For example, the CDS system is available with standard screen apertures of 1.2 mm, 2.4 mm, and 4.7 mm. The 2.4 mm screen has been used extensively in California and is the default standard in several other states. The hydraulic and pollutant removal capabilities of this system for trash as well as fine		The section referenced provides NPDES permittees subject to the Industrial Storm Water General Permit a path to comply with the prohibition. Additionally, NPDES permittees subject to the Industrial Storm Water General Permit must comply with the best management practices requirements for trash in that permit. Regardless of the Trash Amendments, all facilities with the potential to discharge preproduction plastics are subject to the best management practices permit requirements required pursuant to Water Code section 13367(a). By the express terms of the Trash Amendments, the prohibition applies to the discharge of preproduction plastic by manufactures and transporters of those plastics. (Ocean Plan Amendment at III.I.6.e; Part I ISWEBE at IV.A.2.e.) For these reasons, the State Water Board does not support the recommendation.

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	sediment and oil and grease are well documented. To ensure that systems are installed that actually address preproduction plastics, the following change is recommended: · Replace “full capture systems” with “preproduction plastic capture systems” in section III.L.2.c.(1) and specify that such systems must remove and retain particles 2.4 mm and larger during the peak flow rate generated by the 1-year storm. · Replace references to “full capture systems” elsewhere in section III.L.2.c with “preproduction plastic capture systems”.		
42.11	The 10 year final compliance time line is appropriate for those permittees that select the full-capture option considering the complexity of identifying, designing, permitting and constructing storm drain retrofit projects.		Comment noted.
42.12	The 10 year final compliance time line should be shortened to 7 years for those permittees that select Track 2. Since many of the non-full capture solutions can be implemented without new capital improvement projects the time line can be shorter. For example increasing street sweeping, enforcement and public education can be done quickly. A shorter time line also incentivizes selection of the		To allow for statewide consistency and provide sufficient time for permittees to successfully achieve the prohibition of discharge, the State Water Board will provide a ten year compliance deadline for both Track 1 and Track 2. (Ocean Plan Amendment III.L.5.a-b; Part 1 ISWEBE IV.A.6.a-b.) This deadline allows for implementation of trash controls to occur over at least two permit cycles. This also provides the ability to use the second permit cycle to build on the first permit and allow for adaptive management. Additionally, for MS4 permittees that are designated after the

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	full capture track which provides more trash capture certainty. Controls selected under either track should be undertaken in the context of a broader compliance plan such that redundant controls are avoided and maximum leverage is gained toward satisfying other water quality goals.		effective date of the Trash Amendments, their time schedule of ten years begins on the effective date of the designation. In that context, the State Water Board does not consider it equitable for a MS4 permittee that is designated, for example, six years after the effective date of the Trash Amendments to have a shorter time schedule in comparison to MS4 permittees designated prior to the effective date of the Trash Amendments. Additionally please see Response to Comment 7.7 and Staff Report section 2.5.
42.13	There is an inequity for catch basin scale controls for short duration rainfall intensities. The full capture definition should be amended as follows: · Catch basin scale controls must be sized using the peak one-year, five-minute rainfall intensity · For devices serving multiple the rainfall intensity corresponding to the actual time of concentration for the contributing catchment must be used.		While there is a relationship between the scale of the catch basin, rainfall intensity, and trash mobilization, the definition the of full capture systems will remain as proposed in the Trash Amendments with a focus on the peak flow rate resulting from a one-year, one-hour storm. No change is needed.

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42.14	Trash reduction success following Track 1 hinges on adequate maintenance of full capture systems. To ensure that systems are functioning as designed, they should initially be inspected after every significant storm event (>0.25" depth) until experience justifies a less frequent schedule. Where 25% of the screen is occluded the screen should be cleaned. For those systems storing trash in an on-line configuration, trash should be removed when it reaches 25% storage capacity. For those systems storing trash in an off-line configuration, trash should be removed when it reaches 75% of storage capacity. The local Regional Board should perform periodic spot checks to ensure accuracy and adequacy of reported maintenance information.		Within reporting requirements for Track 1, the permittees shall demonstrate on an annual basis the proper installation, operation, and maintenance of full capture systems to the permitting authority. (Ocean Plan Amendment at III.L.2.a.1; Part I ISWEBE at IV.A.3.a.1.) The purpose of this requirement is to demonstrate progress towards compliance and establish accountability for proper operation of full capture systems. The permitting authority does have the discretion to perform period spot checks, especially if there are areas of concern. However, it is not appropriate to include in a statewide water quality control plan, the type of product specific inspection and maintenance language proposed by the commenter. Therefore, the State Water Board does not propose adding an inspection criterion as proposed by the commenter.
42.15	Full capture system – The last sentence of this section allows the Executive Director of the State Water Board to decline certification of some full capture systems certified by the Los Angeles Regional Water Board. This is encouraging since some of the certified devices are unable to capture and retain trash with the required effectiveness (100% removal for the 1 year storm) at feasible maintenance levels. More information regarding criteria for		The Executive Director does have the authority to certify or decline certification for full capture systems requested for certification with relevant supporting documentation. (See Trash Amendments, Definitions, App. I, "Full capture system" and Staff Report, section 2.8 Adding revised language to the certification process and stating that the State Water Board would follow a similar process established by the Los Angeles Water Board and referencing: Yang, M. Procedures and requirements for certification of Best Management Practice for trash control as a full capture system. Letter to Jonathan Bishop. 3 August 2004. Available at: http://www.waterboards.ca.gov/rwqcb4/water_issues/programs/stormwater/municipal/full%20capture%20system.pdf.)

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	accepting or rejecting full captures systems should be given to allow entrepreneurs and engineers information needed to create the next generation of trash controls. Simply reverting to the failed approach of considering only the screen aperture size and modeled flow rates gives system designers little incentive to consider operational feasibility, especially if maintenance enforcement is weak.		The focus of the certification process is to provide assurance to permittees that their valuable resources are used on full capture systems that will successfully capture trash from storm water. The information regarding criteria for certification contained in the Staff Report is sufficient.
42.16	The term "vortex separation system" has been used in Trash TMDLs and related documents as a generic term for the CDS system which is a proprietary system marketed by Contech Engineered Solutions, LLC. The CDS system has been used in California for over 15 years and at thousands of locations nationally. There are approximately ten other vortex separation systems available in the market, none of which were part of the trash TMDL development process and none of which have been certified as full capture systems by the Los Angeles Regional Water Board. These systems are typically used in California as pretreatment upstream of infiltration, detention and filtration systems. Continuing to use the term "vortex separation system" is misleading in that it seems to include those systems without screens that do not meet the full		The State Water Board appreciates the explanation of this distinction between vortex separation system and CDS systems. However, no change is necessary to Staff Report 5.1.3.

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	capture system standard. Where it is being used in a historic context, the actual product name should be used in lieu of "vortex separation system", for example in references to the Calabasas CDS system used to develop baseline trash loads. Also where "vortex separation systems" are called out as an approved full capture system by the Los Angeles Regional Water Board, the trade name CDS should be used.		
42.17	Although trash control is the focus of these amendments, it is noteworthy that some full capture systems provide significant ancillary benefits. For example, the CDS system is unique among trash controls in that it has spill storage and sediment removal capabilities that are well documented in field studies and should be noted in Section 5.1.3. In addition, these important ancillary benefits should be considered in any cost/benefit analysis and may play a significant role in meeting other pollution control objectives either by removing particulate bound pollutants of concern directly or by significantly extending the useful life of downstream filters, infiltration systems, biotreatment systems and other BMPs.		The State Water Board agrees that trash controls like full capture systems, low impact development, and multi-benefit projects can provide benefits to multiple storm water pollutants while extending the useful life of downstream filters, infiltration systems, bio-treatment systems, and other pest management practices. However, consideration of ancillary benefits is beyond the scope of this project and will not be added to the Staff Report.
42.18	The 10 year final compliance time		Comment noted. The State Water Board will maintain the ten

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	line is appropriate for those permittees that select the full-capture option considering the complexity of identifying, designing, permitting and constructing storm drain retrofit projects.		year time schedule for Track 1
43.1	The fiscal analysis within the Draft Amendment Report estimates that the installation and maintenance costs of this new program could range between $8-$10 per person per year. The County has approximately 180,000 residents, so using that logic - this program could cost the County $1.8 million per year. That is completely unsustainable amount of money for the County to spend and would no doubt trump all other water quality priorities that the County has. The ability to develop a property fee to fund this new program is limited by Proposition 218 which requires a two-thirds voter approval. Today's voter climate has demonstrated repeatedly that increased fees are not supported for any program of this nature. Grant funding to satisfy regulatory requirements is also difficult to obtain. The scale of the Draft Amendments should be tailored and scaled to different community types so that a more appropriate level of effort is required that is more financially feasible to achieve.		The success of Proposition 218 is outside of the scope of the proposed Trash Amendments. Additionally, please see Responses to Comments 4.7 and 10.4.

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43.2	Due to the rural nature of the County, Track 2 appears to be a more appropriate Track for the County to follow. However, many of the requirements for Track 2 require data collection, management, analysis and reporting which will do nothing to directly improve water quality conditions. The staffing required to implement these requirements appears to be substantial based on the current version of the Draft Amendments. Proposed monitoring requirements will generate data that may be difficult to interpret, with the results potentially not being applied in any meaningful way to improve water quality.		Please see Response to Comment 4.6.
43.3	Screening drain inlets (DI's) to a 5 millimeter standard will increase that potential which will create significant flooding, nuisance and overflow erosion hazards throughout the County. Maintenance of accessible screened DI's throughout the County would compromise resources and funding dedicated to various obligated urgencies and necessities of the County.		Please see Response to Comment 20.5.

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43.4	Many the central and easternmost portions of the County range in elevations between 2,000 to over 6,000 feet above mean sea level and are subject to snow and ice conditions between the months of December through April. DI's located within these elevations are subject to snow and freezing temperatures and based on experience will most likely be inaccessible for maintenance throughout the winter season. If DI's are screened to a 5 millimeter standard and become obstructed with vegetative litter and debris due to maintenance inaccessibility, runoff throughout the winter months and during the ice and snowmelt periods will produce significant safety hazards, damage to infrastructure and consequential erosion.		The State Water Board appreciates the conditions of high elevation municipalities. Trash is a priority pollutant in California. The Trash Amendments provide flexibility to NPDES permittees with the dual alternative "compliance track" approach, so that permittees can determine the most effective means of controlling trash in their respective jurisdictions while taking into consideration particular site conditions (e.g., elevation), types of trash, and the available resources for maintenance and operation.
43.5	Thus, the number one priority and the majority of the County's financial resources there are dedicated to capturing and removing fine sediment particles prior to their discharge to Lake Tahoe. This is a significant and costly exercise that is of great importance to the preservation of that important natural resource water. If the Draft Amendments are adopted as drafted, resources will need to be diverted from the TMDL to address controlling trash and Lake Tahoe's		The presence of trash in surface waters, including Lake Tahoe, is a serious issue in California. The State Water Board does not see a conflict between the ongoing efforts to achieve compliance with the sediment TMDL and framework proposed in the Trash Amendments. As proposed, Track 2 encourages the use of multi-benefit projects. Projects to capture and remove fine sediment particles could also function to capture and remove trash. The State Water Board believes that trash is a controllable pollutant in Lake Tahoe and across California. Controlling trash would protect the beneficial uses of California's surface waters.

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	famed clarity could be jeopardized.		
43.6	The Draft Amendments may be in conflict with the Delta Regional Monitoring Plan (RMP) and the currently in production Municipal Region-wide (Region 5) Storm Water Permit due to the requirement to elevate trash as a priority.		The State Water Board does not see a conflict with the proposed Trash Amendments and the Delta Regional Monitoring Plan and Municipal Region-Wide Storm Water Permit. Trash is a prevalent pollutant impairing the beneficial uses of California's surface waters including the Delta, rivers, and lakes in Central Valley Region. Please see Response to Comment 11.9.
43.7	The Draft Amendments would require participants to redirect efforts and funds to trash, which could eliminate funding for addressing one or all other identified priority pollutants and areas of concern. The ability for the County to prioritize our resources on critical water issues and maximize staff resources will result in achieving the greatest outcome for the environment within and downstream of the County.		The State Water Board is supportive of the prioritization of resources for reduction and control of storm water pollutants; however, trash is a priority pollutant across California. With the Trash Amendments, it is intended that Trash be a high priority along with other regional priority pollutants. Please see Response to Comment 4.7.

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43.8	The County feels that source control is the best way to deal with trash in our waterways. A focus on source control of plastic trash, especially compared to full capture provisions of the Draft Amendments, is consistent with State legislative and agency goals for reducing solid waste and associated generation of greenhouse gases (GHGs). There should be additional focus on source control added to the Draft Amendments.		Please see Response to Comment 4.5.
43.9	How will the Draft Amendments provide relief for the County when managing trash resulting from the County's homeless demographic? Known encampments are located on non-County owned property and are typically near surface waters. In 2011, the County conducted a survey and 90 persons were identified as meeting HUD's definition of homelessness and 130 were identified as meeting the expanded definition of homelessness.		Please see Response to Comments 6.5 and 34.2.
43.10	How will the Draft Amendments provide relief for the County from windblown, vehicle blown, animals, accidents, and/or illegal direct dumping into or near surface waters which all can significantly contribute to trash accumulating in receiving waters? Full capture systems and institutional/source controls will be		Please see Response to Comments 6.5 and 34.2.

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	ineffective for preventing these types of discharges.		
43.11	Due to the Draft Amendments enforcing the issue of trash, how possible would it be to require solid waste providers to share the responsibility for installation, operation, maintenance and enforcement of full capture systems and fee collection?		Permittees should continue to strengthen partnerships between their municipality's waste management agencies and recycling centers to address trash control.
43.12	The County is in favor of "shall not accumulate" language and is not in favor of a "zero trash limit". The County feels a zero trash limit establishes unrealistic goals.		The State Water Board agrees with this comment. In addition, please see Response to Comment 6.1.
43.13	The County is in favor of the Track 2 option remaining in place, with modifications. The County does not feel full capture systems are the only approach for effectively managing trash.		Comment noted. The dual alternative "compliance track" approach is proposed to provide flexibility for permittees to determine the most effective means of controlling trash while taking into consideration particular site conditions, types of trash, and the available resources for maintenance and operation.

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43.14	The County would like to see more guidance on the Track 2 monitoring methodology. The County feels there is a need for a standardized methodology for proving effectiveness. Additionally, the County would like to see language in the Draft Amendments to address how the Track 2 Implementation Plans will be evaluated. In what units will trash be measured? The County is unable to accurately estimate what the actual cost of implementation and program maintenance will be based on the current Draft Amendments.		Please see Response to Comment 4.6.
43.15	The County would like the flexibility to apply to both Tracks 1 and 2, with amendments, due to different land use areas located throughout the County's MS4 boundaries. This would allow the County the ability to reduce monitoring requirements if we find Track 1 to be the best approach in one or more areas of the municipalities.		Please see Response to Comment 4.6.
43.16	The County is in favor of the time extension language provided for regulatory source controls requiring extensive jurisdictional ordinance adoption time.		Please see Response to Comment 4.5.

Comment Letter	Comment	Recommended Language	Response
44.1	The County shares the State Board's concern for ensuring the State's waterways are free from litter and debris. The proposed Trash Amendments will apply to all surface waters of the State. The Draft Staff Report, however, identifies 73 water bodies that are listed for trash, which represents only 2 percent of the total water bodies in California. Only four regions have trash listings, two of which have TMDLs for trash (Los Angeles and Colorado). In addition, most of the factual justification described in Appendix A justifying the proposed Trash Amendments comes largely from the coastal areas of Los Angeles and San Francisco. Furthermore, there has not been a demonstration that trash is likely to cause a discharge of waste to most waters of the State. Therefore, there is a lack of substantial evidence justifying application of the proposed Trash Amendments to every storm drain statewide, particularly with respect to inland areas.		Trash is a prevalent and controllable priority pollutant across California's surface waters, as described in Section 1 and 3, Appendix A, and Appendix C of the proposed Final Staff Report. While only 73 water bodies are currently 303(d) listed as impaired for trash, this number is increasing and TMDL implementation can be costly and intensive. A central element of the Trash Amendments is a land-use based compliance approach to focus trash controls to the areas with high trash generation rates -- not in all land uses (i.e., not in "every storm drain statewide"). Within this land-use based approach, a dual alternative "compliance track" approach is proposed for permitted storm water dischargers to implement a prohibition of discharge for trash. The dual alternative "compliance track" approach targets and reduces trash from the areas of high rates of trash generation and protect the beneficial uses of California's surface waters. Additionally please see Responses to Comments 10.10 and 18.4.

Comment Letter	Comment	Recommended Language	Response
44.2	The primary means to regulate trash has been through the federal 303(d) listing and TMDL processes. In the two regions subject to trash TMDLs, TMDLs have either been established by the Regional Board or EPA. The proposed regulatory basis for imposing the proposed Trash Amendments, however, is Water Code section 13170, whereby the State Board may adopt water quality control plans where they are applicable. Without substantial evidence to justify statewide trash controls, the State Board would be regulating waterways where the proposed Trash Amendments should not be applicable.		The State Water Board is responsible for reviewing statewide water quality standards and for modifying and adopting standards in accordance with section 303 (c)(1) of the federal Clean Water Act (33 U.S.C. § 1313(d)) and § 13170.2(b) of the California Water Code. Trash is a pervasive problem in California. Controlling trash is a priority, because trash adversely affects our use of California's waterways. Trash impacts aquatic life in streams, rivers, and the ocean as well as terrestrial species in adjacent riparian and shore areas. Trash, particularly plastics, persists for years. It concentrates organic toxins, entangles and ensnares wildlife, and disrupts feeding when animals mistake plastic for food and ingest it. Additionally, trash creates aesthetic nuisance and reduces the economic value of California's recreation areas including beaches. Additionally, please see Response to Comment 44.1.

Comment Letter	Comment	Recommended Language	Response
44.3	Furthermore, the State Board would essentially usurp the Constitutional land use authority of local governments as well as the expertise of the Regional Water Boards, which are in a better position to identify priority pollutants and regulate accordingly. State Board staff appears to utilize the compliance approach used in the LA Trash TMDL that was upheld in City of Arcadia v. State Water Resources Control Board but sidesteps the listing and TMDL process entirely.		The Clean Water Act and Porter-Cologne direct the Water Boards to regulate the discharge of pollutants into waters of the United States and waters of the State, respectively. Trash is considered a pollutant and where runoff and storm water transports trash into these waters, it is considered discharge of waste subject to Water Board authority. Trash is a prevalent and controllable priority pollutant across California's surface waters. The Trash Amendments propose to address the impacts of trash to the surface waters in California (with the exception of those waters within the jurisdiction of the Los Angeles Water Board with trash or debris TMDLs that are in effect prior to the effective date of the Trash Amendments) through development of a statewide plan to control trash. The project objective for the proposed Trash Amendments is to provide statewide consistency for the Water Boards' regulatory approach to protect aquatic life and public health beneficial uses, reduce environmental issues associated with trash in state waters, and focus limited resources on high trash generating areas. A central element of the proposed Trash Amendments is a land-use based compliance approach to focus trash controls to the areas with high trash generation rates. Within this land-use based approach, a dual alternative compliance Track approach is proposed for permitted storm water dischargers (i.e., MS4 Phase I, MS4 Phase II, Caltrans, IGP, and CGP) to implement a prohibition of discharge for trash. The implementation provisions would be incorporated to NPDES permits by the permitting authority, either the State Water Board or one of the nine regional water boards. Additionally, the implementation provisions are modeled after existing programs and lessons learned across the state, such as trash and debris TMDLs and the San Francisco Bay MRP.

Comment Letter	Comment	Recommended Language	Response
44.4	Lastly, while MS4s may transport trash into statewide waterways, the studies cited in Appendix A note that trash is largely a non-point source issue due to storm and wind events. To the extent that the State Board exercises proper authority to require the installation of catch basins to prevent non-point sources of trash, the State Board would act under authority of State Law, not federal law.		Trash is a priority pollutant across California. The absence of an identified impairment does not mean that a water body is not impaired for a certain constituent. Specifically, many water bodies have no data on which to base any impairment decision. Thus the lack of a determination of impairment may not be used as evidence of good water quality. The presence of trash in surface waters, especially coastal and marine waters, is a serious issue in California. Trash discarded on land is frequently transported through storm drains to waterways, shorelines, the seafloor, and the ocean. Statewide and local studies have documented the presence of trash in state waters and the accumulation of land-based trash in the ocean. Street and storm drain trash studies conducted in regions across California have provided insight into the composition and quantity of trash that flows from urban streets into the storm drain system and out to adjacent waters. There are multiple transport mechanisms of trash to state waters from point and non-point sources including storm water transport, direct dumping, and wind-blown. To control trash in surface water from both point and non-point sources, the Trash Amendments propose to implement the water quality objective for trash through a conditional prohibition of discharge of trash directly into waters of the state or where trash may ultimately be deposited into waters of the state. The prohibition of discharge applies to both permitted and non-permitted dischargers. Dischargers would comply with the prohibition as outlined with the plan of implementation when such implementation plan is incorporated into the dischargers' NPDES permits, WDRs, and Waivers of WDRs.

Comment Letter	Comment	Recommended Language	Response
44.5	The County recommends the approach suggested by San Diego County that the State Board should establish the narrative water quality objective for trash and establish implementation procedures for the water quality objective that are triggered when the water quality objective has been exceeded and the NPDES permit holder has been demonstrated to be a source of trash causing the exceedance. This approach is consistent with the approach taken to regulate all other pollutants in the State, and allows an MS4 to prioritize trash control where its water body is specifically listed for trash.		Please see Response to Comment 6.1.
44.6	The costs for implementation of the proposed Trash Amendments are much higher than estimated by State Board staff. For example, if the City of Irvine were to implement Track 1, full capture devices would be required at 4,600 catch basins (out of 6,423 total). Utilizing the estimated cost from Appendix C: Economic Considerations for the Proposed Amendments to Statewide Water Quality Control Plans to Control Trash of $1,142 per catch basin insert for installation and one year of operations and maintenance, the estimated total cost to implement Track 1 is $5,253,200. This cost estimate results in a cost per capita		Please see Response to Comment 26.9.

Comment Letter	Comment	Recommended Language	Response
	of $21.65, more than double the $10.50 estimated cost per capita included in the proposed Trash Amendments in Table 13. Operations and maintenance costs would then continue for the life of the device.		
44.7	Furthermore, Permittees subject to the Los Angeles River TMDL have expressed substantial difficulty in reaching full compliance for the final 5% of the catch basins in their city without expending substantial amounts, ranging from $10,000 to $100,000 per catch basin, to completely retrofit the remaining catch basins. Moreover, if the State Board properly exercises its authority over MS4s, it is exercising State authority. The County therefore supports the California Stormwater Quality Association (CASQA) recommendation that the State Board assist with the development of funding sources for Permittees to comply with the proposed Trash Amendments.		See Response to Comment 4.7 and Comment Letter 10.
44.8	MS4 permittees would be considered in full compliance with the prohibition of trash discharge so long as the permittees were fully implementing Track 1 or Track 2. The proposed Trash Amendments, however, are silent on whether meeting the discharge prohibition requirements also means full compliance with		Please see Response to Comments 4.1 and 10.9.

Comment Letter	Comment	Recommended Language	Response
	receiving water limitations. This creates an ambiguity where a permittee could still be subject to a trash TMDL or could potentially be deemed as not complying with the receiving water limitations section of its permit. The proposed Trash Amendments should be clarified to define compliance accordingly.		
44.9	As was previously stated in the County's May 10, 2013 letter, the definition of "full capture systems" should be refined to specify that the point of compliance is the street level (drain inlet) for catch basin-based BMPs. Additionally, full capture system specifications should be consistent with existing MS4 Permit numeric sizing criteria for structural treatment BMPs. The proposed Los Angeles River Watershed Trash TMDL language provides one example calculation for establishing a flow-based system; however, other MS4 permit numeric sizing criteria should be included as an option. For example, existing MS4 Permit language for Orange County requires that BMPs be sized to treat either: 1) the maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour, for each hour of a storm event; 2) the maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity, as determined from the local historical		Please see Response to Comment 26.6.

Comment Letter	Comment	Recommended Language	Response
	rainfall record, multiplied by a factor of two; or 3) the maximum flow rate of runoff, as determined from the local historical rainfall record, which achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile hourly rainfall intensity multiplied by a factor of two.		
44.10	The definition of "trash" should be amended to include a size limit of 5mm, consistent with the definition of "full capture systems" that are the basis for compliance for Track 1. State Board staff's rationale for omitting the size limit from the definition is to ensure the prohibition pertains to pre-production plastics and "other materials." There are two problems with this justification: (1) The State Board assumes that pre-production plastics will be adequately and thoroughly addressed by industrial activities via the Industrial General Permit; and, (2) The State Board has not defined "other materials," thereby creating an additional source of trash of unknown composition or origin that must be controlled without an explanation as to which entity would be responsible. Without the inclusion of a size limit in the definition of "trash," MS4 operators could end up liable for pre-production plastics and "other materials" less than 5mm in size that		Please see Response to Comment 20.11.

Comment Letter	Comment	Recommended Language	Response
	are found within its storm drain system, even if in full compliance with either Track 1 or Track 2.		
44.11	Several municipalities within the County have participated in grant-funded Measure M projects through the Orange County Transportation Authority (OCTA) to install catch basin BMPs. Per Measure M rules, these BMPs must remain in place for at least ten years or the participating municipalities would be required to repay the funding they received. These catch basin BMPs were not designed to meet the definition of a full capture system as outlined by the proposed Trash Amendments; therefore, the municipalities face either non-compliance with the Trash Amendment provisions or the loss of a significant amount of funds due to repayment of their Measure M grant(s). The County requests that either the affected catch basins be exempted from the requirements of the proposed Trash Amendments, or these municipalities be granted an extension to comply with the proposed Trash Amendments at these catch basin locations.		The State Water Board appreciates the work of the County of Orange and the Orange County Flood Control District on the Measure M projects. Existing projects can aid in the achieving compliance in the ten-year time schedule with a head start on projects. However, proposed final Trash Amendments do not have a time extension option. Please see Response to Comment 4.5.
44.12	As currently drafted, the proposed Trash Amendments equate high trash generating areas to priority land use areas, which are defined as		Please see Responses to Comments 10.7 and 12.2.

Comment Letter	Comment	Recommended Language	Response
	areas developed as high density residential, industrial, commercial, mixed urban, and public transportation stations. State Board staff estimate that this definition of priority land use areas will equate to 2.35% of the Santa Ana Regional Board land area and 1.68% of the San Diego Regional Board land area; however, this is a gross underestimation of the land area that would actually be categorized "priority land uses" in Orange County, per the current definition. For example, the City of Irvine has conducted a GIS analysis of the land use areas in their city and found that 71% of the City's developed area would be considered priority land use areas under the proposed Trash Amendments. This figure is expected to be equal or greater for the majority of the other cities within Orange County, as Irvine ranks 28th in the County for population density, and many of the areas that would be considered priority land use areas are not high trash generating locations. The County recommends that each municipality be allowed to identify the high trash generating locations in their municipal area (a) or, if the priority land use designation is retained, that the definition for high density residential is revised to be consistent with state and local standards (b).		

Comment Letter	Comment	Recommended Language	Response
44.13	Given that the extent of the proposed Trash Amendments will be much greater than the State Board staff anticipated, the County requests that each municipality be allowed to determine which areas constitute high priority trash generating locations within its jurisdiction. The definition of priority land use areas included in the proposed Trash Amendments is based on a review of trash generation in Los Angeles County, and is not necessarily reflective of conditions in Orange County. Furthermore, MS4 Permittees in Orange County have collected data on catch basin maintenance for over ten years and could easily refer to this data to identify the greatest trash generating areas within their municipal area. This beneficial revision can be accomplished through amending the language on page E-9 regarding authorization of "equivalent alternative land use[s]" to include the following: "An MS4 may request its permitting authority to approve an exemption from treatment controls if that MS4 has areas within its jurisdiction that generate trash at rates that are significantly lower than estimated for the priority land use listed."		Please see Responses to Comments 10.7 and 12.2.
44.14	Although State Board staff cite the Governor's Office of Planning and		The definition for high density residential is not uniform across the state. Based on the feedback from the Focused

Comment Letter	Comment	Recommended Language	Response
	Research 2003 General Plan Guidelines as an "example of the dwelling unit standards used in local general plans" at 15-30 units per acre, high density residential is defined in the proposed Trash Amendments as "all land uses with at least ten (10) developed dwelling units/acre." The most prevalent standard for high density residential in Orange County is nearly double that of the proposed Trash Amendments, at 18 units per acre. The County recommends that the definition for high density residential be amended in one of the following three ways: (1) allow each municipality to use the definition of high density residential included in their General Plan; (2) revise the definition of high density residential in the proposed Trash Amendments so that it is consistent with the Governor's Office of Planning and Research 2003 General Plan Guidelines at 15 units per acre; or (3) replace high density residential with multi-family residential in the definition of priority land use areas.		Stakeholder Meetings, 10 *developed* dwelling units per acre was agreed to be appropriate. The permitting authority may additionally allow for flexibility to the permittee General Plan definition as long as there is not a substantial decrease in the area that requires trash controls through the "equivalent alternate land use" provision. (See Ocean Plan Amendment and Part I ISWEBE definition for "priority land uses" and "equivalent alternate land uses.")
44.15	Orange County Permittees in Region 9- San Diego will be required in 2015 to identify the highest priority water quality conditions within each watershed and develop strategies to address those priority areas and pollutants. The County has already determined bacteria, nutrients, and		Please see Response to Comment 11.9.

Comment Letter	Comment	Recommended Language	Response
	toxicity to be the top pollutants of concern in both Region 8 and Region 9. Requiring trash capture within catch basins under Track 1 will create a system-wide repository of organic debris within the drainage that will likely function as a source of bacteria and nutrients in both dry and wet weather. The proposed Trash Amendments, as currently drafted, would effectively have trash supersede these top pollutants of concern and, indeed, likely confound efforts to address the highest priority water quality conditions as required by MS4 permits. The County strongly recommends that a mechanism be included in the proposed Trash Amendments to allow for watershed planning efforts to continue unimpeded, with trash being among the pollutants that are considered and prioritized as part of these efforts, but not necessarily the top priority if data does not support it as such. Allowing Permittees to identify which areas in their municipal area are truly high trash generating locations, as recommended in comment 8a, would be one way in which the proposed Trash Amendments could be supportive of watershed planning efforts.		

Comment Letter	Comment	Recommended Language	Response
44.16	It is unclear how the equivalency of Track 2 to Track 1 would be demonstrated, given that the level of trash removed through Track 1 would not be known if implementing Track 2. If the monitoring that is required for Track 2 is essentially infeasible, then there is only really a Track 1, which is problematic for Orange County (see prior comments). The County strongly recommends that this requirement be removed and that the proposed Trash Amendments be reframed to make Track 2 a truly equivalent option, particularly for municipalities required by permit to develop strategies to address priority areas and pollutants at a watershed scale.		Please see Response to Comment 16.3.
44.17	The County is supportive of the option to extend the compliance time by up to three years for implementing regulatory source controls and requests that the time extensions also be granted to those municipalities that have proactively implemented regulatory source controls such as the Cities of Huntington Beach and Laguna Beach, which have implemented bans on single-use plastic bags, and the City of Dana Point, which has implemented bans on both single-use plastic bags and Styrofoam.		Please see Response to Comment 4.5.

Comment Letter	Comment	Recommended Language	Response
44.18	As presented, the proposed Trash Amendments would only allow for devices certified by the Los Angeles Water Board to be considered as full capture devices at the time of adoption. Thousands of devices currently installed and removing trash in the State would not be certified. The proposed Trash Amendments should provide a process for non-approved devices to be considered certified as full capture if also certified by the San Francisco Water Board and a significant transition period for non-conforming devices to be replaced beyond the 15 year compliance deadline.		Please see Response to Comment 4.3.
44.19	We also support the recommendation of CASQA that the State Board create a list of certified devices prior to the adoption of the proposed Trash Amendments and establish a streamlined process to approve future devices.		Please see Response to Comment 10.5.
45.1	We support the use of the narrative water quality objective as proposed, which provides a clear, concise definition from which the County of San Diego can prioritize management decisions. As proposed, the State Board has provided incentives for jurisdictions to develop innovative approaches to regulatory compliance. Furthermore, the County of San Diego supports		Comment noted. Trash is a prevalent and priority pollutant across California. The Trash Amendments propose to provide both statewide consistency and flexibility to protect the beneficial uses of surface waters from trash impairments.

Comment Letter	Comment	Recommended Language	Response
	the use of priority land uses as a means to identify implementation areas for trash control measures. Still, additional local flexibility is needed so that local resources are used wisely to solve "real" problems, not perceived problems.		
45.2	Given the lack of justification that trash is a problem in all waters, the County of San Diego proposes the following approach for the Proposed Trash Amendments: 1. Establish the proposed narrative water quality objective. 2. Establish implementation procedures for the water quality objective that are triggered when the water quality objective is exceeded or the water body is found to be impaired by trash. 3. Specify that permit conditions consistent with the implementation procedures will be established in NPDES permits only when the water quality objective has been exceeded and the NPDES permit holder has been identified as the source. We feel this approach would be consistent with the approach that is utilized to regulate all other pollutants in the State and still provide for statewide consistency in addressing trash where it is identified as being a problem. We request that the Proposed Trash Amendments be modified to reflect this approach.		Please see Responses to Comments 10.7 and 44.1.

Comment Letter	Comment	Recommended Language	Response
45.3	The County of San Diego conservatively estimates that the proposed new requirements reflected in the Proposed Trash Amendments would impose a cost burden on local taxpayers in our County of between $2.7 and $4.95M. This cost is in addition to the billions of dollars in the region in unfunded mandates created by the Bacteria TMDL provisions in the recently adopted MS4 Permit (R9-2013-0001). Other public entity co permittees statewide would incur similar unfunded costs imposed by the policy. In order to consider supporting all of the requirements set forth in the new policy, the County of San Diego urges the State Water Resources Control Board to first identify a reliable funding source to reimburse local jurisdictions for the cost of the new requirements, as mandated by the California Constitution.		Please see Responses to Comments 10.4 and 29.4.
45.4	The County of San Diego recommends adding language to the Proposed Trash Amendments indicating the permittees are in compliance with the receiving water limitations so long as they are fully implementing Track 1 or Track 2.		Please see Response to Comments 4.1 and 10.9.

Comment Letter	Comment	Recommended Language	Response
45.5	The County of San Diego recommends including language after Chapter IV.B.3.a of the ISWEBE Plan and Chapter III.L.2.a of the Ocean Plan that states: A MS4 Permittee may request that compliance requirements for trash be established through a watershed prioritization and planning process outlined in MS4 permit requirements. This prioritization process would allow for evaluation of the trash in the context of other watershed priorities and provide a mechanism for modifying or reducing the requirements for compliance in accordance with the procedures outlined in the MS4 permit and an approved watershed plan. Through this process, monitoring data could be utilized to demonstrate that trash controls are not necessary for all priority land uses.		Please see Response to Comment 11.9.
45.6	The County of San Diego recommends adding language to Chapter IV.B.3.a.(1) /IV.B.3.a.(2) of the ISWEBE Plan and Chapter III.L.2.a.(1)/Chapter III.L.2.a.(2) of the Ocean Plan, stating that permittees must address catchment areas where the priority land uses are greater than 25% of the total catchment area.	(1) Track 1: Install, operate, and maintain full capture systems in their jurisdictions for all storm drains that captures runoff in catchment areas where from one or more of the priority land uses comprise >25% of the land area in the catchment in their jurisdictions; or	Please see Response to Comment 11.4.

Comment Letter	Comment	Recommended Language	Response
		(2) Track 2: Install, operate, and maintain any combination of full capture systems, other treatment controls, institutional controls, and/or multi-benefit projects within either the jurisdiction of the MS4 permittee or within the jurisdiction of the MS4 permittee and contiguous MS4s permittees. So long as such combination achieves the same performance results as compliance under track 1 would achieve for all storm drains that captures runoff in catchment areas where from one or more of the priority land uses comprise >25% of the land area within the catchment within such jurisdiction(s).	

Comment Letter	Comment	Recommended Language	Response
45.7	Modify language in Section III.L.2. (Ocean Plan) and IV.B.3 (ISWEBE Plan) by adding Section III.L.2.e and IV.B.3.e, respectively, as follows:	A regulated MS4 may determine that areas within priority land uses do not generate trash that accumulates in state waters (or in areas adjacent to state waters) in amounts that would either adversely affect beneficial uses. or cause nuisance. In the event that the regulated MS4 identifies such areas and is able to provide data supporting the finding. the permitting authority may waive the requirement for the MS4 to comply with Chapter III.L.2.a/IV.B.3.a with respect to the identified locations. The regulated MS4 shall submit documentation of the continued condition with annual reports as required under Section III.L.6/IV.B.7.	Please see Responses to Comments 10.1 and 10.7.
45.8	Modify the Chapter reference in Part (6) of the Priority Land Uses definition as such: ...comply under Chapter IV.B.3.a.1 and Chapter IV.B.3.a.2.		Please see Response to Comment 4.4.

Comment Letter	Comment	Recommended Language	Response
45.9	Modify the Chapter reference in Part (6) of the Priority Land Uses definition as such: ...comply under Chapter III.JL.2.a.1 and Chapter III.L.2.a.2.		Comment noted. This has been revised. See Ocean Plan Amendment and Part 1 ISEWBE Plan definition for "equivalent alternate land uses" within "priority land uses".
45.10	The County of San Diego recommends adding language to the Proposed Trash Amendments requiring a permitting authority to consider revisions to the final compliance date of the Proposed Trash Amendments if new priority land uses are added during the duration of the compliance period.		Please see Response to Comment 10.8.
45.11	The County of San Diego recommends the State Water Board revise the language in the Proposed Trash Amendments (Chapter IV.B.7.b and Chapter III.L.6.b of the ISWEBE Plan and Ocean Plan, respectively) to allow for more flexibility in determining Track 2 performance and to remove the requirement for receiving water trash monitoring.		Please see Response to Comment 4.6.
45.12	The County of San Diego recommends the removal of the standard of equivalency for Track 2 from the Proposed Trash Amendments. Instead, allow permittees to propose a readily achievable and practical way that will indicate compliance with the policy for drainages without full-capture devices.		Please see Response to Comment 16.3.

Comment Letter	Comment	Recommended Language	Response
45.13	The County of San Diego recommends including language in the Proposed Trash Amendments to clarify that existing trash controls can be considered as contributing to compliance with the Trash Amendments.		Please see Responses to Comments 10.1 and 10.7.
45.14	The County of San Diego recommends that language should be included in the Proposed Trash Amendments stating that if the requirements in the Proposed Trash Amendments are being met, then no Trash TMDLs will be developed for those water bodies where the requirements are being fully implemented.		Please see Response to Comment 10.10.
45.15	For the ISWEBE Plan, all references to Chapter IV.C.3, Chapter IV.C.3.a, or Chapter IV.C.3.b should be revised to Chapter IV.B.3, Chapter IV.B.3.a., and Chapter IV.B.3.b, respectively.		See Response to Comment 11.13.
45.16	The County of San Diego recommends excluding isolated rural communities that are not contiguous to urbanized communities from the requirements of the Proposed Trash Amendments by adding a footnote to the sentence in Chapter IV.B.3.a/Chapter III.L.2.a of the ISWEBE Plan and Ocean Plan, respectively stating:	Priority Land Uses contained within isolated rural communities are exempt from the requirements of Chapter IV.B.3.a.(1) and (2)/Chapter III.L.2.a.(1) and (2).	Trash is a priority pollutant across California impairing the beneficial uses of surface waters. This is not limited by community type, e.g., rural or urban. The State Water Board agrees that rural communities might contribute less trash than urban communities due to population size; however, the State Water Board does not consider the recommended language to be necessary. The implementation provisions of the proposed Trash Amendments are aimed to focus trash controls on five priority land uses. A rural community covered by a MS4 permit would comply with the prohibition of discharge via Track 1 or Track 2 to the extent that there are priority land uses in its jurisdiction.

Comment Letter	Comment	Recommended Language	Response
45.17	Alternatively, a pathway should be included that allows these isolated communities to opt out with local Regional Board approval. This could be accomplished by modifying language in Section IV.B.3 (ISWEBE Plan) and III.L.2. (Ocean Plan) by adding Section IV.B.3.e and III.L.2.e, respectively, as follows:	e. A regulated MS4 may determine that areas within priority land uses do not generate trash that accumulates in state waters (or in areas adjacent to state waters) in amounts that would either adversely affect beneficial uses. or cause nuisance. In the event that the regulated MS4 identifies such areas and is able to provide data supporting the finding. the permitting authority may waive the requirement for the MS4 to comply with Chapter IV.B.3.a/III.L.2.a with respect to the identified locations. The regulated MS4 shall submit documentation of the continued condition with annual reports as required under Section IV.B. 7/III.L.6.	Please see Responses to Comments 10.1 and 10.7.

Comment Letter	Comment	Recommended Language	Response
45.18	The County of San Diego recommends clarifying that the discharge prohibition is not applicable to all industrial dischargers by modifying Chapter IV.B.3.c/Chapter III.L.2.c of the ISWEBE Plan and Ocean Plan as follows:	Dischargers that are subject to NPDES permits for discharges of storm water associated with industrial activity (including construction activity) that relate to the manufacture of preproduction plastics. transporters of preproduction plastics. And manufacturers that use preproduction plastics in the manufacture of other products shall be required.	Please see Response to Comment 12.3.
46.1	The county is in full support of the comments provided by the California Stormwater Quality Association (CASQA) in their August 2014 letter and we strongly encourage the State Water Board to incorporate their suggestions into the final version of the Trash Amendments.		Comment noted. Please see Responses to Comments 10.1-10.12.
46.2	Concerned about our ability to fund installation of trash capture devices with the ten year timeframe. Request that the State Water Board develop at funding source for permittees.		Please see Response to Comment 10.4.

Comment Letter	Comment	Recommended Language	Response
47.1	The County does encourage the SWRCB to conduct a thorough CEQA review that evaluates the environmental justice aspects of the trash amendments.		California Environmental Quality Act (CEQA), the State Water Board's certified regulatory program, and regulations for implementing CEQA do not require an analysis of how the State Water Board's proposed project would create environmental impacts that are disproportionate to low income or minority populations (often referred to as an "environmental justice analysis"). However, the State Water Board does consider these issues where there is information on the record that there may be environmental impacts that disproportionately affect environmental justice communities. The project would apply to "priority land uses" throughout California, applicable without regard to income levels or population diversity, and there is no information on the record to support that the Trash Amendments would have a disproportionate effect on environmental justice communities.
47.2	The County encourages the SWRCB to support and enforce source controls statewide through existing NPDES permits, and to support statewide legislation or regulation of recognized problem materials such as cigarettes, single-use plastic bags, and Styrofoam food packaging. We feel that these types of source controls would be far more effective and efficient than requiring local agencies to construct and maintain expensive treatment best management practices (BMPs).		Please see Response to Comment 4.5.

Comment Letter	Comment	Recommended Language	Response
47.3	The County is also concerned about the effect the proposed trash amendments may have on rural communities. Rural towns have commercial areas that would fall under the proposed trash amendments. These rural communities have limited resources available to fund programs, and there is not a reasonable return on investment for these small communities to implement extensive trash controls. Based on their local planning processes, addressing issues such as the provision of safe and affordable drinking water or other local priorities may be the best use of their limited resources. The County therefore recommends that the State exempt rural areas from the trash amendments that are not directly contiguous to urbanized areas.		Please see Response to Comment 45.16.
47.4	The draft amendments provide for two tracks for achieving compliance. However, Track 1 appears to be the only viable option, as there is no effective means by which a community could verify that any selected combination of controls would achieve the same performance as full capture. Any community adopting Track 2 would be placing itself at risk of subjective compliance actions by the State or at risk of third party lawsuits.		Please see Response to Comment 16.3.

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	Recommend eliminating the monitoring requirement for Track 2, and substitute an annual plan demonstrating compliance with a State-approved implementation plan.		
47.5	The draft trash amendment claims that this change is necessary to promote consistency throughout the state.		Comment noted. With 73 water bodies on California's 2008-2010 section 303(d) list of impaired waters for trash or debris, statewide consistency is necessary. The proposed Trash Amendments will provide statewide constituency to protect aquatic life and public health beneficial uses, and reduce environmental issues associated with trash.
47.6	The existing NPDES permits already contain provisions for the control of trash.		Existing NPDES permits do have provisions for the control of trash; however, trash continues to be discharged impairing the beneficial uses of California's surface waters.
47.7	The draft amendments would require full capture systems, which are to be designed to capture all trash 5mm and larger in size. However we have seen no documentation verifying that this goal is achievable nor does this goal truly address the issue of micro-debris.		The Trash Amendments propose a dual alternative compliance approach or 'tracks' allowing for the wide range of trash control methods to be implemented by a permittee to reduce trash and comply with the prohibition of discharge for trash. Full capture systems are just one of the reasonably foreseeable means of compliance. The Trash Amendments address micro-debris in two main ways. First, by capturing and stopping the transport of trash before entering the storm drain systems, minimizing the amount of breakdown that occurs. Second, the Trash Amendments propose a prohibition of discharge for preproduction plastics to waters of the state. Together these will reduce the amount of micro-debris in the surface waters of California. Please see Response to Comment 6.13. (See Final Staff Report Section 4.1 and 4.4.)

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47.8	The staff report referred frequently to the findings of the National Resources Defense Council (NRDC) Report prepared by Kier Associates. However, the cost estimates provided in Appendix C of the staff report do not accurately reflect the findings of that report.		The State Water Board used the findings in the NRDC study to establish a baseline of current cost (before the implementation of the Trash Amendments), so the incremental cost from current expenditures could be determined. The NRDC study identified that the current average cost per capita per year was $10.71. The Economic Considerations analysis estimates that between $2.93 and $7.77 more per resident might need to be spent each year for the next ten years to implement the Trash Amendments. (See Final Staff Report Appendix C.)
47.9	Not all the communities in the NRDC survey have fully integrated the BMPs necessary to satisfy the proposed trash amendment		The NRDC study did not include every community regulated under Municipal Stormwater Program. The data from the NRDC study was used to establish a baseline of current expenditures based on population size of each community. The State Water Board then compared the average current expenditures with the incremental expenditures that would be necessary to comply with the proposed Trash Amendments. The State Water Board took into account those communities that are already implementing actions to comply and also those that would need to take necessary actions to comply with the proposed Trash Amendments.
47.10	Communities in San Diego and Los Angeles areas that are currently implementing trash BMPs spend from $23.42 to $71.22 per capita annually		The State Water Board used the information from the Los Angeles Region as a baseline for the level of expenditures required to comply with the proposed Trash Amendments. The cost information was adjusted based on the unique characteristics in the Los Angeles Region regarding population density and priority land uses areas. Table 7 in Appendix C (page C-18) shows that the cost on trash controls in the Los Angeles Region ranges, on average, from $7.79 to $29.84 per capita per year.
47.11	According to the NRDC report, the average per capita spending within small communities with fewer than 15,000 citizens was nearly double the per capita spending within large communities.		The State Water Board agrees. In the Economic Considerations section of the Draft Staff Report, the average per capita cost for communities outside Los Angeles Region (see table 6 page C-17) was separated and compared with the average per capita cost for communities within the Los Angeles Region (see Table 7 page C-18).

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47.12	The NRDC report also noted that the actual total cost is certainly higher than reported, as the study did not assess expenses incurred by counties or state agencies, nor did it include costs for monitoring and reporting.		Comment noted. On page Appendix C-10, a set of limitations and uncertainties of the analysis that were estimated using two separate methods reaching different (but similar) results were included in the Economic Considerations.
47.13	The staff report does not take into account that costs of compliance will not be spread across the entire population of a rural, Phase II community. Only drainage districts that have high-density areas will have to retrofit their storm drain systems, so only those affected property owners would bear the expense of a retrofit.		The economic analysis utilized two basic methods to estimate the incremental cost of compliance for permitted storm water discharge: the first method was based on cost of compliance per capita, and the second method was based on land cover. At statewide view, the economic analysis did not cover the specifics of each drainage district. Overall, the economic analysis estimated the incremental annual cost to comply with the requirements of the proposed Trash Amendments ranged from $4 to $10.67 per year per capita for MS4 Phase I NPDES permittees and from $7.77 to $7.91 per year per capita for smaller communities regulated under MS4 Phase II permits.
47.14	The staff report does not discuss how communities are supposed to fund the mandatory retrofit. Phase II communities would have a difficult time raising funds under existing Proposition 218 requirements. Additionally, the draft trash amendments do not consider the financial limitations of economically challenged communities.		The State Water Board disagrees that the Trash Amendments require mandatory retrofits. Please see Response to Comment 10.4.
47.15	Retrofitting existing high trash volume areas would be technically infeasible in many developed areas due to localized flooding issues: a. Roadway storm drain inlets are built to accommodate design flows without flooding the adjacent		The proposed Trash Amendments do not specify the need for retrofitting. The dual alternative compliance approach or 'tracks' allow for a wide range of trash control methods to be implemented by a permittee to reduce trash and comply with the prohibition of discharge of trash. Additionally, with proper operation and maintenance, full capture systems should not result in localized flooding.

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	roadways. The inexpensive retrofit options of installing trash racks, screens, or inserts would reduce the flow capacity of the storm drain system, leading to localized flooding and a threat to public safety; b. Existing, fully developed commercial or high-density residential neighborhoods will not have sufficient open space to install infiltration basins, detention basins, or trash nets.		
47.16	Some BMPs, such as the Gross Solids Removal Devices, have high vandalism rates that are not mentioned in the staff report.		The potential vandalism of full capture systems is discussed in the Aesthetics Section of Appendix B of the proposed Final Staff Report on pages B-2-4.
47.17	The County also recommends that the SWRCB investigate statewide funding sources for water quality controls. For example, pursuant to the California Health and Safety Code Section 25299.41, the state charges a special maintenance fee on underground storage tanks; this fee is due to sunset within the next year. The SWRCB should consider repurposing this special tax for purpose of providing financial assistance to communities for installation of permanent BMPs.		Comment noted. The State Water Board appreciates this suggestion; however, repurposing special maintenance fee on underground storage tanks is outside of the scope of these Trash Amendments.
48.1	The Dart Container Corporation of California's letter includes a number of reasons why they oppose regulatory source controls, specifically product bans. These objections include generally include		Please see General Response to Comment Letter 1 and Comment 1.3. Commenter's concerns relate to regulatory source controls and time extensions which have been removed from the proposed Final Trash Amendments. (Ocean Plan Amendment at removed III.L.5; Part I ISWEBE at removed IV.A.6) Based on the revisions and discussions in the

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	the following • Product bans are ineffective at reducing trash • Foam is environmentally and economically beneficial • The Trash Amendments encourage and rely on product bans. • The Trash Amendments fail to account for the substitution effect. • The Trash Amendments fail to account for the potential unintended environmental and economic consequences of bans. • Product bans violate laws such as equal protection and due process, the Clean Water Act and Porter Cologne. • The Trash Amendments exceed the state board's authority under the Water Code.		referenced responses, commenter's underlying arguments are not applicable to the Trash Amendments which will be considered for adoption by the State Water Board and they will not be responded to in detail.
48.2	Violates the California Environmental Quality Act. Bans can have significant environmental impacts. Yet the staff report fails to analyze these impacts, alternatives to Track 2 that do not encourage product bans, or mitigation measures.		Please see General Response to Comment Letter 1 and Responses to Comments 1.1 and 1.3.
48.3	Violates the Clean Water Act. By allowing MS4 permittees to rely on bans of polystyrene foam and other materials,, the trash amendments violate the "maximum extent practicable" standard that the Clean		Please see Responses to Comments 1.1, 1.2, 1.3, General Response to Comment Letter 1, 4.6, and 29.4. Commenter's primary objection concerning the application of the "maximum extent practicable standard" relates to product

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	Water Act imposes on MS4 permittees. The Trash Amendment's establishment of a new water quality objective for trash violates the antidegradation policy because basin plans contain water quality objectives that prohibit floatable, suspendable, and settleable material. To the extent that the trash amendments would allow such materials to enter the receiving waters as a result of ineffective regulatory source controls that the trash amendments encourage, the amendments relax the existing water quality objectives. The trash amendments also fail to require adequate monitoring of the effectiveness of Track 2.		bans. Based on discussion contained in the above-referenced responses to comments, commenter's underlying arguments are not applicable to the Trash Amendments which will be considered for adoption by the Board and they will not be responded to in detail. But see also Response to Comment 29.4. The Trash Amendments' establishment of a statewide narrative water quality objective does not violate the State or federal antidegradation policy. A water quality standards revision must comply with the state and federal antidegradation policy. The proposed Trash Amendments establish a specific statewide narrative water quality objective for "trash." The proposed statewide objective for trash is: "Trash shall not be present in ocean waters, along shorelines or adjacent areas in amounts that adversely affect beneficial uses or cause nuisance" and "Trash shall not be present in inland surface waters, enclosed bays, estuaries, and along shorelines or adjacent areas in amounts that adversely affect beneficial uses or cause nuisance." (Ocean Plan Amendment at II.C.5; Part I ISWEBE at III.A.) "Trash" is defined as "improperly discarded solid material from any production, manufacturing, or processing operation including, but not limited to, products, product packaging, or containers constructed of plastic, steel, aluminum, glass, paper, or other synthetic or natural materials." (Ocean Plan Amendment and Part I ISWEBE definition of "trash.") The proposed statewide objective for trash supplements the existing narrative water quality objectives pertaining to "floating materials," "suspended material," and "settleable material" and does not replace them. Nowhere do the Trash Amendments provide that the water quality objective for trash substitutes or takes the place of existing water quality objectives established for "floating materials," "suspended material," and "settleable material." Additionally, the basin plans for the North Coast, San Francisco Bay, Central Coast, Los Angeles, Central Valley

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			(Sacramento and San Joaquin Basins and Tulare Lake Basin), Santa Ana, Colorado River, Lahanton, San Diego Regional Water Boards, virtually all prohibit the presence of "floating materials," "suspended material," and "settleable material" in concentrations that would adversely affect beneficial uses or cause nuisance. The statewide trash objective utilizes the same standard. In any case, because the existing and proposed objectives are distinct, the Water Board's implementation and enforcement of the prohibition of discharge of trash to implement the statewide trash objective will not relax the existing water quality objectives pertaining to "floating materials," "suspended material," and "settleable material." The existing objectives for pertaining to "floating materials," "suspended material," and "settleable material" remain in effect. The Trash Amendments require adequate monitoring. The Amendments (Ocean Plan Amendment at III.L.5.b; Part I ISWEBE at IV.A.4.b) requires that permittees implementing Track 2 shall "develop and implement monitoring plans that demonstrate the effectiveness of the full capture systems, multi-benefit projects, other treatment controls, and/or institutional controls, and compliance with full capture system equivalency". In addition, the proposed Final Trash Amendments include additional language to elaborate on how a municipality could demonstrate full capture system equivalency, including two examples. (See Ocean Plan Amendments and Part I ISWEBE definition for "full capture system equivalency.")
48.4	Violates the Water Code section 13241 because the staff report does not consider the costs of regulatory source controls such as product bans, which will place substantial economic burden on local business, individuals, and government agencies (including schools).		Please see General Response to Comment Letter 1 and Response to Comment 1.3. Commenter's concerns relate to regulatory source controls (product bans) and time extensions which have been removed from the proposed Final Trash Amendments. (Ocean Plan Amendment at III.L.5; Part I ISWEBE at IV.A.6.) Based on the revisions and discussions in the referenced responses, commenter's underlying arguments are not applicable to the Trash Amendments which will be considered for adoption by the Board and they will not be

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	Violates Water Code section 13242 because Bans of polystyrene foam are not "appropriate" and "necessary" and does not meet the requirement for effective compliance monitoring.		responded to in detail. Regarding Water Code Section 13241, that statute requires the Water Board to consider a number of factors when establishing a water quality objective, including "economic considerations." The Final Staff Report's discussion fulfills the requirements of section 13241. (See Final Staff Report at Section 9.) Specifically to the commenter's footnote 52 in their letter, which refers to footnote 9, which contains reference to EXHIBITS 5 and 6 of the commenter letter, the State Water Board considered the analysis of the cost of banning polystyrene food and beverage containers in California in regards to this comment. However, under state law the State Water Board does not conduct cost-benefit analysis and EXHIBITS 5 and 6 specifically relate to regulatory source controls (product bans) and time extensions which have been removed from the proposed Final Trash Amendments. As these elements have been removed, modifying the Economic Analysis in Appendix C is unnecessary. Regarding Commenter's Water Code Section 13242 objection, commenter asserts product bans are not necessary or appropriate and therefore violate the statute. Product bans are no longer a part of the Trash Amendments and are beyond the scope of the State Water Board's consideration of adopting same.
48.5	The proposed trash amendments improperly assert product regulatory authority. The State Board's mandate to protect water quality does not include general authority to regulate products or individual consumer choices or individual actions before a discharge occurs or before a particular product becomes		Regulatory source controls have been omitted from the final proposed Trash Amendments. Please see response to General Response to Comment Letter 1 and Responses to Comments 1.3 and 48.1. Additionally, with the Trash Amendments' continued inclusion of institutional controls, which include "ordinances," the State Water Board is not regulating individual consumer choices or

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	a "waste." By encouraging bans, the State Board is exceeding its authority.		individual actions. Each permittee may elect which particular type of trash nonstructural treatments controls to implement to control trash within its jurisdiction. (Ocean Plan Amendment at III.L.2; Part I ISWEBE at IV.A.3.) Institutional source controls may include street sweeping, sidewalk trash bins, collection of the trash, antilitter educational and outreach programs, and ordinances. The State Water Board is properly regulating the discharge of pollutants through the establishment of the prohibition and implementation elements related to the prohibition of trash. (Ocean Plan Amendment at III.I.6 and III.L.1-3; Part I ISWEBE at IV.A.1-4.)
48.6	Track 2 should explicitly disallow MS4 permittees from relying on measures that the data show are ineffective to reduce trash in the receiving waters, including polystyrene foam bans.		Please see response to General Response to Comment Letter 1 and Comment 1.3. Commenter's objection relates to product bans and, as explained in the referenced responses to comments, product bans are no longer a component of the Trash Amendments which will be considered for adoption by the Board and they will not be responded to in detail.
48.7	Track 2 should have a certification process for non-structural best management practices. Before MS4 permittees rely on such BMPs, the State Water Board should certify them as effective, based on substantial evidence developed in a public process with opportunity for comment.		The State Water Board agrees that both treatment and institutional controls must be effective at controlling and reducing trash. However, the State Water Board is only undertaking a certification process for full capture systems. Additionally, a permittee that elects to comply with the Trash Amendments under Track 2 are required to submit an implementation plan which must describe the combination of controls selected by the permittee and the rationale for the selection, how the combination of controls is designed to achieve full capture system equivalency, and how full capture system equivalency will be demonstrated. (Ocean Plan Amendment at III.L.4.a.1; Part I ISWEBE at IV.A.5.a.1.)

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48.8	Track 2 should be revised to include adequate monitoring to determine that such non-structural BMPs are effective and that trash is being reduced in the receiving waters.		See Responses to Comments 6.2 and 48.7. Additionally, monitoring for Track 2 controls focuses on accessing the effectiveness of trash controls and compliance with full capture system equivalency. Therefore, the permittee implementing the institutional controls outlined in the implementation plan must demonstrate the plan being implemented, or the total combination of controls, is effective at achieving full capture system equivalency. The State Water Board is supportive of the Proposition 84 Grant funded Tracking California's Trash Project, as State Water Board staff are on the technical advisory group, to focus on monitoring the effectiveness of institutional controls. The State Water Board sees this project as providing institutional trash monitoring guidance to support the flexibility provided in the monitoring and reporting provisions of the Trash Amendments.
48.9	The staff report fails to provide sufficient information regarding the cost effectiveness of any of the institutional controls it recommends.		Please see Response to Comment 29.4. Additionally, regarding Water Code Section 13241, that statute requires the Water Board to consider of a number of factors when establishing a water quality objective, including "economic considerations." Such consideration does not require consideration of cost effectiveness or cost benefit analysis concerning reasonably foreseeable methods of compliance. The Final Staff Report's discussion fulfills the requirements of Section 13241. (See Final Staff Report at Section 9.) In any case, the Economic Considerations in Appendix C provides a summary overview of the costs associated with

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			reasonably foreseeable means of compliance that permittees may select to be in compliance with the Trash Amendments. The economic analysis was conducted at the macro level to assess the estimated overall impact of the Trash Amendments and provides gross average estimates of the cost per capita and the cost per acre based on specific cost assumptions. The economic analysis set forth the costs associated to implement Track 1, to which each permittee subject to the dual approach may implement, complying with Track 2 requires the permittee to develop an approach or approaches to demonstrate full capture system equivalency (e.g., the trash load that would be reduced if full capture systems were installed, operated, and maintained for all storm drains that capture runoff from the relevant areas of land). Beyond this general assertion in the introductory text, the commenter has not elaborated on what part of the economic analysis is deficient, except to note that the costs of implementing a product ban were not considered. As noted in the General Response to Comment Letter 1 and the response to comment 1.3, product bans, and associated incentives have been removed from the amended policy removing any need to consider those costs.
49.1	The Port of Stockton is already doing many things to address stormwater quality, including trash reduction. The Port currently spends approximately $900,000 annually on its stormwater quality and surface water protection programs. The Port has no additional funds to spend on addressing trash and no additional financial resources are warranted since, because of the controls and programs already in place, trash is not a problem at the Port. If these Trash Amendments are adopted, the Port may have to reduce its efforts in other areas in order to focus on		Trash is a priority pollutant across California. While the State Water Board is supportive of the Port of Stockton's storm water quality and surface water protection programs, these programs should include trash as a priority pollutant. The State Water Board disagrees that efforts will need to be reduced from other programs in order to address the discharge of trash. There are numerous treatment and institutional controls for trash that also address other pollutants.

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	these unneeded requirements.		
49.2	The Trash Amendments will unnecessarily re-prioritize where the Port and other MS4 and industries are forced to focus their limited financial resources. While trash can be a severe localized problem, particularly at beaches that drain large watersheds, trash is not a problem for 98% of the state. Further, there are no waters in the Central Valley Region listed as impaired for trash. The Port believes that limited public dollars should not be focused on an issue that is not a problem everywhere. Where problems do not exist, the policy or statewide plan cannot be "deemed essential by the State Board for water quality control." Water Code §131452(c).		Please see Responses to Comments 10.6, 10.7, and 44.1.
49.3	Statewide consistency, while potentially a laudable goal, is not how our state water quality laws were envisioned. Instead, California was split into 9 distinct geographical regions, each of which may have differing water quality issues and priorities. The State Water Board should respect those differences and not superimpose "priorities," especially costly and unnecessary ones that usurp local watershed programs' priorities. Such an action by the State Water Board would be contrary to Water Code Section		Please see Responses to Comments 10.7 and 44.1.

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	132250), which encourages "coordinated regional planning and action for water quality control." (Emphasis added.) Furthermore, the proposed Trash Amendments, as drafted, fail to ensure statewide consistency because certain areas (parts of Los Angeles area under Trash TMDLs and combined sewer systems) are excluded from coverage. (See e.g., Trash Amendments, Draft Staff Report at pp. C-17, C-23, C-50.) Recommendation: For these reasons, the plan should be modified to either adopt the "No Project" alternative and continue to allow regional control over regulating trash, or to narrow the scope to just adopting a consistent statewide narrative water quality objective that would be implemented with current permits and with TMDLs, as needed, when impairments are demonstrated to exist.		
49.4	Little to no evidence was presented in the Trash Amendments that trash from construction and industrial sites represents more than a fraction of a percent of the trash statewide. Moreover, construction sites are mostly temporary and individually do not qualify as a long-term source of trash, even if trash were to leave a site. The Port has many tenants covered by the Construction and Industrial General Storm Water		Dischargers enrolled under the Construction General Permit (CGP) are already required to comply with a prohibition to discharge debris and trash from construction sites (State Board Action 2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ. Prohibition III. D. page 21). The Trash Amendments are not intended to require additional trash control provisions for CGP permittees. The State Water Board believes that trash is a controllable pollutant for dischargers enrolled under the Industrial General Permit. Please see Responses to Comments 5.1, 5.2, and 6.4.

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	Permits and does not want to lose more tenants to another state that does not impose such stringent and seemingly unnecessary requirements on their businesses. Many of the Port's tenants have already suffered from citizen suits, trying to enforce the requirements of the industrial general permit. Adding explicit trash requirements may increase these suits where trash is found that could be alleged to have left that property. In addition, many of these sites do not have drain inlets, and cannot comply with the full capture track, thereby forcing them into additional work and monitoring when, again, there is no indication of a trash issue. Although the cost estimates for compliance for these sites seems relatively small (e.g., less than $4000 per facility)(Draft Staff Report at C-48), those cost estimates may not be accurate and many small companies may not be able to absorb this additional cost on top of the cost of all of the new requirements under the State Water Board's new industrial general permit set to be effective in July of2015. Recommendation: For these reasons, the Port urges, at the very least, the adoption of an option not including industrial and construction permittees, or any other permittee that can demonstrate no trash		

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	problem exists.		
49.5	The Trash Amendments seemed to lack information on the actual cost, impacts, and effectiveness of similar programs. The Los Angeles area trash controls under the various TMDLs have been in place for over a decade. The Port was disappointed not to see a clear analysis of the actual cost and impacts (both environmental and economic) of these programs, as compared to the estimates provided in the TMDLs, to determine if the initial estimates were accurate. In addition, there should have been some analysis of the effectiveness of the programs. For the hundreds of millions of dollars expended, has trash been completely eradicated from those areas, reduced slightly, or is no progress really noticeable? These are the types of analyses that need to be conducted prior to adopting another duplicative program. These analyses would also improve the impacts analysis presented as required under the California Environmental Quality Act ("CEQA") since the currently included analyses do not seem to capture all possible impacts, or their extent.		Under the requirements of Water Code sections 13170 and 13241, subdivision (d) the State Water Board is required to consider economics when establishing water quality objectives. Appendix C of the Draft Staff Report includes an extensive economic analysis that provides a consideration of potential costs for a suite of reasonably foreseeable measures to comply with the proposed Trash Amendments. This economic analysis utilized two basic methods to estimate the incremental cost of compliance for permitted storm water discharges: the first method was based on cost of compliance per capita, and the second method was based on land cover. There is a comparison of the cost for trash and debris TMDLs in the Los Angeles and the proposed final Trash Amendments on pages C19-21 of the proposed final Staff Report. For additional discussion on Water Code section 13241, please see Response to Comment 29.4.
49.6	The proposed Trash Amendment recommends the installation and operation of full capture devices that capture all debris (including natural		The State Water Board agrees that flooding is a potential hazard when filters or screens become blocked by trash and debris preventing the discharge of storm water into the drain. This would be of particular concern in areas susceptible to high

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	woody and leafy debris) down to a size of 5 mm or greater. (Draft Staff Report at p. 13, fn. 5.) Because these devices do not differentiate between the type of debris captured, they can easily become blocked by leaves and other vegetation blown off of trees during the Central Valley's strong winter storms, notwithstanding efforts to clean the inlets prior to storm events. This blockage will back up water that would otherwise go into the drainage system, and will cause localized flooding that could adversely impact Port or tenant buildings and infrastructure, and could impose financial risk to the Port for causing the flooding if claims are made for any damage. The Trash Amendments give this issue short shrift (Draft Staff Report at p.135) and conclude that the full capture devices should just be designed with an "automatic release mechanisms or retractable screens that allow flow-through during wet-weather," an "overflow/bypass structure," or to "allow for bypass when storm events exceed the design capacity." *(Jd.* at p. 136.) These bypasses thwart the entire reason for the devices in the first place. If the device is merely going to bypass and allow trash and other debris to pass through during wet weather events, that raises the question of the effectiveness of and		leaf-litter rates. This potential impact can be diminished through the use of inserts that are designed with automatic release mechanisms or retractable screens that allow flow-through during wet-weather, and by performing regular maintenance to prevent the buildup of trash and debris. The exposure of people and property to flooding hazards after mitigation is considered less than significant. The State Water Board recognizes that a full capture system may not be able to capture trash as well as when storm events exceed the design capacity. However, with proper and regular maintenance, full capture systems are highly efficient at trapping all particles that are 5 mm or greater.

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	need for this costly approach.		
50.1	In the Supporting Draft Report, Page 1; First Paragraph; second sentence: Preproduction plastic pellets are an integral part of the plastic product production process; and therefore, are not a waste and should not be defined as trash. To the extent that the State Water Board needs to regulate preproduction plastics, that regulation should occur through the Industrial General Permit (IGP) (including but not limited to expanding the IGP to include all industries that use plastics. But, it needs to be done separately from trash-related Plan Amendments. Recommendation: Suggest removing all references to preproduction plastic pellets from the trash amendments and creating a separately regulatory scheme therefore.		The Trash Amendments do not address the use of preproduction plastics in a production process, but only the discharge of preproduction plastics in to waters of the state. (Ocean Plan Amendment at III.I.6.e; Part I ISWEBE at IV.A.2.e.) At the point of discharge, the preproduction plastics become a waste subject to control under Porter Cologne. Regardless of the proposed Trash Amendments, all facilities with the potential to discharge preproduction plastics must still comply with permit requirements issued pursuant to Water Code § 13367(a) and the best management practices requirements in the Industrial Storm Water General Permit. The Industrial General Permit is the principal means of addressing the discharge of preproduction plastics and has made suitable clarifications in the section on prohibitions.
50.2	In the Supporting Draft Report, Page 1, first paragraph, third sentence: Improper sentence structure or incorrect premise. Appliances (as a sentence two specifically listed form of 'trash') may end in a waterway but not 'frequently' nor ever via the method stated. Recommendation: Suggest either removing appliances from the specifically listed types of trash or creating another sentence that recognizes that there are paths		The sentences flagged by the commenter says, " trash discarded on land frequently ends up in waterways and the ocean…" This sentence does not say or imply that appliances are washed into gutters and storm drains. Nonetheless, while large appliances might not be readily transported via storm drain, they are part of the mixture of trash found in the water bodies. No change is needed.

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	not associated with storm drains by which trash enters waterways.		
50.3	In the Supporting Draft Report, page 4, second full-paragraph, final sentence: Based on the statement made by this sentence, 'where runoff and storm water transport trash into these water ...', it is not apparent that Water Board Authority extends to appliances. Recommendation: Suggest removing appliances from the specifically listed forms of trash.		While large appliances might not be readily transported via storm drain, they are part of the mixture of trash found in the water bodies. In addition, the point of the sentence is to clarify that it is at the point of discharge into waters of the state that trash becomes subject to the Water Boards jurisdiction. Appliances discharged into waters of the state would constitute a waste discharge subject to the Water Board's authority. That some wastes are discharged through storm drains (e.g., point source) or some other mechanism (e.g. non-point source) does not affect the Board's jurisdiction. No changes to the document are needed.
50.4	In the Supporting Draft Report, Page 6, Second Paragraph: Asserts that trash, 'jeopardizes public health and safety' and poses 'harm and hindrance ..'Concur with the latter but, 'public health and safety' is a legal concept. As such, an assertion that it is in jeopardy needs a citation that demonstrates the magnitude of that jeopardy.		Trash impacts public health via a number of pathways that are discussed (with citations) in Staff Report Section 1.4 and Appendix A.
50.5	In the Supporting Draft Report, Page 6; numeric bullets: Please note that none of the bullets describe a trash related mechanism applicable to a product line component (aka: preproduction plastic pellets). Suggest that preproduction plastic pellets be removed from the definition of trash.		Preproduction plastics are covered under bullet 2. If preproduction plastics are improperly disposed, then they are considered trash that may be delivered by storm events via the storm drain system to receiving waters. Preproduction plastics will not be removed from the definition of trash.

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50.6	In the Supporting Draft Report, Page 6; Final Paragraph; second sentence: 'The main transport pathway of trash to receiving water bodies is through storm water transport.' This statement conflicts with the initial statement of Section 2.4.1 wherein other transport mechanisms also are recognized as being significant. This statement needs at least to be modified for internal consistency and to cite the references upon which it relies. Alternatively, it can be removed. CHECK APPENDIX A	Suggest adding 'select and implement either' into the last sentence -7 ' ...may require the MS4 to select and implement either Track 1 or Track 2 ...'	Both sections referenced by the commenter state that trash is predominantly transported through storm water transport. That other significant mechanisms also exist does not make this assertion invalid. In addition, the Water Board cannot divine what the commenter intends by "CHECK APPENDIX A." No change will be made to the Staff Report.
50.7	In the Supporting Draft Report, Page 11; Table 1.: An IGP facility cannot use a full capture device as later defined (1 00% to 5mm) to capture preproduction plastic pellets (-1 mm). Recommendation: Suggest regulating preproduction plastic pellets as a component of production not as trash.		If preproduction plastics are improperly disposed, then they are considered trash regardless of size. As noted in the footnote to table 1, full trash capture systems would only be allowed if a facility demonstrated an inability to comply with the outright prohibition contained within the applicable NPDES permit regulating the industrial or construction facility. (See also Ocean Plan Amendment at III.L.2.c; Part I ISWEBE at IV.A.3.c.) Additionally, please see response to Comment 42.10. No change will be made to the Staff Report.
50.8	In the Supporting Draft Report, Page 11; Section 2.2 Water Quality Objective: The Trash Amendments recognize that MS4 transport of trash is but one of multiple significant transport mechanisms (see Section 2.4.1). Therefore, compliance with the objective ('no trash accumulation ...') via implementation through MS4 Permits cannot be obtained. Note:		There are several pathways for the transport of trash to California's surface waters. The transport of trash via storm water is a large contributor; however, the State Water Board recognizes that it is not the sole contributor of trash. For this reason, the Trash Amendments are applicable to NPDES permits, WDRs, and Waivers of WDRs. The State Water Board understands the confusion in the beneficial uses table and have removed the "Any amount of trash impacts this beneficial use" from Table 14 of the proposed Final Staff Report.

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	The objective nomenclature modifies the 'no trash accumulation' by stating, 'in amounts that would either adversely affect beneficial uses, or cause nuisance.' However, Appendix A, Table 14 defines the amount of trash necessary to adversely affect beneficial uses and states, 'Any amount of trash impacts this beneficial use' for both the Water Contact Recreation and Non-Contact Water Recreation beneficial uses.		
50.9	In the Supporting Draft Report, Page 11, Section 2.2 Water Quality Objective: Need to define 'adjacent to'. Perhaps use normal high water line.		The meaning of “adjacent” is self-evident insofar as it is commonly understood to mean “next to” or “adjoining” to the water body. The term’s meaning is further informed by the context in which it appears in the narrative water quality objective as being present in amounts that adversely affect beneficial uses or cause nuisance. Further defining is not needed.
50.10	In the Supporting Draft Report, Page 12, Section 2.4.1 Permitted Storm Water Discharges; first sentence: see comment 7.		Please see response to Comment 50.7. No change will be made to the staff report.
50.11	In the Supporting Draft Report, Page 13, first full Paragraph, third sentence: 'MS4 storm water permittees that opt...plans to their respective Water Board.' Recommendation: For consistency with the List of Abbreviations and to avoid confusion, correct to either, ' .. Regional Water Board.' or 'Water Boards.'		The “Water Board” refers to either the State Water Board or the respective regional water board. The State Water Board and nine regional water boards are collectively known as the Water Boards. This abbreviation is included in the list of abbreviations in the proposed Final Staff Report. Additionally, the Water Board is synonymous to the permitting authority, which refers to either the State Water Board or regional water board, whichever issues the permit. No change will be made to the Staff Report.

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50.12	In the Supporting Draft Report, Page 13, Track Discussion: As discussed during the Sacramento stakeholder meeting, while it is recognized that quality Track 2 Plans need to be submitted, the compliance clock runs regardless of Regional Board approval. Suggest that Water Board be corrected Water Boards (see Comment 11) and the trash amendments either stipulate approval after 6-months or an appeal process involving the State Water Board.		Given that the implementation plans are due to the permitting authority within 18 months of the receipt of the Water Code section 13267 or section 13383 order or from the effective date of the implementing permit, and full compliance is not required for ten years thereafter, the State Water Board does not share commenter's concern about delays by the permitting authority in approving the implementation plans. (Ocean Plan Amendment at III.L.4.a; Part I ISWEBE at IV.A.5.a.)
50.13	In the Supporting Draft Report, Page 13; Last Paragraph: Needs clarification or deletion. The list provided (in the second sentence) includes only geographic areas controlled by entities that have the ability to install and maintain full capture devices within the drop inlets on their property. This concept is also true for Non-Traditional MS4s. Therefore, if one of the Water Boards determines that a geographic area is impairing water quality due to a lack of compliance with the trash amendments that Water Board (State or Regional) can Order the owner of that geographic area to comply.		Jurisdictions of Non-Traditional MS4s likely do not have priority land uses. For these permittees, a different set of land use types may require trash controls at the discretion of the permitting authority. Additionally, land uses or locations outside of the priority land uses may generate substantial amounts of trash. For those areas, the permitting authority has discretion to determine if such areas require trash controls. (Ocean Plan Amendment at III.L.2.d; Part 1 ISWEBE at IV.A.3.d.) Additionally, please see Response to Comment 6.6.
50.14	In the Supporting Draft Report, Page 13, last paragraph, last sentence: see Comment 11 regarding 'Water Board'.		Please see response to Comment 50.11.

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50.15	In the Supporting Draft Report, Page 13, last paragraph, last sentence: (Comment 13 notwithstanding) If the trash amendments allows one of the Water Boards to require an MS4 to adopt a Track on behalf of/instead of the responsible entity, the trash amendment must also dictate the need for financial restitution by that entity to the MS4 for implementation, maintenance etc. of the required Track.		The commenter appears to misunderstand application of the Trash Amendments. Regarding trash controls within the priority land uses within an MS4's jurisdiction, the MS4 may elect which track to undertake. (Ocean Plan Amendment at III.L.2.a; Part I ISWEBE at IV.A.3.a.) Financial restitution for its implementation is not required.
50.16	In the Supporting Draft Report, Page 13, last paragraph, last sentence: The current wording of the last sentence allows the Water Boards to select the Track that that the MS4 is required to implement (regardless of the Track the MS4 is implementing for itself). Recommendation: see recommended language.		The State Water Board disagrees as the sentence focuses on other specific land uses or locations (e.g., parks, stadia, or roads leading to landfills) determined to generate substantial amount of trash. The permittee would select the compliance track, not the permitting authority. (Ocean Plan Amendment at III.L.2.d; Part 1 ISWEBE at IV.A.3.d.) Please see Response to Comment 6.6.
50.17	In the Supporting Draft Report, page 14, final paragraph: Fix multiple 'Water Board' references to an accepted abbreviation.		Please see Response to Comment 50.11.
50.18	In the Supporting Draft Report, page 14; final paragraph: Does a permittee choosing the second option need to monitor? Is any reporting required for either option?		Please see Response to Comment 5.1 and 5.2.
50.19	In the Supporting Draft Report, page 15; Non-point Source Dischargers; first sentence: At the discretion of which 'Water Board'?		Please see response to Comment 50.11.

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50.20	In the Supporting Draft Report, page 15, Section 2.5 Time Schedule, first paragraph, last sentence: Which 'Water Board' can set compliance milestones?		Please see response to Comment 50.11.
50.21	In the Supporting Draft Report, Page 15; Section 2.5 Time Schedule; Third Paragraph; second sentence: Correct 'Water Board to either 'State Water Board' or 'Regional Water Board'.		Please see response to Comment 50.11.
50.22	In the Supporting Draft Report, same location as Comment 21: Why not save two years and just require that MS4 Phase 1, MS4 Phase 2 and Caltrans notify the applicable 'Water Board' of their selected Track within 6-months?		The permitting authority can be either the State Water Board or one of the nine regional water boards. Within the Water Code, the legal mechanism for the Water Boards to require MS4 permitees (including Caltrans) to notify the permitting authority of their selected track is to issue an order under Water Code section 13267 or 133383. The requirement to issue the order within eighteen months of the effective date of the Trash Amendment was crafted to provide sufficient time for the permitting authority to request additional action from the permittee outside the scope of the existing permit conditions. While shortening this time period is preferable, the State Water Board recognizes that additional time is necessary for the permitting authority. In that time, permittees can be thoughtful on their track selection and implementation plan development following the effective date of the Trash Amendments.
50.23	In the Supporting Draft Report, page 15, Section 2.5 Time Schedule, Third/Fourth Paragraph: There is a Caltrans conflict between these paragraphs. Paragraph 3 says a Water Board will issue a request to Caltrans so Caltrans can notify that Water Board of its selected Track while paragraph 4 requires that		The State Water Board disagrees with this comment. In Section 2.5 of the proposed Final Staff Report, the third paragraph primarily discusses the compliance schedule for MS4 Phase I and Phase II permits, which specifies the three month track selection period. The fourth paragraph focuses on Caltrans, which does not include a track selection. As Caltrans is a linear system, trash control through a Track 2 framework is the only feasible approach.

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	Caltrans use Track 2 via the State Water Board requesting an implementation plan.		
50.24	In the Supporting Draft Report, page 16; first full paragraph; first sentence: Which 'Water Board'?		Please see response to Comment 50.11.
50.25	In the Supporting Draft Report, page 16, Section 2.7 Monitoring and Reporting Requirements, first paragraph, first sentence: Potential for significant conflict between the monitoring and reporting required by the State Water Board and those required by the Regional Water Board. Suggest 'Water Boards' be replaced by 'Regional Water Board'.		There is no conflict in monitoring and reporting between the State Water Board and a regional water board. Please see Response to Comment 50.11.
50.26	In the Supporting Draft Report, page 16, Section 2.7 Monitoring and Reporting Requirements, first paragraph, second sentence: Empowers State Water Board or Regional Water Board staff to require any magnitude of effort regardless of the Section 4.10 Issue 10 option selected/approved by the State Water Resources Control Board or the Track chosen by the permittee. Recommend deletion of this sentence.		The State Water Board disagrees. The proposed Trash Amendments set up minimum monitoring and reporting requirements to provide an equal baseline across California. The opportunity exists for more stringent control and monitoring requirements. Please see Responses to Comments 4.6 and 6.2.

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50.27	In the Supporting Draft Report, page 16, Section 2.7 Monitoring and Reporting Requirements, second paragraph, second sentence: To avoid conflict between the intent of this paragraph and that which is stated in the first paragraph of this Section, 'minimum' needs to be deleted from this sentence.		There is no conflict; the minimum requirements are that which are required by the Trash Amendments. Track 1 includes the minimum reporting requirements and does not require monitoring, whereas Track 2 requires both.
50.28	In the Supporting Draft Report, page 16, Section 2.7 Monitoring and Reporting Requirements, Second Paragraph, last sentence: Clarify which 'Water Board'.		Please see response to Comment 50.11.
50.29	In the Supporting Draft Report, Page 16; Section 2.7 Monitoring and Reporting Requirements; Third Paragraph; third sentence: Clarify which 'Water Board'.		Please see response to Comment 50.11.
50.30	In the Supporting Draft Report, page 18 Section 2.12 Other Approvals Required to Implement the Trash Amendments: a) The California Ocean Protection Commission (OPC) has a dramatically different approach to trash reduction than that which is being proposed in the Amendments. While their 'approval' may not be necessary, better explanation of the interactions between the OPC's emphasis on source removal and the State Water Board's abandonment thereof should be documented. b) Track 2 has been offered by the State as a path		The State Water Board has engaged with Ocean Protection Council on the Trash Amendments, who is supportive of the Trash Amendments. On August 27, 2014, the Ocean Protection Council adopted a resolution supporting the adoption of the proposed Trash Amendments. Please find the Ocean Protection Council's Resolution at: http://www.opc.ca.gov/webmaster/ftp/pdf/agenda_items/20140827/Item4b_TrashPolicyResolution_Resolution_FINAL.pdf

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	by which a municipality could comply with the Amendments. It is impossible to believe that compliance with the Amendments or assessments of effectiveness can be achieved without significant disturbance of waterways and the areas adjacent thereto. Thus, it seems appropriate for the State Water Board to consult with the State and Federal Fish and Wildlife agencies to ensure that implementation of this Track will not endanger species or disrupt habitat.		
50.31	In the Supporting Draft Report, page 19, Public Process, second paragraph, last sentence: incorrect verb tense transition -7 transitioned, ' ...projected has transitioned from ..'		Comment noted and modified in the proposed Final Staff Report.
50.32	In the Supporting Draft Report, page 22, Section 3.1, first paragraph: All of the items listed as those comprising 90% of trash could be efficiently controlled via a statewide redemption value sufficient enough that only accidental releases would occur and those would be mitigated by collectors. The discussion of 'Trash in California' needs to be expanded beyond what municipalities are currently doing and the impacts thereof to include Statewide efforts (e.g. redemption values), the impacts thereof and how adaptation of those efforts could affect trash in California.		Comment noted. These are also the items that are found in the storm drains and enter the surface waters. While redemption value methods may provide one means of controlling these items, creating a statewide program is outside of the scope of these Trash Amendments.

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50.33	In the Supporting Draft Report, page 24; first full paragraph: The paragraph makes reference to the Land Uses bulleted prior to the paragraph and the first sentence states that the priority land uses proposed for the Trash Amendments are the 'Developed, High Intensity'. 'Developed, High Intensity' is characterized by 80-100 percent impermeable surfaces. The Glossary defines 'high density residential' as >1 0 units per acre while Sacramento County studies indicate an 80+% impermeability occurs at >20 units per acre (see Table D-1a in the comment letter).		The Staff Report acknowledges that there is a lack of statewide consistency in land use planning and GIS data from individual municipalities, “Developed, High Intensity” was assumed to be analogous proxy to the priority land uses of the proposed Trash Amendments: high density residential, industrial, commercial, mixed urban, and public transportation stations. (See Staff Report, Section 3.2.)
50.34	In the Supporting Draft Report, page 64, Definitions of Trash: The recommended Consideration (#2) is encompasses virtually everything associated with an operation but nothing one normally considers trash. The State should consider other definitions including but not limited to: "All improperly discarded materials or products, including, but not limited to, preproduction plastics, convenience food, beverage, and other product packages or containers constructed of steel, aluminum, glass, paper, plastic, and other natural and synthetic materials."		The definition of trash states the general types of materials that are considered trash. In the definition of trash, the clause ‘from any production, manufacturing or processing operation,’ seeks to differentiate between purely natural items such as leaves and pine needles (see response to comment 18.2) from other waste items. The definition does not say or imply that trash is limited to operations. Additionally, please see response to Comment 18.2.
50.35	In the Supporting Draft Report, page 67, Water Quality Objective: It is		Please see Response to Comment 4.1.

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	unclear if the proposed Water Quality Objective contained in Appendices D and E is that which was created from use of the recommended Consideration 4 or an adoption of Consideration 2. Because Appendix A, Table 14 states that 'any amount of trash' impacts the contact/noncontact water recreation beneficial uses, the proposed objective language is essentially a 'zero trash' objective. The Amendments are only attempting a treatment approach; and therefore, the objective will not be met via the Amendments.		
50.36	In the Supporting Draft Report, page 69, Section 4.4, Consideration 2; 'Non-permitted dischargers would either apply with prohibition of discharge or be subject to direct enforcement action'. What does it mean to 'apply with prohibition'? State needs to define what application process is necessary for currently unpermitted discharges.		This is a typographical error in the report. The sentence should read, “Non-permitted dischargers would either comply with the prohibition of discharge or be subject to direct enforcement”. (See Staff Report Section 4.4, Consideration 2.)

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50.37	In the Supporting Draft Report, Page 71, Section 4.5; Consideration 3: Concur with the recommendation of focusing on high trash generation rate areas but confused by the internal inconsistency of the report. As noted in Comment 33, 'developed high intensity' is 80+ percent impermeable surface (which equates to > 20 unit per acre. This Section acknowledges local differences but suggests 15-30 units per acre. However, the Appendix E Glossary defines high density as > 1 0 units per acre. There needs to be an explanation for the use of >1 0 units per acre to define 'high density residential'.		The definition of "high density residential" was constructed based on an example of the dwelling unit standards used in local general plans by the Governor's Office of Planning and Research in its 2003 General Plan Guidelines and feedback from stakeholders during the scoping process at the Focused Stakeholder Meetings. Ultimately, the definition used in the Trash Amendments is a policy decision and the State Water Board finds that 10 units per acre is a reasonable definition that balances implementation costs with environmental protection.
50.38	In the Supporting Draft Report, page 74, Section 4.6, Consideration 2 (and 4?): I am assuming that the full capture component of Consideration 4 (recommended) includes all that is discussed in Consideration 2.'The maintenance of such systems...' Municipalities do not have the authority to access private property and maintain devices.		See Response to Comment 42.3

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50.39	In the Supporting Draft Report, page 74, Section 4.6 Consideration 2, final paragraph: Because other depositional mechanisms exist beyond the MS4, the monitoring associated with Track 2, or casual observation, will appear to show non-compliance- which will result in litigation. Thus, while the full-capture option will cause an undue burden, it is the only option that can effectively demonstrate compliance.		There are multiple sources and transport mechanisms for trash to state waters. Storm water transport is a primary transport mechanism and the central focus of the Trash Amendments. For MS4 permittees, there are two compliance tracks proposed to provide flexibility to both permittees and permit writers. Both the implementation framework and minimum monitoring requirements have been crafted to be both attainable by permittees and achieve a reduction in trash in state water bodies. The revisions to the proposed final Trash Amendments also address this by providing, in the definition for full capture system equivalency, and two example approaches whereby compliance can be demonstrated, both of which can be successfully used despite potential contributions of trash from other sources. (See Ocean Plan Amendment and Part 1 ISWEBE definitions “full capture system equivalency”.)
50.40	In the Supporting Draft Report, page 75, Section 4.6, IGP/CGP: The Trash definition discussion within the report makes clear that the State Water Board is targeting particle sizes smaller than 5mm (pre-production plastics). However, this recommendation allows a facility to demonstrate compliance by installing a full capture system -which is defined as capturing particle sizes > 5mm. Recommendation: Please provide an explanation of how IGP facilities using production components that are smaller than 5mm can comply via Track 1.		The IGP has existing provisions consistent with Assembly Bill 258, which became effective January 1, 2008 adding Chapter 5.2 to Division 7 of the California Water Code, section 13367, entitled “Preproduction Plastic Debris Program.” These existing provisions focus on BMPs in facilities in California that manufacture, handle, or transport preproduction plastics and the raw materials used to produce plastic products. The Trash Amendments will not result in modifications of provisions specific for preproduction plastics in the IGP.

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50.41	In the Supporting Draft Report, page 79, Section 4.9: While titled, 'Should time extensions be provided for employing regulatory source controls?' only the banning of products is discussed within the Current Conditions nor is any data provided that indicates that product banning has reduced the volume of trash in the waterways. 'Source Controls' (extended producer responsibility, redemption values, Green Chemistry, etc.) are the most efficient and effective way to reduce the amount of trash in the environment. However, the above-listed types of source controls can only be effective when implemented on (at least) a statewide basis. The State Water Board recently released for discussion the Storm Water Strategy Initiative Concept Paper which promotes the reduction of pollutants through source control. The treatment-oriented Amendments should (at least) discuss the apparent discrepancy between that which the State Water Board is promoting as its strategic imitative and that which is being proposed via the Amendments.		Regulatory source controls have been removed from the proposed revised amendments. See also the General Response to Comment Letter 1 and response to Comment 1.2.

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50.42	In the Supporting Draft Report, page 82; 5): An MS4 can control the amount of trash discharged from the MS4 (as is required by '4)'). As the report recognizes, other significant trash depositional mechanism exist over which the MS4 has no control. Data collected from the receiving water(s) will be highly variable rendering 'previous year' comparisons meaningless. Furthermore as regards the potential source(s), the MS4 can only speculate. The State needs to explain the rationale for including this monitoring requirement.		The amount trash reduced relative to the previous year is an appropriate requirement as it provides critical data useful for tracking and ensuring reasonable progress towards full implementation. While the amount of trash generated and deposited each year, may be variable, the overall trend, as measured by year to year changes, should generally go down. Please also see Response to Comment 4.6.
50.43	In the Supporting Draft Report, page 83, second paragraph, first sentence: This sentence is disingenuous as it implies that the stakeholders had an open-forum to discuss the manner of compliance and that the sentences that follow convey what the stakeholders proposed. This could not be farther from the truth. The requirements of Track 1 and Track 2 were provided along with implementation timelines. Discussion included statewide source control measures, priority land-use definitions, implementation schedules and State expectations regarding the location of full capture devices relative to the priority land-uses. Recommendation: The State Water Board needs to explain the		See Response to Comment 10.12.

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	process through which all of the information provided (with the exception of the Track 1 and Track 2 requirements) was discarded (e.g. statewide source control) or erroneous (housing density, full capture in public easements only, etc.).		
50.44	In the Supporting Draft Report, page 84, fourth paragraph, first sentence: 'Litter' is inaccurate and needs to be changed to 'trash'		In this context of litter laws, litter is an appropriate word.
50.45	In the Supporting Draft Report, page 89 and following, Section 5.2: Institutional Controls are not capable of achieving 100-percent removal to >5mm for the prescribed storm event; and therefore, cannot be considered a viable option for compliance.		Comment noted. The State Water Board recognizes that institutional controls alone may not be capable of removing all trash >5 mm. Therefore, Track 2 allows for a combination of controls to achieve equivalent reductions to Track 1. (See Staff Report at 2.4.1.) It is the expectation of the State Water Board that MS4 permittees elect to install full capture systems where such installation is not cost-prohibitive. (Ocean Plan Amendment at III.L.2.a.2; Part 1 ISWEBE at IV.A.3.a.2.) Please see Response to Comment 6.3.
51.1	The greatest barrier that California communities will face in complying with any trash control requirements is lack of funds to pay for structural controls, maintenance of full trash capture devices, development of institutional controls, and monitoring/reporting. Proposition 218 has created a disincentive for municipalities to even attempt to raise local funds to pay for storm drainage infrastructure and maintenance, resulting in a maintenance backlog and staff		Please see Responses to Comments 10.4 and 29.4.

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	shortages in many communities. Recommendation (1): With the adoption of statewide trash amendments, the Board should direct the Division of Financial Assistance to make grant funding available to municipalities to support compliance. Recommendation (2): The Board should direct the Office of Chief Counsel to provide local agencies with an authoritative interpretation of A.B. 2403 that clarifies a municipality's ability to raise funds to pay for trash capture infrastructure and maintenance without a Proposition 218 election. Alternatively, the Board should undertake an urgent legislative campaign to further revise the Proposition 218 Omnibus Implementation Act Government Code section 53750-53756), to extend the exemption in A.B.2403 to storm drainage infrastructure improvements and maintenance.		
51.2	I question the ability of Track 1 compliance to attain either the narrative objective selected by staff or a zero trash objective. As Geoff Brosseau noted in his oral comments at State Board's July 16 trash workshop, storm drains are just one of several pathways trash takes to reach our waters. Recommendation: The Board should use the same load reduction-based compliance		The Trash Amendments proposed a narrative water quality objective for trash, which is not the same as a zero trash numeric water quality objective. The State Water Board understands that trash enters a water body via multiple pathways, and storm water is a dominate transport pathway. Trash is a controllable priority pollutant, especially in storm water. The fifteen existing trash and debris TMDLs in the Los Angeles Region have demonstrated that full capture systems are a proven and effective best management practice to remove trash from storm water. As proposed, Track 1 does have interim milestones; however, effectiveness monitoring of

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	standard for Track 1 as for Track 2, and include interim milestones/reviews to determine whether Track 1 is locally effective in abating nuisance or reducing trash in receiving waters. The trash that ends up in the storm drain system is by no means all of the trash that creates a nuisance or public health hazard in our waters. Direct dumping into creeks, on-land dumping of large items, homeless encampments, windblown trash – all are sources of trash that will never see a catch basin. I fail to understand how Track 1 will actually reduce trash to non-nuisance levels. Track 1 does nothing to encourage or incentivize multi-benefit projects, which are likely to be prioritized in any future Stormwater Strategy Initiative.		Track 1 would not be required with the proper operation of full capture systems. Please see Responses to Comments 6.1, 6.2, 6.5, 6.6, and 6.8.
51.3	Because land use patterns, storm profiles, and the nature of constructed storm drainage infrastructure vary widely across California, centralized certification of trash capture devices at State Board is likely to become unworkable, causing significant additional work for staff and confusion for device vendors. Recommendation: The Board should delegate certification of full capture devices to the regions, according to statewide criteria for functionality. For these reasons I believe it is critical for vendors to be		Comment noted. To provide statewide consistency, the Executive Director, or designee, of the State Water Board will be the certifier of full capture systems. Additionally please see Response to Comment 10.5.

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	able to work through the certification process with Regional Board staff, who are familiar with local precipitation patterns and the idiosyncrasies of local infrastructure. State Board could provide functional criteria and post a master list of device manufacturers and device models, noting the regions that have approved different devices.		
51.4	The Board should use the same load reduction-based compliance standard for Track 1 as for Track 2, and include interim milestones/reviews to determine whether Track 1 is locally effective in abating nuisance or reducing trash in receiving waters.		Track 1 establishes the performance based-standard for Track 2, as defined as full capture system equivalency, due to the demonstration of the effectiveness to reduce trash in the Los Angeles Region by local agencies complying with trash and debris TMDLs. While Track 1 has only minimum reporting requirements, there is a requirement for interim milestones to achieve final compliance. Please see Response to Comment 6.2 and 6.8.
52.1	With jurisdiction that allows for SED Supplemental Environmental Documents, you bypass the General Plan and Its Elements including any Framework Elements that are part of the execution, mitigation and monitoring of the planning documents along with the CEQA process.		CEQA provides that certain regulatory programs of state agencies may be certified by the Secretary for Natural Resources as being exempt from the requirements for preparing Environmental Impact Reports (EIR), Negative Declarations, and Initial Studies if the Secretary finds that the program meets certain criteria. A certified program remains subject to other provisions in CEQA such as the policy of avoiding significant adverse effects on the environment where feasible. The Secretary has certified the State Water Board regulatory program for adoption or approval of standards, rules, regulations, or plans to be used in the Basin/208 Planning program for the protection, maintenance, and enhancement of water quality in California as an exempt certified state regulatory program (Pub. Res. Code § 21080.5; Cal. Code Regs., tit.14, § 15251, subd. (g)).
52.2	Permitting, outfalls and ambient water quality criteria should be the issue. A program that operates in		The CWA and Porter-Cologne direct the Water Boards to regulate the discharge of pollutants into waters of the United States and waters of the State. Trash is considered a pollutant

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	gray areas of regulation is not acceptable. Trash management is part of the operations and maintenance of the CIRCULATION ELEMENT as it relates to transportation, required by law. The City of Los Angeles has not prepared a CIRCULATION ELEMENT, but a TRANSPORTATION ELEMENT adopted August 8, 1999, CF 97-1387 with a MOBILITY ELEMENT 2035 in the process. Pipelines are part of the CIRCULATION ELEMENT. Solid Resource Program is part of the SOLID WASTE INTEGRATED RESOURCES PLAN. Watersheds and landfills are involved, not surface waterbodies. CALRECYCLE is the agency with jurisdiction.		and where runoff and storm water transport trash into these waters, it is considered discharge of waste subject to Water Board authority.
52.3	There needs to be a dedicated funding source for the Trash Amendments.		Please see Response to Comment 10.4.
52.4	Low Impact Development does not take into consideration landslide, liquefaction, high groundwater, underground rivers or earthquake faults. Multi-benefit is not a term defined in law, to our knowledge, but just an interpretation.		A multi-benefit project is a project designed to achieve some or all of the benefits set forth in Section 10562, subdivision (d) of the Water Code. (See Ocean Plan Amendment and Part I ISWEBE definition for “multi-benefit project.”)
52.5	There are no baseline or measurement measures. You are an appointed board, not an elected board. Citizens need elected representation for taxation issues. Reconsider this draft and apply only		The CWA and Porter-Cologne direct the Water Boards to regulate the discharge of pollutants into waters of the United States and waters of the State. Trash is considered a pollutant and where runoff and storm water transport trash into these waters, it is considered discharge of waste subject to Water Board authority.

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	to your jurisdiction and the law. We recommend NO PROJECT.		
53.1	The timeframe for obtaining certification is a concern. The Executive Officer approval process should have a rapid turnaround time to allow permittees to move forward with planning and installation within the time schedule granted. MCSTOPPP recommends that a more extensive list of certified devices, including the Bay Area Trash Demonstration Grant devices, should be prepared prior to the adoption of the proposed Trash Amendments. MCSTOPPP also recommends refining the full-capture device certification process to streamline the certification process as much as possible.		Please see Responses to Comments 4.3 and 10.5.
53.2	MCSTOPPP recommends that standards of equivalency be established prior to or with the adoption of the proposed Trash Amendments. MCSTOPPP feels that visual assessments of priority areas are the most appropriate for determining success of Track 2 control measures. Permittees should be allowed to propose the method of demonstrating performance in their plan.		The Trash Amendments provide Visual trash presence surveys, such as "Keep America Beautiful Visible Litter Survey" and the "SWAMP's Rapid Trash Assessment," provide a methodology for visual assessment. However, the equivalency monitoring must not be limited to just visual assessment by including a trash reduction quantification approach. Please see Responses to Comments 4.6 and 6.2.
53.3	MCSTOPPP objects to the requirement for stormwater permittees to conduct receiving		Please see Response to Comment 4.6.

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	water monitoring. As noted, other sources contribute trash to receiving waters and imposing this requirement on stormwater permittees will not provide an indication of effectiveness stormwater trash control programs. While stormwater permittees may want to conduct receiving water monitoring to demonstrate performance, it should not be mandated. Additionally, MCSTOPPP feels that visual assessments of priority areas are the most appropriate for determining success of Track 2 control measures.		
53.4	Track 1 and 2 language indicates that permittees must "capture runoff from one or more of the priority land uses in their jurisdictions." Does this mean permittees could install full-trash capture (or an equivalent combination) in only one of the five priority land use areas identified? Additionally, for compliance, would permittees have to install full-trash capture (or an equivalent combination) in 100% of catch basins in that priority land use? MCSTOPPP recommends clarifying the language to the proposed Trash Amendments to address these questions.		Please see Response to Comment 11.4.

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53.5	There are many instances in Phase II communities where some portion of the priority land use area is not in fact a high trash generating area. Rather than installing devices or institutional controls in areas where the return on the investment will be low, we strongly recommend that the Trash Amendments allow for flexibility by establishing a process through which permittees could petition their Regional Water Board to review the areas in quest ion and give them the authority to exempt such areas if they are found not to be high trash generating. The exemption could include an 'expiration date' or a requirement to revisit priority areas at some frequency in the event the trash situation in those areas worsens. The exemption process could include visual assessments of the priority areas as a first step in determining where and what controls to put in place.		Please see Response to Comment 12.2.

Comment Letter	Comment	Recommended Language	Response
53.6	The proposed Trash Amendments staff report states "treatment controls likely to be used for compliance with the proposed Trash Amendments may include installation of catch basins or inserts within existing catch basins." To support municipalities that are incorporating green infrastructure/Low Impact Development (LID) installations into their Capital Improvement Programs (as required in some cases by the Phase II permit), the proposed amendments and certified trash capture devices should specify that properly designed and built LID measures qualify as full-capture devices under Track 1. MCSTOPPP recommends that the State Water Board recognize the value of LID by including some LID measures as full-capture under Track 1.		The State Water Board agrees with this comment. The Storm Water Program at the Water Boards encourages the management of storm water as a resource. The main objective of treating storm water as a resource is to protect and restore those watershed processes that are critical to watershed health. Multi-benefit projects that infiltrate and treat storm water runoff are encouraged within MS4 Phase I and Phase II permits. Within Track 2, multi-benefit projects are a supported method of compliance to control trash. In addition to trash control, multi-benefit projects treat other storm water runoff priority pollutants. As a whole, multi-benefit projects prevent impacts from flooding, mitigate storm water pollution (such as trash), create open space, enhance fish and wildlife habitat, and improve water efficiency.
53.7	Please help permittees establish dedicated sources of non-competitive funding for trash capture. Prop 218 currently precludes stormwater entities from raising their fees for stormwater management (where fees even exist as the Phase II regulations came into effect after Prop 218 was passed). Even with the recent changes to Prop 218, catch basin inserts, the likely type of control device, would not be considered eligible for the water supply exception of resulting from		See Responses to Comments 4.7 and 10.4.

Comment Letter	Comment	Recommended Language	Response
	AB 2403. MCSTOPPP recommends that the State Water Board help develop innovative ways for funding trash control programs.		
53.8	MCSTOPPP recommends that the State Water Board keep Track 2 as an option in the proposed Amendments to provide flexibility to municipalities with flooding concerns and to provide a comprehensive approach to keeping our watersheds clean.		The State Water Board appreciates the support for Track 2 and proposes to keep Track 2 to provide a comprehensive approach and flexibility to permittee to determine the most effective means of controlling trash while taking into consideration particular site conditions, types of trash, and the available resources for maintenance and operation.
53.9	MCSTOPPP recommends that the State Water Board grant automatic time extensions for regulatory source controls that take effect prior to or within three years of the effective date of the proposed Trash Amendments.		Please see Responses to Comments General Response of Comment Letter 1, 1.3, and 4.5. Regulatory source controls and time extensions have been removed from the proposed Final Trash Amendments. (Ocean Plan Amendment at removed III.L.5; Part I ISWEBE at removed IV.A.6.)
53.10	Please expand the analysis provided in the Substitute Environmental Document (SED) to create a tiered CEQA document that will allow local agencies to satisfy project-specific CEQA requirements associated with the installation of full trash capture devices. If this is not possible, please consider providing a guidance to help simplify the analysis for local agencies.		The CEQA Guidelines describe that "tiering" refers to using the analysis of general matters contained in a broader environmental impact report (EIR) (such as one prepared for a general plan or policy statement) with later EIRs and negative declarations on narrower projects; incorporating by reference the general discussions from the broader EIR; and concentrating the later EIR or negative declaration solely on the issues specific to the later project (14 CCR 15152(a)). The State Water Board has done a large-scale analysis for the proposed Trash Amendments and developed detailed, site-specific analysis of implementation of full-capture devices or other means of meeting the requirements of the proposed project. It is anticipated that public agencies implementing project specific actions in compliance with the Trash Amendments will be required, in compliance with CEQA, to prepare future environmental documentation in connection with a project of a more limited geographical scale and would be

Comment Letter	Comment	Recommended Language	Response
			expected to tier from the State Water Board environmental analysis as appropriate. This subsequent CEQA documentation may take the form of an EIR, mitigated negative declaration, negative declaration, or possibly a statutory or categorical exemption, as appropriate.
54.1	Merced County supports the narrative water quality objective.		Comment noted. The State Water Board appreciates the support for the narrative water quality objective for trash.
54.2	Our primary concern is that the record supporting the Proposed Trash Amendments does not provide sufficient evidence that trash is a statewide problem that requires automatic implementation of all actions by all municipalities. The regulation of trash should be addressed in a manner consistent with other pollutants; that is, in which actions are required only after impairment has been defined or a water quality objective has been found to be exceeded, and that the regulated entity has contributed to that impairment or water quality objective exceedance (i.e. reasonable potential has been established). Given the lack of justification that trash is a problem in all waters, Merced County proposes the following approach for the Proposed Trash Amendments: 1. Establish the proposed narrative water quality objective. 2. Establish implementation procedures for the water quality objective that are triggered when the water quality		Please see Responses to Comments 10.7 and 44.1.

Comment Letter	Comment	Recommended Language	Response
	objective is exceeded or the water body is found to be impaired by trash. 3. Specify that permit conditions consistent with the implementation procedures will be established in NPDES permits only when the water quality objective has been exceed and the NPDES permit holder has been identified as the source.		
54.3	Merced County conservatively estimates that the proposed new requirements reflected in the Proposed Trash Amendments would impose a cost burden on local taxpayers in our County of $5M. This cost is in addition to the millions of dollars in the region in unfunded mandates created by the Bacteria TMDL provisions in the recently adopted MS4 Permit (20 13-0001-DWQ). Other public entity permittees statewide would incur similar unfunded requirements set forth in the new policy, Merced County urges the State Water Resources Control Board to first identify a reliable funding source to reimburse local jurisdictions for the cost of the new requirements, as mandated by the California Constitution.		Please see Responses to Comments 10.4 and 29.4.
54.4	Merced County recommends adding language to the Proposed Trash Amendments indicating the permittees are in compliance with		Please see Response to Comments 4.1 and 10.9.

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	the receiving water limitations so long as they are fully implementing Track 1 or Track 2.		
54.5	Merced County recommends including language after Chapter IV.B.3.a of the ISWEBE Plan and Chapter III.L.2.a of the Ocean Plan that states: A MS4 Permittee may request that compliance requirements for trash be established through a watershed prioritization and planning process outlined in MS4 permit requirements. This prioritization process would allow for evaluation of the trash in the context of other watershed priorities and provide a mechanism for modifying or reducing the requirements for compliance in accordance with the procedures outlined in the MS4 permit and an approved watershed plan. Through this process, monitoring data could be utilized to demonstrate that trash controls are not necessary for all priority land uses.		Please see Response to Comment 11.9. Additionally, the objective of monitoring trash to demonstrate effectiveness of the controls and compliance with full capture system equivalency. The priority land uses have been determined to be five land uses with high trash generation rates. With the "equivalent alternate land uses" provision, the Trash Amendments allow for an exchange of a priority land use for another land use with a comparative trash generation rate, which needs to be established though the reporting of quantification measures. However, the intent of monitoring and "equivalent alternate land uses" is not to select or unselect priority land uses for trash controls.
54.6	Merced County recommends adding language to Chapter IV.B.3.a.(1)/IV.B.3.a.(2) and Chapter III.L.2.a.(1)/Chapter III.L.2.a.(2) of the ISWEBE Plan and Ocean Plan, respectively stating that permittees must address catchment areas where the priority land uses are greater than 25% of the total catchment area.		Please see Response to Comment 11.4.

Comment Letter	Comment	Recommended Language	Response
54.7	As defined in the Proposed Trash Amendments, the predefined priority areas may not be appropriate for all jurisdictions, does not consider local knowledge of receiving water conditions and previous data collection efforts. As currently drafted, the Proposed Trash Amendments assume that there is a problem in the defined priority areas, effectively forcing a costly "one size fits all" approach onto the jurisdictions. Merced County supports the concept of prioritized land uses to address problem areas; however, the approach should allow for more local flexibility in this prioritization. Merced County and the other municipal separate. Recommendation: Merced County recommends including language after Chapter IV.B.3.a of the ISWEBE Plan and Chapter III.L.2.a of the Ocean Plan that states: A MS4 Permittee may request that compliance requirements for trash be established through a watershed prioritization and planning process outlined in MS4 permit requirements. This prioritization process would allow for evaluation of the trash in the context of other watershed priorities and provide a mechanism for modifying or reducing the requirements for compliance in accordance with the procedures outlined in the MS4 permit and an		Please see Response to Comment 10.7 and 15.2.

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	approved watershed plan. Through this process, monitoring data could be utilized to demonstrate that trash controls are not necessary for all priority land uses.		
54.8	Part (6) of the Priority Land Uses definition from the ISWEBE Plan allows permittees to issue a request to the Regional Water Quality Control Board to comply with Chapter IV.B.3.a.1 of the ISWEBE Plan using alternate land uses equivalent to the defined Priority Land Uses. However, as written, the Chapter reference for the ISWEBE Plan only allows the permittees to address the equivalent alternate land uses if utilizing Track 1. The reference should be changed to allow the permittees to address the equivalent alternate land uses via Track 1 or Track 2. Part (6) of the Priority Land Uses definition from the Ocean Plan allows permittees to issue a request to the Regional Water Quality Control Board to comply with Chapter IV.B.3.a.1 of the ISWEBE Plan using alternate land uses equivalent to the defined Priority Land Uses. However, as written, the Chapter reference for the Ocean Plan only allows the permittees to address the equivalent alternate land uses if utilizing Track 1. The reference should be changed to allow the permittees to address		Please see Response to Comment 4.4.

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	the equivalent alternate land uses via Track 1 or Track 2. In addition, the chapter reference is incorrect. The reference reads Chapter III.J .2.a.1, while it should read Chapter III.L.2 .a.1.		
54.9	Merced County recommends adding language to the Proposed Trash Amendments requiring a permitting authority to consider revision to the final compliance date of the Proposed Trash Amendments if new priority land uses are added during the duration of the compliance period.		Please see Response to Comment 10.8.
54.10	Recommendation: Merced County recommends the State Water Board revise the language in the Proposed Trash Amendments (Chapter IV.B.7.b and Chapter III.L.6.b of the ISWEBE Plan and Ocean Plan, respectively) to allow for more flexibility in determining Track 2 performance and to remove the requirement for receiving water trash monitoring.		Please see Response to Comment 4.6.
54.11	Merced County recommends the removal of the standard of equivalency for Track 2 from the Proposed Trash Amendments. Instead, allow permittees to propose a readily achievable and practical way that will indicate compliance with the policy for drainages without full-capture devices.		Please see Response to Comment 16.3.

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54.12	Merced County recommends that language should be included in the Proposed Trash Amendments stating that if the requirements in the Proposed Trash Amendments are being met, then no Trash TMDLs will be developed for those water bodies where the requirements are being fully implemented.		Please see Response to Comment 10.10.
54.13	There are several incorrect section references in the ISWEBE Plan. Recommendation: For the ISWEBE Plan, all references to Chapter IV.C.3 , Chapter IV.C.3.a, or Chapter IV.C.3.b should be revised to Chapter IV.B.3 , Chapter IV.B.3.a, and Chapter IV.B.3.b, respectively.		Please see Response to Comment 11.6.
54.14	The well-established Community Planning Groups in these rural areas have established priority issues through rigorous stakeholder planning processes. Rural towns have commercial areas that will be under the Trash Amendments. These rural communities have limited resources available to fund programs, and there is not a reasonable return on investment for these small communities to implement extensive trash controls. Based on their local planning processes, the threat of firestorms or other local priorities may be the best use of their limited resources. Recommendation: Merced County recommends exempting rural areas		Please see Responses to Comments 10.1 and 45.16.

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	from the Trash Amendments that are not directly contiguous to urbanized areas.		
55.1	Support the comments submitted by CASQA and BASMAA.		Comment noted. For Responses to BASMAA's comments please see Comments 4.1-4.7, and for Responses to CASQA's comments please see Comments 10.1-10.12.
56.1	First, the current monitoring requirements applied to jurisdictions which elect the Track 1 approach are currently not required to perform monthly or post-storm event or even annual monitoring of structural catch basements to demonstrate capture and removal rates. This is problematic on at least two fronts: (1) if MS4 permittees are not required to perform specified monitoring on the structural controls installed in catch basements, then these cities, the Regional and State Water Boards, and the citizens of these communities will not be able to determine whether the measures are actually working; (2) since "Track 2" compliance is based specifically on being able to demonstrate commensurate trash removal in a jurisdiction that "Track 1" devices could achieve, it is vital to have actual trash removal efficacy data against which to compare the Track 2 "institutional controls." The Water Boards' permitting process is generally a self-reporting and self-enforcing one, which PSSEP certainly supports. But in order to		Monitoring is a key component to assessing that the implemented trash controls are leading to the achievement of compliance with the prohibition of discharge and protecting the beneficial uses of California's surface waters. Additionally, monitoring should be utilized by permittees to provide for adaptive management decision making for implementing trash controls. With limited resources, the most effective combination of controls to control trash should be used. The Trash Amendments propose a tailored approach to provide flexibility to Water Board permit writers to design monitoring programs that reflect the compliance methods elected by permittees along with regional characteristics. Due to the cost of full capture systems, MS4 permittees complying under Track 1 would provide a report to the applicable Water Board demonstrating installation, operation, and maintenance of full capture systems on an annual basis. MS4 permittees complying under Track 2 would develop and implement annual monitoring plans to demonstrate effectiveness of trash controls and compliance with the full capture system equivalency. For statewide consistency, all Track 2 monitoring programs should be striving to answer the same fundamental questions, which may include receiving water monitoring. Please see Responses to Comments 4.6 and 6.2.

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	demonstrate compliance with the underlying "zero trash" goal contained in the proposed policy, as well as maintain credibility of the program itself, it seems incongruous that Track 1 carries little or no substantive monitoring obligations to demonstrate a jurisdiction's compliance with the standard.		
56.2	Second, and as applied to both Track 1 and Track 2 permittees, the current draft policy fails to include accepted, standard methodologies for measuring trash. Without having a consistent, statewide approach for measuring trash, varied and disparate trash reduction results will likely be reported from different parts of the state. It seems axiomatic that a statewide trash control policy should also have single, plenary approach to counting trash in all of the Regions. To be sure, there are a number of different methods of "counting trash" and a close review of trash surveys from around the country demonstrate that "how" one measures trash can affect the results. This dynamic was encountered by the San Francisco Regional Water Board over the past few years as it has grappled with trying to establish "baselines" against which to measure trash reductions after implementation of BMPs and the like. Fundamentally, any new pollution control standard that the		Please see Response to Comment 4.6.

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	State Water Board seeks to impose should also be coupled with appropriate monitoring standards and methodologies so that the Water Boards – and the public – can gauge the effectiveness of either the Track 1 or Track 2 controls.		
56.3	Under the current Track 1 proposal, it is unclear what standards apply to "maintain" structural controls once they've been installed. Indeed, the current maintenance requirement applied to Track 1 structural controls is that the permittee provide an annual report "demonstrating installation, operation, [and] maintenance." Yet it is left to either the MS4 permittee or the applicable Water Board to determine whether the maintenance reported is adequate. Nevertheless, the trash capture device manufacturers could provide invaluable assistance in helping the State Board staff develop a set of minimum maintenance standards that should be applicable across the state.		Please see Response to Comment 16.3.
56.4	While PSSEP takes no position on the appropriateness or advisability of individual cities and other jurisdictions adopting product bans on items such as plastic bags or polystyrene foam food containers, we do think it is inappropriate for the State Board to provide regulatory incentives for MS4 permittees to		Please see Response to Comment 4.5.

Comment Letter	Comment	Recommended Language	Response
	adopt these types of "institutional controls" simply as a means of avoiding the costly installation and maintenance of the so-called Track 1 structural controls. If individual cities and other MS4 permittees wish to adopt plastic bag and polystyrene foam food container bans, that is certainly their prerogative.		
56.5	PSSEP believes that the State Water Board could and should provide the leadership in getting the MS4 agencies, garbage franchise companies, and trash capture device manufacturers together to further explore whether and how this approach can be effectively used to help local governments more quickly pursue so-called "Track 1" compliance.		Comment noted. The State Water Board hopes that the Trash Amendments will lead to great partnerships between MS4 agencies, garbage franchise companies, and trash capture device manufacturers.
57.1	The Riverside County Permittees concur that Trash is a significant pollutant of concern in those surface waters where impairment by Trash have been identified. Those Trash impairments and the ongoing and effective programs being implemented to address them are discussed fully in the Draft Staff Report. But, the Proposed Trash Amendments would impose a statewide mandate that ignores local conditions and the most important identified pollutant impairments, and that requires MS4 permittees to		Please see Responses to Comments 10.7 and 44.1.

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	address Trash as a top priority pollutant category without regard to whether the surface waters are, in fact, impaired by Trash. As the Draft Staff Report reveals, there is no evidence in the record that, outside of the areas where surface waters are identified as impaired by Trash (representing only 2% of State surface waters), that warrants the additional requirements set forth in the Proposed Trash Amendments. It is notable that the Draft Staff Report does not suggest that Trash impairments in California are not adequately identified. While these conditions certainly pertain to such coastal waters, they are the exception in inland surface waters in much of southern California, especially Riverside County. In Riverside County most surface waters consist of dry washes that support terrestrial wildlife, not the aquatic habitat addressed in the Draft Staff Report. Even where water is present, wind, rather than runoff is likely to be the primary conveyance of Trash to these waters.		
57.2	If it is determined that statewide policy addressing Trash is needed, we encourage the State Board to set aside the proposed Trash Amendments in their entirety and re-consider this issue in light of the limited impairments described in this		Please see Responses to Comments 10.7 and 44.1.

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	letter and other comments submitted by MS4 permittees. For example, the Riverside County Permittees acknowledge that establishment of a statewide water quality objective and definition for "Trash" may have merit. We have reviewed and support comments on specific elements of the Proposed Trash Amendments submitted by Orange, San Diego, and San Bernardino Counties and encourage the State Board to consider their comments as relevant in the development of a revised approach to a statewide policy addressing Trash.		
57.3	The approaches in each of these Regions are tailored to address specific local Trash management needs and issues. The Draft Staff Report provides no evidence that the Proposed Trash Amendment would result in more or even equally effective management of Trash to address the impairment of surface waters than the existing Regional efforts. Even where Trash impairments do not exist, MS4 permittees have long implemented Trash source control programs, including those required by MS4 permits, to prevent impairments. These programs include municipal trash collection and disposal, street sweeping, deployment of public trash cans, public education, code enforcement, maintenance of MS4		Existing permits have long included these institutional measures for trash controls. However, trash in surface waters bodies continues to be a pollutant impairing beneficial uses. The State Water Board believes that trash is a controllable pollutant with an increase in trash control efforts.

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	facilities and other measures. We believe that these programs have been instrumental in preventing broader impairment of surface waters by Trash.		
57.4	Throughout the Draft Staff Report, it is stated that the proposed Trash Amendments are needed "to provide statewide consistency". However, no evidence is provided in the Draft Staff Report or its attachments to justify why statewide consistency is needed or to justify the approach in the Proposed Trash Amendments requiring MS4 permittees to undertake additional costly and environmentally impactful measures to address Trash where impairments have not been identified.		There is a lack of consistency in trash requirements statewide. Additionally, there is an increase in both 303(d) listing and TMDLs for trash. To reduce number of future 303(d) listings and address impairments of beneficial uses for trash, the State Water Boards have made the Trash Amendments a priority project.
57.5	The Riverside County Permittees believe that, with regard to the MS4 Programs in place in the County, the Proposed Trash Amendments would in fact be counter-productive in addressing surface water quality. As noted above, the key to the Riverside County Permittees' MS4 compliance efforts has been identifying and prioritizing pollutant categories impairing surface waters for source control and management, an intensely local effort performed in collaboration with the Regional Boards that issued the MS4 permits. The Proposed Trash Amendments would require diversion of resources		Please see Response to Comment 11.9.

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	from identification and management of those priority pollutants to address Trash, which has not been identified as creating impairments in any surface water in Riverside County and is not identified as a local pollutant of concern. An important feature of the most recently adopted MS4 permits has been an increased emphasis on watershed planning initiatives, because a watershed focus has been determined to be the most effective way to address urban pollutant sources. Through the MS4 permits, the Riverside County Permittees (and MS4 permittees in other counties) have spent considerable sums and many months and sometimes years to propose and have adopted watershed management plans that set the agenda for addressing the most important pollutants and their sources and set forth the specific efforts and BMPs that will be utilized.		
57.6	As described during the CASQA Trash webinar on July 29, 2014, Los Angeles County has spent $88 million implementing the types of trash exclusion devices contemplated in the proposed Trash Amendments. The Riverside County Permittees believe that our capital costs would be significant, constituting a dramatic increase in compliance costs where no impairments are identified. This is a		Please see Response to Comment 26.8.

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	major concern of the Riverside County Permittees.		
57.7	The Riverside County Permittees have concern over the definition of "Trash" in the Proposed Trash Amendments. First, the definition should specifically exclude materials that may be conveyed as a result of flooding events, including agricultural materials, building materials, fencing, and road and highway debris. As the State Board knows, despite the current extreme drought, the State (and including Riverside County) has in the recent past experienced significant flooding events, which typically will bring with them debris flows containing a wide variety of materials, including Trash. Second, the definition includes "natural materials" as a category of Trash. Given the significant amount of plant material that naturally enters the MS4 (through wind, autumn leaf fall and other means), it would be extremely difficult to determine if the "natural materials" were of a production, manufacturing, or processing operation, as required by the definition. Third, the Draft Staff Report suggests that old tires and appliances are Trash items and there is no exclusion in the "Trash" definition for large items that enter receiving waters from sources other than the MS4. It is appropriate to exclude such large items from the		Please see Responses to Comments 18.2 and 20.11.

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	definition related to water quality and continue to regulate their management and disposal under existing solid waste regulations, as they are not dissolved in, or readily conveyed by, surface waters other than during flood events. The presence of tires, appliances and other large items in the receiving waters is due to illegal dumping, which is addressed by existing code enforcement activities.		
58.1	I support the Board's position that Full Capture Systems, along with institutional controls, will play a valuable role in assisting municipalities comply with the forthcoming trash control measures.		The State Water Board appreciates the support on the proposed trash controls in the Trash Amendments.
58.2	Our firm manufactured the initial linear radial gross solids removal device for Caltrans' field and laboratory studies and it was one of the first certified as a Full Capture system by the LARWQB in 2004. We continue to manufacture these non-proprietary screens today for Caltrans and have had our screens installed by several other municipalities in California and in other states throughout the U.S. We have also broadened the initial Caltrans design to accommodate larger flows typical for urban and commercial areas. It is noted that manufacturers of the basin inserts, continuous deflection systems, and		The Final Staff Report references the Linear Radial – Configuration 1 (LR1 I-10) as specified in Bishop 2004 certification letter. No change to the Staff Report is needed.

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	netting systems have their names included in sections 5.1.2 through 5.1.4. For the benefit to municipalities seeking to locate a manufacturer of the linear radial device, I respectfully request that Roscoe Moss Company's name be included as a manufacturer in the Linear Radial Device section of the Final Draft.		
59.1	The Trash Amendments, as currently proposed, would require significant investment of capital and ongoing operational funds from local agencies to provide a much narrower benefit *(i.e.* removal of trash already entrained in urban runoff) than source control.		The measures that local agencies implement to comply with the Trash Amendment must lead to a reduction in trash. The Trash Amendments propose a dual track compliance approach to provide a wide-range of effective trash controls to be utilized by local agencies.
59.2	We applaud the State Water Board's apparent intention to include true source control as an integral part of the statewide storm water strategy that is currently under development. Inclusion of source control in the Trash Amendments as the primary mechanism for reducing the generation and discharge of trash is completely consistent with this strategy, and is further supported by a number policy and economic considerations.		The State Water Board appreciates the support for the Storm Water Strategic Initiative. Additionally, regulatory source controls have been omitted from the final proposed Trash Amendments, and please see Response to General Response to Comment Letter 1.

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59.3	The use of an asterisk throughout the document is obviously to reference a definition contained within the Glossary; but, this concept is not stated and there is no corresponding asterisk at the glossary.		The asterisk is used to designate a term as a defined term in the California Ocean Plan. All capital letters is used to designate a term as a defined term in the forthcoming ISWEBE Plan.
59.4	As was discussed during the 16 July 2014 workshop, there is no standardized path to compliance associated with Track 2. In addition, it does not appear that it is possible to achieve compliance via Track 2. If Track 1 is the only viable option for compliance, it becomes an unfunded mandate.		Please see Responses to Comments 6.2, 10.4, 16.3, and 29.4.
59.5	Please note that there are numerical sequencing and referencing discrepancies throughout Appendix E that need to be corrected and are not specifically' addressed below (e.g. Page E-1; "Draft text of ... Chapter III- Water. . ' v. 'Draft text of ...Chapter Implementation...').		Comment noted. These have been corrected in the proposed Final Staff Report.
59.6	The term "adjacent' is vague in the Water Quality Objective. Recommend defining 'adjacent areas' as the high-water line.		Please see Response to Comment 50.9.
59.7	The MS4 entity does not have the authority to install, operate, and maintain full capture systems on private property. Specific "within the MS4 system" instead of "for all storm drains".		Please see Responses to Comments 11.4 and 25.1.

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59.8	Track 2 compliance cannot obtain the objective in the Amendments include no method by which Track 1 equivalence can be demonstrated. In absence of a compliance methodology, 'equivalence' becomes subjective and will need to be defined by the courts.		Please see Responses to Comments 4.1, 4.6, 6.2, and16.3.
59.9	1) Assuming this Section is actually referencing Chapter IV. B.3.a(1) and Chapter IV.B.3.a(2): A permittee may have selected Track 1 and the land use or location (while within the municipality's regulatory jurisdiction) may not drain through the MS4 (e.g. a nonpoint source park or facility that private drains directly into surface water); and, the MS4 does not have the legal right to install, operate or maintain devices on private property. 2) 'substantial' is vague and open to subjective interpretation. Suggest the use 'comparative trash generation rate' as discussed in the Glossary.		Please see Responses to Comments 11.4 and 25.1. The State Water Board does not agree that changing 'substantial' is necessary.
59.10	The State and Federal governments own properties that these proposed Trash Amendments define as priority land uses. However, with the exception of properties controlled by The Department, there is no mechanism for compliance or recognition that the MS4 into which those locations may discharge has no authority by which it can obtain compliance.		Comment noted. If these state and federal properties have a NPDES permit, then they will be subject to the Trash Amendments.

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59.11	Have interim milestones, but not specific.		Please see Response to Comment 38.6.
59.12	As was suggested during the Sacramento Stakeholder meeting (4/8/13), we would encourage the State to partner with a broad stakeholder group to evaluate/implement source control prior to implementing treatment via the Trash Amendments. If unwilling to be a partner, we would encourage the State to consider developing/adding language that recognizes (via time extensions and/or milestone adjustments) local jurisdictions that can demonstrate more global/statewide source removal efforts.		Comment noted. With the Trash Amendments, the State Water Board supports treatment and institutional controls and multi-benefit projects that control trash and achieve compliance with the prohibition of discharge for trash.
59.13	The lack of monitoring for Track 1 is inconsistent statewide application of the State's intent. It is unclear whether Track 2 full capture require monitoring.		Please see Response to Comment 56.1.
59.14	Trash assessments in receiving waters will create highly variable data that precludes yearly comparisons and an evaluation of the causal deposition mechanism will be purely speculative.		Comment noted. The proposed final Trash Amendments removed the requirement for receiving water monitoring. Monitoring must demonstrate the effectiveness of controls and compliance with full capture system equivalency. However, quantifying the amount of the trash in the receiving water is an important component to measuring success of control to improve the condition of the receiving water body over time. Please see Response to Comment 6.2.

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59.15	As a magnitude of effort consideration , the unincorporated area of Sacramento County has nearly 50,000 drop inlets in areas with priority uses*. State should consider deleting, 'Prior to installation' from the definition; or, provide pre-certification of types of devices/features for specified ranges of flow and/or allow certification (sign/stamp) by a Civil Engineer licensed in the State of California.		The State Water Board appreciates the complexity of tasks that permittees must undertake to install treatment controls. The intention of the certification process is to ensure that the general design of a full capture system effectively captures trash 5 mm or greater during the one-year one-hour storm event. The State Water Board intends for resources to be efficiently directed towards effective treatment controls that capture and remove trash. The State Water Board disagrees that "prior to installation" would penalize a community, as resources should be directed to treatment controls proven to be effective at capturing trash. Additionally, it is not the State Water Board's expectation that each device that is to be inserted will need to be certified. This would be highly infeasible. The certification process is for the general design of a full capture system, not for each individual system in a drop inlet, unless each system is entirely unique. Certified full capture systems are specified in Section 2.8 and Section 5 of the proposed Final Staff Report.
59.16	The associated staff report discusses prioritizing implementation by high trash generation rates and associates those rates to land-uses. With regards to residential-use, > 8O-percent impervious and 15-30 units per acre is used. The State needs either to continue the use of> 20 units per acre or explain the transformation from approximately 20-units per acre to >10 units per acre.		Comment noted. Please see Responses to Comments 26.3 and 44.19.
59.17	The Equivalent Alternate land use sentence is awkward and unnecessary. An MS4 does not need permission from the permitting authority to exceed a requirement of		The definition of 'equivalent alternate land use' has been revised for clarity. (See Ocean Plan Amendment and Part I ISWEBE definition for "equivalent alternate land uses.")

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	its permit.		
59.18	This description of tasks necessary to establish a comparative trash generation rate creates a framework of comparative activities and removes subjectivity but should not be constrained to the permitting authority. The State should define comparative trash generation rate in the Glossary and use it to replace ambiguous terms like 'substantial'.		Please see Response to Comments 6.6 and 12.2. Additionally, the State Water Board disagrees that "comparative" is ambiguous and do not consider "substantial" is a necessary change.
59.19	While elegant in its brevity, the current definition of TRASH could be legally construed to include virtually nothing; or, nearly every solid from plastic to sand. Ex: One could argue that a tossed burger wrapper is not 'Trash' in that it was not improperly discarded from a production, manufacturing or processing operation. In addition, the use of the word 'discarded' (to throw away) allows accidental releases or unrecoverable production-related materials (discharged during an accident) to be exempted. EX: The 'trash' ripped from Board Member Moore by the wind would not have been 'trash' because he did not 'discard' it - as much as it was taken from him.		The definition of trash states the general type of materials that are considered trash. Additionally, please see Response to Comments 18.1 and 50.34.
60.1	A Statewide approach is necessary when considering regulatory source control measures.		Comment noted. The Trash Amendments propose to provide a statewide framework and consistency to reduce trash in California's surface waters.

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60.2	State-level direction on standardizing trash quantification is also needed. Trash monitoring data is being used in a number of NPDES permits. However, there are currently no standards for measuring and counting trash, which leads to difficulty in interpreting trash data in general. The District recommends standardizing trash quantification at the state level to create consistency throughout the state. The District also agrees with CASQA's comment that the demonstration of effectiveness should not be limited to monitoring Best Management Practices (BMPs) performance. Permittees should be allowed to propose the method by which they demonstrate performance in their plan, such as through rigorous visual assessments.		Please see Response to Comment 4.6.
60.3	With this in mind, we support jurisdictional accountability throughout the watershed and we encourage the State Water Board and the applicable permitting authorities to incorporate these concepts throughout the proposed Trash Amendments and correlated permits. The District requests that the State Water Board include language in the Trash Amendments that makes it clear that a permittee is not liable for any discharges from MS4 facilities that the permittee does		A permittee is responsible for the discharges covered under the MS4 permit.

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	not own or operate.		
60.4	In a spirit of transparency, the District respectfully requests that the State Water Board extend the comment period by a minimum of 30 days and provide an additional workshop(s) in the Southern California area prior to adopting the Trash Amendments. Given the breadth of comments and concerns expressed by stakeholders at the July 16, 2014 workshop, the District requests that, when the revised draft of the Trash Amendments is released for public review, the entire document, not just the changed text, be open for further comment to allow stakeholders to consider the revised proposal in its entirety.		The Trash Amendments have been in development since 2010 with extensive stakeholders input from the multi-year efforts of the Public Advisory Group and the Focused Stakeholder Meetings in the spring of 2013. The State Water Board has considered the comments from all stakeholders at the public workshop on July 16, 2014, public hearing on August 5, 2014, and the 76 comment letters. Additionally, the State Water Board has accommodated one on one stakeholder requested meetings to discuss concerns and questions on the Trash Amendments. The proposed Final Staff Report and proposed final Trash Amendments would be only recirculated in the event there are new significant environmental impacts. Since there are no new significant environmental impacts, the State Water Board is not providing a written comment period for the revisions made to the proposed Final Trash Amendments and proposed Final Staff Report. The public may provide oral comments at the meeting at which the State Water board will consider adoption the proposed final Trash Amendments and approving the SED. (See Final Staff Report Section 2.14.)
60.5	The State Water Board should include the requirement for a baseline investigation that would assess and identify localized areas of high trash generation within their jurisdictions as a first step in the proposed regulations. The Trash Amendments have identified priority land uses that could be used to guide permittees. However, without a baseline that is specific to a local region/jurisdiction, it is unclear whether those land uses actually generate trash. The amendment should allow permittees the flexibility to customize their high priority areas		Please see Response to Comment 6.2.

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	based upon knowledge of local sources. This would allow limited resources to more accurately target local priority efforts. Additional time in the compliance schedule, to allow for baseline investigations, is also warranted.		
60.6	Providing alternative compliance tracks allows permittees the flexibility to select the appropriate approach. The District supports the State Water Board's efforts to incorporate flexibility in the Trash Amendments by including compliance track options. Track 2 incorporates a combination of strategies to address trash through implementing source control and other measures, in addition to installing full-capture systems where appropriate. This approach supports the watershed approach in the San Diego Regional Board's 2013 Municipal MS4 Permit. In addition, the installation of a network of full-capture systems through Track 1 may not be technically feasible for all permittees due to issues such as the physical constraints of the MS4 system that may limit or prohibit the ability to install these systems and could generate secondary issues, such as flooding. However, the District requests that the State Water Board provide clarification on how technical feasibility (or infeasibility) may be defined.		Please see Response to Comment 6.3.

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60.7	Compliance Expectations for Track 2. Although the District supports providing the compliance track options, there is concern that the dual alternative compliance track approach may lead to disjointed localized efforts. Permittees electing to implement Track 1 would be in compliance with implementation requirements if a network of full-capture systems were installed in the storm drains of priority land uses. However, the Trash Amendments do not identify whether these Track 1 permittees would be in violation of the trash prohibition of discharge if trash was found in their jurisdictions despite full implementation, or what may happen if this trash ends up ·in another downstream permittee's jurisdiction. Permittees need to know the compliance expectations prior to making a decision on a track option. To this end, clarification is requested on what constitutes a violation and how violations will be handled.		Please see Response to Comment 16.3.
60.8	Additionally, the Trash Amendments require that Track 2 achieve the same performance as Track 1; however, no guidance is provided on what will be considered an acceptable implementation plan, or how equivalency should be demonstrated. At present, there is no information on what efforts will be		Please see Response to Comment 6.2.

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	considered "equivalent" to full trash capture~. Compliance with Track 1 involves a quantitative assessment (i.e., number of full-capture systems), while compliance with Track 2 involves a qualitative assessment (i.e., effectiveness of control measures). Given the disparate nature of the compliance analysis for each track, the District is concerned that there isn't a standard for determining the equivalence of the two tracks and that potential liabilities may be assigned inconsistently depending on the track chosen. Permittees incur financial and compliance risks in choosing a track which has no guidelines for determining compliance, or by placing themselves in a situation where the guidelines would be subject to ongoing interpretation. We strongly recommend that clear guidance for the implementation plans and standards of equivalency be established prior to -- or with -- the adoption of the Trash Amendments. Clearly, establishing these expectations is essential to inform a permittee's choice of track.		
60.9	Monitoring requirements for both compliance tracks should be revised. Permittees should be allowed to propose the method for demonstrating performance in their plans. However, the District recommends		Please see Response to Comment 4.6.

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	the inclusion of general monitoring and reporting requirements in the Trash Amendments that would be uniform, regardless of the track selected. Elements of monitoring for both tracks should be the ability to demonstrate the effectiveness of the overall program and ascertain variations in the amount of trash discharged from the MS4, over time. In addition, receiving water monitoring should not be required since other sources contribute trash. While stormwater permittees may elect to conduct receiving water monitoring to demonstrate performance, it should not be mandated.		
60.10	The Trash Amendments, as currently drafted, would also require each permittee to develop and implement separate monitoring plans. The District recommends including language to provide permittees the flexibility to be able to collaborate with other agencies to develop watershed monitoring plans that could include both jurisdictional and watershed elements. This approach supports the San Diego Regional Board's watershed approach for the 2013 Municipal MS4 Permit, as well as current efforts by permittees to develop monitoring and assessment plans for watershed management areas in the region.		The Trash Amendments do not preclude collaboration of permittees within the same watershed. The Trash Amendments set the minimum framework for monitoring and reporting for Track 1 and Track 2 and crafted to provide flexibility to both permittees and permitting authority. The specifics of monitoring are at the discretion of the permitting authority as long as monitoring under Track 2 demonstrates the effectiveness of controls and compliance with the performance standard. This framework supports the San Diego's Water Board's watershed approach to include jurisdictional and watershed elements. (See Ocean Plan Amendments III.L.2.a.2 and Part I ISWEBE IV.A.3.a.2.)

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60.11	The Trash Amendments should limit the liability of MS4 permittees for trash originating from other regulated and non-regulated sources. The District supports CASQA's recommendation that the State Water Board require other regulated entities to implement the proposed Trash Amendments through a regulatory process external to the MS4 permits; and that the State Water Board establish non-point sources programs to control non-regulated sources of trash. The State Water Board should also include provisions to require implementation of the Trash Amendments, not only through inclusion in an MS4 Permit, but through other NPDES Permits, Waste Discharge Requirements, and Waiver Provisions.		Although the implementation provisions for compliance with the prohibition of discharge focus on trash discharge via storm water, it is well recognized that trash is transported to surface waters via both point and non-point sources. The Trash Amendments propose to implement the water quality objective for trash through a conditional prohibition of discharge of trash directly into waters of the state or where trash may ultimately be deposited into waters of the state. The prohibition of discharge applies to both permitted and non-permitted dischargers. Permitted dischargers would comply with the prohibition as outlined with the plan of implementation when such implementation plan is incorporated into the dischargers' NPDES permits. Dischargers with non-NPDES WDRs and waivers of WDRs that contain specific requirements for the control of trash shall be determined to be in compliance with the prohibition of discharge if the dischargers are in full compliance with such requirements. Under the original language, a discharger subject to an existing non-NPDES WDR or waiver of WDR could have been potentially in compliance with the requirements of the WDR, or Waiver of WDR, yet simultaneously out of compliance with prohibition of discharge included in the proposed Trash Amendments. Non-permitted dischargers must comply with the prohibition of discharge or be subject to direct enforcement action. Please see Response to Comment 6.5. (See Ocean Plan Amendment III.I.6 and Part I ISWEBE IV.A.2.)
60.12	Clarification on the definition of trash. The District requests that the State Water Board clarify the definition of "trash" under the Trash Amendments. The current definition in the Trash Amendments is somewhat vague, specifically regarding what is not included (such as green waste). This may lead to a broad interpretation across the state		Please see Responses to Comments 3.2 and 18.2. Additionally, please see Section 4 Issue 1 in the Final Staff Report.

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	by local regional boards. A clear definition of trash could provide consistency for permittees throughout the state.		
61.1	Rather than imposing new burdens on public transportation agencies that are not justified by the record, we ask the State Board to allow time for its own General Permit program to be implemented by BART and other public transportation operators in the Non-Traditional Permittee category, before concluding that additional regulation is necessary.		Trash is a prevalent and controllable priority pollutant across California. One of the main transport mechanisms of trash to receiving waters is through the storm water systems. The Trash Amendments focus on trash discharge reduction by requiring that NPDES storm water permits (specifically MS4 Phase I and Phase II Permits, Caltrans Permit, CGP, and IGP) contain provisions that require permittees to comply with the prohibition of discharge. These provisions focus on trash control in the locations with high trash generation rates in order to maximize the value of limited resources spent on addressing the discharge of trash into state waters. As a Non-Traditional Phase II MS4 permittee, the appropriate Water Board may require the Bay Area Rapid Transit (BART) and other similar Non-Traditional Small MS4 permittees to adopt Track 1 or Track 2 control measures over such land uses or locations. (See Final Staff Report Section 2.4.)
61.2	BART respectfully requests clarification from the State Board as to the scope of the term public transportation stations. To the extent that self-contained heavy rail transit stations are considered "public transportation stations" as defined, BART objects on the grounds that there is no evidence in the record to support the regulation of such stations as priority land uses generating significant amounts of trash. The State Board also indicates that the Proposed Trash Amendments will apply to "MS4 Phase I and Phase II NPDES		BART is a Non-Traditional Small MS4s that lacks jurisdictional authority over priority land uses. After reaching that determination in consultation with the applicable MS4, the appropriate Water Board may require the BART and other similar Non-Traditional Small MS4 permittees to adopt Track 1 or Track 2 control measures over such land uses or locations. (See Final Staff Report Section 2.4.)

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	permittees with regulatory authority over land uses." Although BART is a Non-Traditional Phase II Permittee, it does not have regulatory authority over land uses. The Draft Staff Report focuses on municipalities, suggesting that Proposed Trash Amendments are intended to apply to municipal operators of bus services. We request that the State Board clarify whether the Proposed Trash Amendments to apply to rail transit agencies operating self-contained station facilities, such as BART.		
61.3	The inclusion of public transportation stations in the scope of priority land uses is not supported by anything in these studies. The Draft Staff Report indicates that the purpose of identifying priority land uses is to "allow MS4s to allocate trash-control resources to the developed areas that generate the highest sources of trash" but provides no evidence that public transportation stations generate trash at rates comparable to residential, commercial or industrial land uses. In the absence of such evidence, there is no support in the record for a determination that public transportation stations should be included among trash priority land uses. Moreover, while there may be significant uncontrolled trash generation at other types of transportation facilities, BART		The intention of public transportation stations is bus stations and stops. These areas do generate trash, especially food container products and cigarettes. It is commendable that BART has existing institutional controls for trash. As BART is a non-traditional MS4 permittee, the permitting authority has the authority to determine and require additional trash control measure for BART to address the areas and locations that do have the potential to cause or contribute to impairments of beneficial uses for trash.

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	already has institutional controls in place which distinguish it from uncontrolled facilities.		
61.4	The studies cited by the Draft Staff Report do not support the inclusion of self-contained rail stations among priority land uses for purposes of the Proposed Trash Amendments.		Please see Response to Comment 61.8.
61.5	In light of BART's existing, effective trash control practices, as well as the lack of support in the cited studies, the is no basis in the record for including BART stations in the priority land use category as posing a risk of trash impairment to water bodies.		Please see Response to Comment 10.7.
61.6	BART recommends that the State Board establish a set of presumptions and standards such that, if specified trash controls are implemented pursuant to Track 2, the State Board and Regional Water Quality Control Boards would conclude that the results are equivalent to Track 1.		Please see Response to Comment 16.3.
61.7	The Proposed Trash Amendments require permittees to conduct monitoring and submit reports that indicate the effectiveness of the controls. However, the Proposed Trash Amendments and Draft Staff Report provide no guidance as to how such monitoring and reporting should be conducted, including how		Please see Response to Comment 4.6.

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	Track 2 permittees would determine the efficacy of their controls and any associated decrease in discharged trash. The State Board indicates that the required monitoring and reporting should be tailored to the type of compliance. BART agrees, and suggests that the State Board provide more specificity as to how Track 2 permittees should evaluate effectiveness. In particular, permittees choosing Track 2, which is inherently qualitative, should not be required to quantify the amount of trash discharged.		
61.8	While an SED may be prepared in lieu of a CEQA document under the State Board's certified regulatory program, the State Board remains bound by the broad policy goals and substantive standards of CEQA. The SED's primary purpose is to serve as an informational document, but the State Board has insufficiently explained why it relies so heavily on Southern California specific analyses for statewide impacts. In addition, it is not clear that incorporation by reference is appropriate here. The CEQA Guidelines indicate that incorporation by reference should be used for general background information, not for actual impacts analysis.		The only statewide impact of the proposed Trash Amendments is the reduction of trash in the state's water bodies. The localized potential impacts of implementation projects will be similar in nature and have been discussed in the draft Substitute Environmental Document (draft SED). The only section that incorporates the Los Angeles Water Board Environmental Impact Report by reference is the air quality analysis, and the draft SED explains that since the South Coast Air Basin has poorer air quality than other areas of the state, using the Southern California analysis would encompass the maximum possible impact of the proposed project. Although Section 15150(d) states that incorporation by reference is "most appropriate" for providing general background, this language is not limiting and Section 15150(e) specifically cites examples of materials to be incorporated by reference that specifically includes environmental setting information and specific effects analysis.
62.1	Entities with solid waste franchise authority are required to comply at		Comment noted. Municipalities should continue to create partnerships with solid waste franchise authority to reduce

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	no cost to the permittee.		trash.
62.2	Permittee is not responsible for trash generated by State and/or federal agencies.		Comment noted. State and federal agencies would be required to comply through their respective MS4 permit.
62.3	Extend the time frame to select a track from 3 months to 6 months.		Within eighteen month of the effective date of the Trash Amendments, the permitting authority shall either modify, re-issue, or adopt the applicable MS4 permit to add the Trash Provisions or issue an order pursuant to Water Code section 13267 or 13383. The permittee would have three months to provide written notice of the selection of the Track 1 or Track 2. If Track 2 is selected, then the permittee must also submit an implementation plan within eighteen months of the effective date of the implementing permit or the receipt of the order (whichever date is earlier). (Ocean Plan Amendment III.L.4.a.1; Part I ISWEBE IV.A.5.a.1.) The three month time frame to select a track was provided in order to allow for the maximum amount of time for implementation plan development. If six months were to be granted, then that would reduce the period for implementation plan development to 15 months. The State Water Boards do not think this change is necessary as the permittees have sufficient time to select a track and time for the implementation plan should the maximum amount of time.
62.4	The "one size fits all" statewide approach may not make sense with areas of low level density and development. For low development areas, a threshold (such as >25% of the catchment area has a priority land use) makes sense.		Please see Response to Comment 11.4 and 15.2.
63.1	SCVURPPP member agencies have concerns with the amendments as drafted because they would potentially require municipalities in		The Trash Amendments were crafted with the intention to be compatible with the efforts for trash control under the MRP and to not redirect limited resources for redundant efforts. The State Water Board worked with San Francisco Bay Water

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	the Bay Area to inefficiently redirect limited public resources away from activities currently aligned with trash reduction provisions in the MRP. For that reason, we support the recommendations proposed in the comment letter submitted by the Bay Area Stormwater Agencies Association (BASMAA) regarding the proposed amendments.		Board staff to craft and ensure that Track 2 language would be compatible with existing and future San Francisco Bay Municipal Regional Stormwater Permit (MRP) conditions. As the trash control provisions exist in the MRP, they represent an example of a Track 2 approach that the State Water Board intends to see incorporated into other MS4 Phase I permits across California, specifically with the combination of treatment and institutional controls and mapping for trash generation areas. Additionally, please see Response to Comment 4.2 and the rest of the Response to Comment Letter 4.
63.2	Provide consistency between the proposed narrative Water Quality Objective and trash discharge prohibitions by revising the prohibitions to include language that qualify that the trash discharges being prohibited and controlled by the specified implementation requirements, is the trash "in amounts that cause impairment of beneficial uses or conditions of nuisance in receiving waters"		Please see Response to Comments 4.1 and 10.9.
63.3	Provide an alternative (i.e., Track 3) to allow for compliance to be achieved via continued implementation the trash-specific provisions in the MRP.		Please see Response to Comment 4.2.
63.4	Effectively provide "certification" for all devices previously "approved" by SF Bay Regional Board staff as full capture systems that are installed or in the process of being installed in the Bay Area.		Please see Response to Comment 4.3.

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64.1	We urge the Board to determine that the San Francisco Bay Region Municipal Regional Stormwater NPDES Permit (MRP) currently meets or exceeds State Board requirements with respect to delineation of high trash generation areas, annual reporting requirements, and the trash load reduction timeline. We ask that you include language in the amendments formalizing this determination and clarifying Regional Board authority to implement stronger restrictions and timelines.		Please see Response to Comment 7.3.
64.2	We urge the State Board to confirm the Regional Board's authority for implementing the load reduction timeline detailed in the MRP. Permittees have submitted their Long-Term Trash Load Reduction Plans, which detail strategies for achieving zero trash loading by 2022. Regional stakeholders are committed to helping permittees reach this goal and create cleaner, healthier waterways for Bay Area residents and wildlife.	Trash* shall not accumulate in ocean waters, along shorelines or within those areas of the normal high water mark of inland waters in amounts that adversely affect beneficial uses or cause nuisance	The State Water Board supports the San Francisco Bay Water Board's authority to implement trash load reductions as detailed in the MRP and sees those requirements substantially equivalent with Track 2. Additionally the East Contra Coast Municipal Storm Water Permit issued by the Central Valley Water Board has similar requirements to the MRP, which are substantially equivalent to Track 2. To reduce redundancy, the proposed final Trash Amendments were modified to clarify this intention in the time schedule section. MRP and East Contra Costa Municipal Storm Water permittees are exempt from electing Track 1 or Track 2 as the permit requires trash controls that are substantially equivalent to Track 2. In addition, the submission of an implementation plan does not apply to the above permittees if the respective regional water board determines that the submitted implementation plan is equivalent to the implementation plan required by the Trash Amendments. (Ocean Plan Amendment and Part I ISWEBE Footnote 2; Ocean Plan Amendment III.L.4.a.1; Part I ISWEBE IV.A.5.a.1.) Additionally, the Trash Amendments specify that full compliance must occur within ten years of the effective date of

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			the first implementing permit, and the final compliance date may not be later than fifteen years from the effective date of the Trash Amendments. (Ocean Plan Amendment III.L.4.a.2-5; Part I ISWEBE IV.A.5.a.2-5.) The compliance deadlines in the MRP and East Contra Costa Municipal Storm Water Permit are 2022 and 2023, respectively. As those compliance deadlines would occur within fifteen years of the effective date of the Trash Amendments and the MRP and East Contra Costa Municipal Storm Water Permits are substantially equivalent to Track 2, the MRP and East Contra Costa Municipal Storm Water permittees are expected to achieve their final compliance deadlines without the need for additional time to compliance. The pertinent permitting authority may establish an earlier full compliance deadline than that specified in Track 2 time schedule (See Ocean Plan Amendment and Part I ISWEBE Footnote 2.)
65.1	We object to any such time extensions on the ground that regulatory sources controls are not effective to reduce litter in the ocean, inland surface waters, enclosed bays, or estuaries (collectively "water bodies"). Source controls such as plastic bag bans or fees are an ineffective method of litter control, and are merely symbolic. We agree with staff that product bans and product fees do nothing more than "remove a specific type of item from the waste stream." We do not agree and we object to the assertion that granting time extensions "would not have an adverse effect on the environment."		Regulatory source controls have been omitted from the final proposed Trash Amendments. Please see Responses to the General Response to Comment Letter 1 and to Comments 1.3 and 4.5. Commenter's concerns relate to regulatory source controls and time extensions which have been removed from the proposed Final Trash Amendments. (Ocean Plan Amendment at removed III.L.5; Part I ISWEBE at removed IV.A.6) Based on the revisions and discussions in the referenced responses, commenter's underlying arguments are not applicable to the Trash Amendments which will be considered for adoption by the Board and they will not be responded to in detail.
65.2	Based on CEQA Guidelines § 15250, we object to the proposed		Regulatory source controls have been omitted from the final proposed Trash Amendments. Please see the General

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	Trash Amendment as deferral of MS4 compliance would have a significant negative impact on the environment. Further such adverse effects would not be offset by any significant environmental benefits from a plastic bag ban or fee. CEQA Guidelines § 15250 states: "A certified program remains subject to other provisions in CEQA such as the policy of avoiding significant adverse effects on the environment where feasible." (Note: The CEQA Guidelines are binding.) Clearly, avoiding the significant negative environmental impact of time extensions for MS4 compliance is feasible simply by not permitting such extensions.		Response to Comment Letter 1 with regard to a plastic bag ban and regulatory source controls. Regarding the environmental impacts of granting a time extension, CEQA requires an analysis of potential environmental impacts based on the baseline conditions at the time the environmental analysis begins. Since the impacts of trash on the environment are currently occurring and are ongoing, granting a time extension does not change this baseline condition and; therefore, does not cause any new impacts on the environment. That being said, the time extension provisions have been removed from the proposed final Trash Amendments.
65.3	We object on the ground that the Staff Report contains no analysis whatsoever of the negative environmental impacts of the proposed time extensions. The Board cannot make an informed decision without such an analysis. At the very least, an SED or EIR must show a significant benefit from source controls such as a plastic bag ban or fee that would offset the significant negative impact of time extensions. Such a showing must be based on substantial evidence. (CEQA Guidelines § 15384.)		Please see Responses to the General Response to Comment Letter 1 and to Comments 1.3 and 65.2. Commenter's concerns relate to regulatory source controls and time extensions which have been removed from the proposed Final Trash Amendments. (Ocean Plan Amendment at removed III.L.5; Part I ISWEBE at removed IV.A.6) Based on the revisions and discussions in the referenced responses, commenter's underlying arguments are not applicable to the Trash Amendments which will be considered for adoption by the Board and they will not be responded to in detail.

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66.1	Solano County would like to follow the Track 1, with a 100% trash capture on all storm drains. However, without storm drains to service, the County could be forced into Track 2. The way the policy is written, Solano County would likely already be in compliance, as we have full capture system for storm drains (or, because there are no storm drains, there are no capture systems to put in place). However, at the workshop a representative from the State Board stated that this may instead force Solano County to follow Track 2, which appears to be an unreasonable approach. In the Draft Policy it states: "Under the proposed Trash Amendments, MS4 Phase I and Phase II NPDES permittees with regulatory authority over land uses can comply with the prohibition of discharge of trash under a dual alternative compliance approach or 'Tracks'" (p. 12). This states that Phase II MS4s have the option of compliance with Track 1 or Track 2, and Solano County should be no exception, even though the policies appear to be misapplied. Due to vagueness in the definition of "catch basins" in the 2012 Phase II MS4 Permit, the County has been working with San Francisco and Central Valley Regional Water Quality Control Boards to define "catch basins" to direct monitoring		The State Water Board appreciates the challenges for the definition of "catch basins". The State Water Board is not going to make an exception for Solano County in the proposed Trash Amendments. However, in the next Phase II MS4 Permit that incorporated the Trash Amendments, the State Water Board will work with both the San Francisco Bay and Central Valley Water Boards to craft implementation provisions that address the Solano County specifics. Most likely, since the Trash Amendments build on Track 1 setting the performance standard, then this standard will be very minimal for small MS4s with no curb and gutter MS4 system.

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	and compliance efforts for the MS4 Permit. Both Regional Water Boards have verbally or in writing agreed to define "catch basins" within Solano County as the spots in the County's MS4 system where open roadside ditches drop into streams, rivers, and receiving waters. Monitoring and testing will occur at these locations within the County. Recommendation: The County recommends that compliance with the final Trash Policy be kept consistent with Regional Boards' determination of "catch basins" within Solano County. The County should be able to direct full trash capture to the identified "catch basins" to obtain Track 1 compliance. This necessitates regional consideration and variability within the Draft Policy to identify MS4s that do not fit into the Phase I large MS4 storm and gutter system. Smaller MS4s with no curb and gutter system should be able to comply with Track 1, full trash capture, without undue difficulty of compliance.		
66.2	The State Water Board will be taking responsibility for the certification process for full capture systems going forward. Solano County asks that certification allows for reasonable methods of compliance for Solano County. For example, the County may not be able to use		The State Water Board will be taking the responsibility for the certification process of full capture systems, which is focused on the general design criteria and not each individual installation. The State Water Board will take into consideration the certification process from Solano County and other small MS4s with no curb and gutter MS4 system. (See Ocean Plan Amendment and Part I ISWEBE definition for "full capture system.")

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	established catch basin and/or trash net systems for compliance, as the County cannot tie into a curb/gutter/drain system. However in the interest of full capture, the County would be able to establish trash capture devices at the previously mentioned "catch basins" in Solano County, or where the storm ditch system goes into a body of water. Recommendation: The County recommends that the State Water Board take regional systems into consideration when certifying trash capture devices to allow for reasonable compliance for unusual conveyance systems such as Solano County. While statewide consistency is mentioned, if consistency creates unattainable trash capture compliance for small MS4s with no curb and gutter MS4 system, the Policy creates unfair difficulty for low-risk MS4s such as Solano County.		
66.3	If Solano County was forced into Track 2, the requirement for baseline and project-long monitoring would be difficult or impossible for Solano County because there are no drains to monitor. The only 'drains' in Solano County are ditches, culverts, and bio-swales on the sides of the road, which do not have a single entry point for monitoring and may be subject to dumping along their stretch. For an obviously rural and	Track 1: Install, operate and maintain full capture systems <u>within the MS4 system</u> ~~for all storm drains~~ that captures runoff from one or more of the priority land uses in their jurisdictions:	Please see Responses to Comments 11.4 and 66.1.

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	low trash-generating area like Solano County, it seems the difficulty of complying with Track 2 requirements would outweigh the marginal gains.		
66.4	One of the biggest concerns for Solano County is how the State Water Board will classify Solano County's stormwater system of roadside ditches in the Draft Trash Policy. The State Water Board made the determination to place Solano County under the Phase II Small MS4 permit despite the fact that Solano County has no separate sewer system, and there is an imperative that this should not create logistical and financial hardships for Solano County in complying with the Draft Trash Policy. We ask that the State Board make more detailed requirements for rural municipalities without sewer or drain systems for their commercial/industrial areas, including an equivalent Track 1 route.		The State Water Board does not intend to define Solano County's roadside ditches with the Trash Amendments. However the State Water Board will address the specifics in the next implementing Phase II MS4 permit. The intention is that the implementation provision necessary to be in compliance with the prohibition of discharge are focused on curb, gutter catch basins and priority land uses. Thus Solano County's implementation provision requirements would be based on trash load in catch basins in priority land uses. Please see Responses to Comments 45.16 and 66.1.
66.5	Solano County has concerns about the lack of definition for the priority land use areas (commercial, industrial, and transportation hub). The State Water Board needs to provide definitions for each area before implementing the policy for consistency across municipalities. Solano County appreciates that	A permitting authority may determine that specific land uses or locations (e.g. parks, stadia, schools, campuses, or roads leading to landfills) <u>have a Trash generation rate that is comparable to</u>	Please see Response to Comments 66.1 and 66.4.

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	priority land use areas will be identified not by zoning code but by actual land use. As seen in the attached spreadsheet, Solano County has considerable acreage that would be zoned for commercial, industrial, etc. land uses. However when you examine the actual areas, most of the land is on the outskirts of incorporated cities and has little developed commercial, industrial, etc. land use. This brings up the question of sizing to identify priority land use areas. There should be numerical sizing criteria for identifying priority land uses for commercial and industrial land use, as there is for high-density residential (30 units per acre). For example, although there is a zoned commercial area, it may have one or two commercial facilities per acre. While this is a 'commercial' area, it is not a high trash-generating area – similar to how not all residential areas are high trash-generating. By identifying a number of facilities per square foot, we can more accurately identify high trash-generating areas and avoid wasting resources on isolated commercial and industrial sites with little trash generation and foot traffic.	other priority land uses. ~~generate substantial amounts of Trash*.~~ In the event that the permitting authority makes that determination, the permitting authority may require the MS4 to comply with Chapter IV.B 3 a (1.) or Chapter IV.B.3.a (2.) (As the case may be) with respect to such land uses or locations if the land uses or locations drain into the MS4 system such that the permittee is able to cost effectively continue sole-implementation of its chosen Track.	

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66.6	If Solano County is forced into Track 2 requirements, we see an opportunity for prioritizing areas based on the initial monitoring requirement. Due to financial constrains (see next Concern), we believe that the Draft Trash Policy would be more effective if permittees could use the initial monitoring data to identify high- and low-trash generating areas, and direct resources accordingly. The current Draft Trash Policy allows for Permittees to identify high-trash generating areas and direct resources accordingly. However with finite resources, there is no way for MS4s to identify lower-trash generating areas and de-prioritize accordingly. This creates an issue of being unable to move resources to higher-risk areas, and/or disproportionally applying too many resources to lower-risk areas. The only option is for MS4s to expend more resources at higher-generating areas, while still having to expend the same resources for all other land uses regardless of risk, which would not be a reasonable approach. This creates the problem that MS4s will be unlikely to want to identify high-generating areas, as this will only necessitate unnecessary expenditure be spent on this trash program when funds are already limited. The Board must allow for	The permitting authority may determine that specific land uses, locations or activities, (e.g. State or Federally owned properties or railroads), are priority land uses or have a comparative trash generation rate to land uses specified in the Chapter. Such areas or facilities may include (but are not limited to) high uses campgrounds, picnic areas, beach recreation areas, parks not subject to an MS4 permit or marinas. In the event that the permitting authority makes this determination, an MS4 receiving flows from the designated land use may refer that facility to the permitting authority and/ or the U.S. EPA for regulatory oversight. Upon referral, the MS4 will not be held responsible for trash that accumulates in surface waters, along shorelines or adjacent areas from these facilities.	Please see Response to Comments 10.1 and 10.7.

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	more flexibility for MS4s to have the ability to move funds away from low-risk area. Recommendation: The County recommends that if the initial monitoring results show an area to have little to no trash and/or little to no risk for trash impairment, Permittees should be able to present the evidence to the Board and opt out of Draft Trash Policy requirements in low-generating areas going forward. This would conserve limited resources while allowing Permittees to focus efforts and funds on high-generating areas for trash.		
66.7	Solano County is committed to protecting and improving water quality, but has many concerns with appropriate funding levels when comparing risk levels. As with many MS4 policies statewide, the Draft Trash Policy is targeted at larger MS4s with higher trash outputs and higher pollution risks than Solano County. Solano County has a few very small areas which may qualify as priority land uses, and these areas are largely on the outskirts of incorporated cities and are lower-risk than the high density commercial and industrial areas in cities. Additionally, there are no trash-impaired water bodies within Solano County, which shows the relatively small risk that trash currently poses to beneficial use within the County.		Please see Response to Comment 10.4.

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	As with many policies, Solano County would have to comply with onerous requirements with no regard for relative trash risk. So, although Solano County is likely a very small contributor to trash in the watershed, it would still need to comply with costly regulations. Additionally, the fact that Solano County is so small and rural – placing it at a lower trash risk – is precisely why it may not be able to comply with the more straightforward and cost-effective Track 1. So rather than being rewarded for having a lower trash risk in the County, we will be burdened with higher relative costs to comply. We ask that the policy be amended to account for all MS4s in its logistics and its financial impact. Lastly, there are no current funding mechanisms to help permittees to obtain compliance. Prop 218 precludes stormwater entities from raising their fees for stormwater management. As such there are no ways for MS4s to recoup costs for compliance. Recommendations: The County recommends that non-competitive funding opportunities be made available to all MS4s for compliance with the Draft Trash Policy. Additionally the County recommends that a sized approach to compliance be adopted, with lower-risk, unusual MS4s like Solano County not being penalized for their		

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	systems with relatively onerous, restrictive, and expensive costs for compliance.		
67.1	We oppose the suggestion of local ordinances banning products as an effective means to combat litter. We urge the Board to reject this punitive option. Combating litter in public spaces, including waterways, demands attention to the source or root cause of the problem, which is irresponsible behavior. Banning products will negatively impact consumers, manufacturers, their employees and local economies, with little certainty that this type of measure will change behavior and prevent littering. This sends a very chilling message to existing product manufacturers and those contemplating expanding or siting operations in the state.		Please see General Response to Comment Letter 1 and Comment 1.3. Commenter's concerns relate to regulatory source controls and time extensions which have been removed from the proposed Final Trash Amendments. (Ocean Plan Amendment at removed III.L.5; Part I ISWEBE at removed IV.A.6) Based on the revisions and discussions in the referenced responses, commenter's underlying arguments are not applicable to the Trash Amendments which will be considered for adoption by the Board and they will not be responded to in detail.
67.2	We support the use of best management practices (BMPs) described as litter education, expanded recycling and placing additional trash cans in public spaces. We do not support mandatory producer take-back programs which place the full burden on manufacturers with unknown costs and unfettered authority to regulators. Recommendation: We urge the board to reject this option. This creates a state program financed by business, regardless of		Please see General Response to Comment Letter 1 and Comment 1.3. Commenter's concerns relate to regulatory source controls and time extensions which have been removed from the proposed Final Trash Amendments. (Ocean Plan Amendment at removed III.L.5; Part I ISWEBE at removed IV.A.6)

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	affordability and cost-benefit. Again, such a mandate does not address the root cause of the litter problem.		
68.1	The use of an asterisk throughout the document appears to be a reference to a definition contained within the Glossary but, this intension is not stated in the Amendment or its supporting documents. In addition, there are no corresponding asterisks in the Glossary.		The asterisk is used to designate a term as a defined term in the California Ocean Plan. All capital letters is used to designate a term as a defined term in the forthcoming ISWEBE Plan.
68.2	As was discussed at the July 16th workshop, there is no clear path to demonstrate compliance with Track 2 nor does it appear that it is possible to achieve full compliance via Track 2 based on research perform under the Municipal Regional Permit. If Track 1 is the only viable option for compliance, it becomes an unfunded mandate.		Please see Responses to Comments 6.2, 10.4, 16.3, and 29.4.
68.3	The presence of other significant trash deposition mechanisms suggest that a more global and cost-effective solution to trash accumulation is the path of 'true source control" as demonstrated by the Brake Pad Partnership and other similar methods such as extended manufacturer product responsibility, and redemption values.		Please see Response to Comment 4.5.

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68.4	The State should consider replacing ambiguous terms like 'substantial' with 'Comparative Trash Generation Rate' when defining alternative priority land uses.		Please see Response to Comment 59.18.
68.5	Define 'adjacent areas' in the Water Quality Objective.		Please see Response to Comment 50.9.
68.6	Include entities that have NPDES permits or WDRs but may not operate a defined MS4 system or be regulated as an industrial discharger such as special districts overseeing the collection of trash.		Please see Response to Comment 10.6
68.7	Under the Prohibition of discharge for Pre-Production Plastics (PPP), please clarify if this section assigns discrete responsibilities for this prohibition to the manufacturers and/or users of PPP's or do these requirements fall under the responsibility of the local jurisdiction (MS4)?		Please see Response to Comment 12.3.
68.8	The fact an entity has 'regulatory authority' over a land use does not entitle that entity to install, operate or maintain a device on that private property.		Please see Responses to Comments 11.4 and 25.1.

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68.9	Track 2 compliance is not obtainable. Its efficacy and its comparability to Track 1 may be left up to the subjective future interpretation of equivalence by the courts. As such, Track 2 is not a viable option as written. Rather, objective criteria for the measurement of "performance results" of Track 2 should be explicitly delineated by the Amendment.		Please see Responses to Comments 4.6, 6.2, and 16.3.
68.10	A permittee may select Track 1 and identified a land use or location that may lie within the municipality's boundaries, however those discharges may not drain through the MS4's system to the receiving water (e.g. a nonpoint source park or facility that private drains directly into surface water). Therefore the permittee cannot be responsible for those discharges. In addition, the term "substantial' is vague and open to subjective interpretation. Trash generation rate for these newly-identified sources should be comparable to land uses listed by the Amendment.		Please see Responses to Comments 11.4, 25.1, and 59.9.
68.11	The State and Federal governments own properties that these proposed amendments define as priority land uses. However, with the exception of properties controlled by The California Department of Transportation (Department)		Comment noted. If these state and federal properties have a NPDES permit, then they will be subject to the Trash Amendments.

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	regulated under the provision of this Policy, a permittee has limited authority to require compliance at State or Federal facilities.		
68.12	It is important to recognize that prior to installation of any infrastructure, MS4 permittees must perform a plethora of tasks (including but not limited to mapping of priority land uses and the systems that drains those geographic areas, modeling hydraulics and hydrology (H&H) needed to support the infrastructure changes in a manner that reduces the potential for flooding, obtaining State certification of the selected full capture devices, securing financing, adopting governing ordinances, creating bid documents and contracting). Therefore, the MS4 may obtain an 'average of ten percent installed every year.' over the first five years, but it is unlikely that an MS4 could achieve that goal within the first two years of adoption of the Trash Amendment. The Glossary defines a Full Capture System as a system meeting certain specifications and which, prior to installation, has been individually approved by the Executive Director (or designee) after review of all relevant supporting documentation. Inclusion of, 'prior to installation' penalizes communities that have been proactive and installed trash capture devices that meet the Full		The State Water Board appreciates the complexity of tasks that permittees must undertake to install treatment controls. The intention of the certification process is to ensure that the general design of a full capture system effectively captures trash 5 mm or greater during the one-year one-hour storm event. The State Water Board intends for resources to be efficiently directed towards effective treatment controls to capture and remove trash. The State Water Board disagrees that “prior to installation” would penalize a community, as resources should be directed to treatment controls proven to be effective for capturing trash. Additionally, it is not the expectation that each device that is to be inserted will need to be certified. This would be highly infeasible. The certification process is for the general design of a full capture system, not for each individual system installation in a drop inlet.

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	Capture System specifications. In addition, State Board staff has suggested drop inlet type devices as (at least) one method of full capture compliance. The unincorporated area of Sacramento County has nearly 50,000 drop inlets within priority use areas. While not all 50,000 would immediately be submitted for Certification, the State should anticipate receiving 1 O's of thousands of submittals (or more) per year from across the State. The language should be modified to allow post-installation certification. If post-installation is not allowed, there needs to be language crafted that extends the compliance dates and absolves an MS4* from milestone compliance schedules if the State is unable to provide Certification in a timely (60-days) manner.		
68.13	As recognized during the July 16th (2014) workshop, 'source control' at the local level is limited to the banning of single-use products. This may only result in a transformation of the constituents within trash and not the desired reduction of trash. Statewide source controls that encourage waste/trash reduction (including but not limited to redemption value, legislation regarding extended manufacture product responsibility/product reformulation) could achieve that which neither Track 1 nor Track 2		Please see Response to Comment 4.5.

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	can which is the removal of trash from our environment. We encourage the State to partner with a broad stakeholder group to evaluate and implement true-source control prior to implementing the Trash Amendments. We encourage the State to consider developing/adding language that recognizes (via time extensions and/or milestone adjustments) local jurisdictions that can demonstrate more global and/or statewide true-source removal efforts.		
68.14	Although the State made clear during stakeholder meetings and the July 16th (2014) workshop there will be no monitoring required for those choosing Track 1, both the draft report associated with the Trash Amendments and the language used within this Section allow for inconsistent statewide application of the State's intent.		Please see Response to Comment 56.1.
68.15	While the State made-clear during the July 16, 2014 workshop that there will be no monitoring required for those geographic areas within a Track 2 community that are "fully-captured", both the draft report associated with the Trash Amendments and the language used within this section allow for inconsistent statewide application of the State's intent.		Please see Response to Comment 56.1.

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68.16	The permittee can only be responsible for discharges from the MS4*. Therefore, delete 7.b. (5) as it is superfluous in light of 7.b. (4)- which requires the MS4* to report changes in the amount of trash discharged from its system. In addition, Trash assessments in receiving waters will generate highly variable data that precludes yearly comparisons and an evaluation of causal deposition mechanisms will be speculative.		Please see Response to Comment 4.6.
68.17	It is unclear if each full capture system must be certified 'prior to each installation' or if so long as it receives an overall technical certification by the State that it meets the specifications of a full capture system. This penalizes communities that have been proactive with regards to trash capture and provides no discernable benefit. In addition, State Board staff has suggested drop inlet type devices as (at least) one method of full capture compliance. Delete: 'Prior to installation' from the definition; or, add language that allows pre-certification by the Executive Director or designee of the State Water Board of full capture devices and/or features for a range of flows or allow certification (sign/stamp) by a Civil Engineer licensed in the State of California.		The intention is for certification is for the overall technical specifications of the full capture systems, and not the certification of each individual full capture system installation. Additionally, please see Responses to Comments 59.15 and 68.12.

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68.18	As currently constructed, the reference to 'it' and 'its' may be misinterpreted as to referring to the applicable permitting authority. Instead the language should be clarified by using the term "MS4" in its place. It should be made clear under the language of this section that the MS4 should be allowed to substitute alternative land uses for the listed land uses on a one-for-one basis if they are found to generate higher rates of trash. The second sentence description of tasks necessary to establish a 'Comparative Trash* Generation Rate' establishes a framework of comparative activities, removes subjectivity and should not be at the discretion of the permitting authority to approve or reject.		Please see Response to Comment 59.18. Additionally, the reference to “it” and “its” has been adjusted to “MS4 permittee” and “MS4 permittee's,” respectively, in the proposed Trash Amendments. (See Ocean Plan Amendment and Part I ISWEBE definition of “alternate equivalent land uses” within the definition of “priority land uses.”)
68.19	The current definition of trash is far reaching. It can be legally construed to include virtually every solid material from common trash to sand.		Please see Responses to Comments 18.2 and 59.19.
68.20	The retrofitting existing drainage systems with full capture devices that include both drain inlet screening or inline devices may result in adverse effects on the hydraulic capacities of those systems that could result in significant localized flooding and unsafe roadway conditions. The Substitute Environmental Document page 135 Section 6.8.2 of the staff		Properly designed systems will have bypass mechanisms that should prevent localized flooding in most areas. Installation of devices in areas where snow accumulation occurs may be an issue and will need to be taken into consideration when designing, operating, and maintaining the device. See Final Staff Report sections 5.1.1-5.1.3 (pp 93-96).

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	report, does not adequately address this issue. The document indicates that proper maintenance is adequate mitigation for the issue of 'clogged devices' that may cause flooding, mainly due to trash accumulation and leaf litter and therefore this is a less than significant impact. In areas with ice and snow accumulation, ongoing maintenance of drain inlet capture devices will not mitigate clogging devices due to ice and snow. In these higher elevations, clogged devices may exacerbate driver safety issues, cause flooding and additional erosion due to flooding, and restrict access to the storm drain system for maintaining flows in the winter. The only solution for communities subjected to these conditions is to install vortex devices within their mainlines which is more expensive and difficult to access under snow load conditions. The requirements of the Trash Amendment should take into consideration winter weather conditions and be seasonally relaxed to accommodate them.		
69.1	The Agency supports the recommendation to allow institutional controls, such as product bans, to be used in combination with structural controls to meet the prohibition of trash discharge. Our Agency adopted a single use bag ban ordinance in 2012 on behalf of all the		Please see Response to Comment 4.5.

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	cities in Alameda County. The ban is proving to be an effective method to dramatically reduce this source of litter that finds its way into our waterways, and reduce waste.		
70.1	An enforceable statewide trash policy will have annual numeric reduction criteria with specific deadlines to ensure enforcement of the policy is feasible and effective. In addition, a statewide trash policy should have mandatory monitoring and reporting requirements to determine actual reduction rates. The proposed Trash Amendments do not require monitoring and reporting of reduction rates under Track 1. Neither track states numeric annual reduction criteria. Both tracks should require numeric monitoring and reporting. This ensures a uniform, efficient, and reliable system that holds permittees equally accountable. Permittees will adopt additional source and institutional controls to meet these monitoring and reporting requirements ensuring swift compliance.		Please see Response to Comment 6.2.
70.2	To remedy this expensive problem, the Board should adopt numeric annual reduction criteria: the most efficient, enforceable policy possible keeping in mind limited staff resources.		Please see Response to Comment 6.1.
70.3	To address the threat to our		Please see Response to Comment 4.5.

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	waterways, Surfrider recommends incentivizing source controls that will help the Board attain its own goals of ridding pollution from our waters. The Board can influence municipalities through the Trash Amendments in two ways: First, it can incentivize source controls such as plastic bag bans by allowing extended time for compliance to municipalities who enact such a source control measure. Second, the Board should adopt a policy that incentivizes source controls under both Track 1 and Track 2. Surfrider supports incentivizing source controls, such as plastic bag bans, by allowing municipal permittees compliance time extensions for each source control it implements, limiting the time extension to three years.		
70.4	High-traffic beaches and parks represent a significant amount of trash that enters the water. Beaches and parks are frequently located near water resources such as rivers and oceans resulting in pollution "hotspots." Surfrider urges the Board to remove discretionary language and require local water boards to identify non-point source polluters such as beaches, and adopt issue waste discharge requirements ("WDRs"). Surfrider recommends specifically addressing beaches as trash hotspots. We further recommend requiring permittees to		Please see Response to Comment 6.5.

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	conduct trash hotspot surveys to determine areas where trash is being directly discharged into a body of water.		
70.5	A ten to fifteen year compliance deadline far exceeds the time frame necessary to implement these measures to eliminate trash from our waters. Trash pollution, especially plastic pollution, is an urgent problem that poses serious risks to public health and the environment. The State Board should act firmly and swiftly to deal with this statewide problem. Therefore, Surfrider recommends reducing the compliance deadline to five years.		The State Water Board agrees that trash poses serious risks to public health and the environment. To allow for statewide consistency and provide sufficient time for permittees to successfully achieve the prohibition of discharge, the Trash Amendments propose a ten year compliance deadline for both Track 1 and Track 2, which allows for implementation of trash controls to occur over at least two permit cycles. This provides the ability to use the second permit cycle to build on the first permit and allow for adaptive management. (See Ocean Plan Amendment III.L.4.a.2-3 and Part I ISWEBE IV.A.5.a.2-3.)
70.6	If the Board refuses to adopt a "zero trash" policy, we urge the Board, at minimum to change the language from "trash shall not accumulate in ocean waters" to "ocean waters shall not contain trash."		Please see Response to Comment 6.1.
71.1	A more comprehensive policy would require full catch systems while simultaneously encouraging source reduction efforts, such as plastic bag bans, and educational outreach to reduce the amount of trash generated all together. Allowing a permittee to choose Track 1 without requiring an actual showing of trash reduction through monitoring reports discourages permittees from implementing more holistic methods of trash reduction.		Please see Response to Comment 6.10.

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71.2	The State Water Board should hold municipalities accountable by compelling them to calculate the current amount of trash they release into the water, and then develop a method for calculating their trash reductions annually. Numerical goals should be set for each permittee to ensure enforceable compliance and swift success at eliminating trash from our water.		Please see Response to Comment 6.2.
72.1	The amendments will certainly have an impact at preproduction plastic pellet transfer sites that include transload facilities and other tracks where UPRR has leased property to customers for transload of preproduction plastic pellets. Given the number of these facilities in the state, the regulations will impose a significant cost on those facilities to comply.		The State Water Board finds that preproduction plastics are not acceptable in surface waters, as clearly stated with a prohibition of the discharge for preproduction plastics. Preproduction plastic pellet transfer sites, such as transload facilities, should implement strict BMPs. If the Water Boards finds a gross discharge of preproduction plastic pellets at such as transfer site, then the Water Boards will work with Union Pacific Railroad via an information transfer to determine the party for enforcement action.
72.2	Union Pacific's main concern however is with the broad definition of trash and the prohibition of trash in discharge. The definition seems to capture the entire railroad regardless of the process or activity conducted on land used for industrial purposes. This broad definition and the trash prohibition would set up an impossible standard for the railroad to meet – it would be infeasible to install full capture systems or monitor other compliance options along		As Union Pacific Railroad does not have NDPES permit the conditions of Track 1 and Track 2 are not applicable. The State Water Board does not expect that Union Pacific will need to install full capture systems or monitor every mile of track for trash. However, if there is a gross discharge of trash the Water Boards will first provide a notice to request more information instead of a violation.

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	every mile of track in this state 24 hours per day.		
73.1	EPA recommends that the TCAs explicitly call for adaptive management based on monitoring the effectiveness of controls and modifying control strategies as necessary to attain the water quality objective. EPA recommends that receiving water monitoring pursuant to both Track 1 and Track 2 focus both on the volume of trash and the type of trash present, to allow for adaptive management, including potential development of source control strategies.		The State Water Board agrees that monitoring is a key component to assessing that the implemented trash controls are leading to the achievement of compliance with the prohibition of discharge and protecting the beneficial uses of California's surface waters. Additionally, the State Water Board agrees that monitoring should be utilized by permittees to provide for adaptive management decision making for implementing trash controls. With limited resources, the most effective combination of controls to control trash should be used to determine compliance with the permit terms for the prohibition of discharge of trash. The narrative water quality objective for trash is implemented through the prohibition of discharge of trash. (Ocean Plan Amendment at III.I.6; Part I ISWEBE at IV.A.1.) The Trash Amendments propose a tailored approach to provide flexibility to Water Board permit writers to design monitoring programs that reflect the compliance methods elected by permittees along with regional characteristics. Due to the cost and efficacy of full capture systems, the State Water Board does not believe that the type of monitoring proposed by EPA is necessary for MS4 permittees complying under Track 1. Instead, MS4s complying under Track 1 would provide a report to the applicable Water Board demonstrating installation, operation, and maintenance of full capture systems on an annual basis. MS4 permittees complying under Track 2 must develop and implement annual monitoring plans to demonstrate the effectiveness of the controls and compliance with full capture system equivalency. (Ocean Plan Amendment at III.L.5; ISWEBE Part I at IV.A.6.) This monitoring requirement is intended to establish an adaptive management program similar to what EPA is suggesting. For statewide consistency, all Track 2 monitoring programs should be striving to answer the same fundamental questions, which may include receiving

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			water monitoring. However, other approaches could also be used to determine the efficacy of the control programs. The proposed Final Trash Amendments, in the definition of full capture equivalency, provide for two examples of how trash control could be assessed, only one of which requires monitoring within the receiving water. Please see Response to Comment 6.2.
73.2	EPA recommends that the Monitoring and Reporting provisions of the TCAs explicitly require that permittees complying via both Track 1 and Track 2, and Caltrans, submit a monitoring plan for review and approval, including an opportunity for public review. To conserve staff resources, a provision could be included for the plans and reports to be deemed approved if the permitting authority doesn't provide comments within a defined timeframe (e.g. 60 or 90 days). EPA recommends that the TCAs include specific expectations for the monitoring plans as included for the monitoring reports, such as the type of data to be collected (i.e. volume, type, etc.) to ensure entities in same area complying under Track 1 and 2 will collect complementary data. Additionally, EPA recommends that the state should specify how data will be compiled and stored to provide consistency across Regional Boards.		The Trash Amendments are amendments to statewide water quality controls plans to provide the framework for the trash control provisions to be incorporated as permit terms into NPDES permits, WDRs, and waivers of WDRs. The Trash Amendments aim to achieve the balance between prescriptiveness and flexibility for Water Boards permit writers. Upon insertion of the trash provisions into the permits, the permittee shall be required to develop monitoring plans that "demonstrate the effectiveness of [Track 2] and compliance with full capture system equivalency." Monitoring reports must be submitted on an annual basis. The permittee shall be required to comply with such permit terms. Additionally, the Trash Amendments specify that the "following monitoring and reporting provisions are the minimum requirements that must be included within the implementing permits." (Ocean Plan Amendment III.L.5; Part I ISWEBE IV.A.6.) That is to say that the permitting authority may determine additional monitoring and reporting requirements are appropriate. It may be appropriate for these comments to be directed to the pertinent water board as it modifies or adopts a permit to incorporate the trash provisions. State Water Board is not inclined to include permitting authority review and approval and/or a public process for the adequacy of the monitoring plan within the terms of the Trash Amendments.

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73.3	The first of the priority land use definitions, high-density residential, is defined as all land uses with at least 10 developed dwellings/acre. This would generally exclude a residential neighborhood made up of solely single family homes. A residential neighborhood of single family homes may generate a high volume of trash, especially if there is a commercial district or a bus stop in the nearby vicinity.		The priority land uses are based on lessons learned and extensive data collected from permittees with existing trash controls implemented in accordance to a Trash TMDL or permit conditions. The priority land uses include five categories of land uses that generate high amounts of trash. (Ocean Plan Amendment and Part I ISWEBE at definitions for "priority land uses".) The State Water Board recognizes that other land uses may generate higher rates of trash, for example, in some cities solely single family homes may generate high amounts of trash. To allow for these occurrences, the Trash Amendments include a provision for a MS4 permittee to focus on "equivalent alternate land uses" under both Track 1 and Track 2. (Ocean Plan Amendment and Part I ISWEBE at definitions for "alternate equivalent land uses".) Quantification measures such as street sweeping, mapping, and visual trash presence surveys can be used to prioritize these land uses for Track 1 or Track 2 controls. The aim of the Trash Amendments is to address the areas with the highest trash generation rates not all land uses. This can be accomplished with the five priority land uses and provision of "alternative equivalent land uses."
73.4	The definitions of Industrial and Commercial land uses stipulate that the "primary" activities on developed parcels must be commercial or industrial. The implication is that the majority of the land must be commercial or industrial in order to trigger MS4 trash controls. The presence of a high trash generating commercial or industrial activity should trigger trash controls regardless of whether such activity is the primary land use in a given area.		Few areas exist where trash is not generated. However, a focus of the Trash Amendments is to control trash in areas with high trash generation rates. The industrial and commercial definitions were crafted to focus trash controls on land uses where the majority of the catch basin includes industrial and commercial uses. The State Water Board recognizes that other land uses may generate higher rates of trash. The permitting authority has the discretion to include specific land uses and locations determined to generate substantial amounts of trash and require additional trash controls outside of priority land use locations. (Ocean Plan Amendment at III.L.2.d; Part I ISWEBE at IV.A.3.d.) Please see also Responses to Comments 6.6 and 73.3.

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73.5	The use of the term "predominate" in the Mixed Urban definition implies that the listed land uses must make up the majority of the area under consideration. If the mixed uses present generate high volumes of trash, that area should be subject to controls, regardless of whether or not these uses make up a majority of the land area.		Please see Responses to Comments 11.4, 73.3, and 73.4.
73.6	Commercial and industrial enterprises which generate trash, as well as public transportation stations, have trash impacts beyond the immediate areas in which these land uses are located. Trash controls should be implemented in areas (including low and medium density residential areas) which are located adjacent or in close proximity to commercial or industrial activities that result in trash generation, and in areas adjacent or in close proximity to public transportation stations.		Please see Response to Comments 73.3 and 73.4.
73.7	Concerns with land use definitions also apply to the "significant trash generating areas" under the jurisdiction of Caltrans. Caltrans must address highway on- and off-ramps located "in high density residential, commercial and industrial land uses." EPA recommends that in order to cover high trash generating areas, Caltrans should implement controls if land uses which generate		The wide variety of sites, locations and surrounding land uses make it infeasible for the State Water Board to determine a priority where the most likely areas of trash generation will be within Caltrans facilities. For this reason, the Trash Amendments requires Caltrans to, include in its implementation plan a description of the locations of its significant trash generating areas. State Water Board agrees that it is likely that significant trash generating areas will likely be adjacent to highway on-and off-ramps, and likely more within urban areas than non-urban areas. However, the State Water Board is unaware of studies of sufficient reliability that would support

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	trash are present adjacent or in close proximity to on/off-ramps.		more prescriptive requirements. The Trash Amendments will require Caltrans to implement trash controls if the adjacent land uses to highway on-and off-ramps are determined in consultation with the permitting authority to be significant trash generating areas. To the extent these areas overlap priority land uses, the amendment allow coordination with a MS4 Phase I or Phase II permittee's control programs. That accommodation may be utilized to address the areas of concern pointed out in this comment and further revision to the Trash Amendments is not warranted.
73.8	EPA recommends that the TCAs be revised to also provide the opportunity for members of the public to request to the regional permitting authority that specific land uses or locations be added for trash control coverage under permits issued to MS4s and Caltrans.		Actions required by the amendment will be incorporated into waste discharge requirements, which are adopted through a public process. Members of the public will be able to request to the permitting authority add specific land uses or locations for trash control coverage under permits issued to MS4s and Caltrans. Local knowledge is an important component to identifying specific areas that generate high amounts of trash and members of the public can aid the permitting authority in determining specific land uses or locations that need additional trash controls.
73.9	The TCAs' details focus on NPDES permits and are less explicit about expectations for implementation in areas covered by WDR and Waivers of WDRs. We recommend the TCAs specifically reference the "Policy for Implementation and Enforcement of the Non-point Source Pollution Control Program" and provide clearer direction for how compliance in these areas will be achieved. For example, we suggest considering more explicit requirements to identify and address sources of trash that are not subject to NPDES permits.		Although the implementation provisions for compliance with the prohibition of discharge focus on trash discharge via storm water, it is well recognized that trash is transported to surface waters via both point and non-point sources. Statewide, nonpoint source discharges of trash cause less of an impact to state water than point sources. However, at the local or regional level nonpoint sources can be a substantial source of trash. These areas may include high usage campgrounds, picnic areas, beach recreation areas, and marinas, which can be subject to WDRs or conditional waivers of WDRs. These types of areas would be assessed by the Water Boards to determine if trash controls are necessary. The Trash Amendments specify that that a water board may require dischargers without NPDES permits, WDRs, or waivers of WDRs to implement "any appropriate trash controls in areas or

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	Priorities for non-permitted high trash areas (e.g., beaches) could also be identified in the updated Nonpoint Source Management Plan currently being developed by the State. As noted in a previous comment, EPA recommends the use of adaptive management based on findings on the effectiveness of NPDES controls, including the results of receiving water monitoring. As monitoring identifies trash in receiving waters, MS4 permittees may identify sources of trash that are not under their jurisdiction which could be addressed by WDRs and waivers of WDRs.		facilities that generate trash." Such areas may include "high usage campgrounds, picnic areas, beach recreations areas, parks not subject to an MS4 permit, or marinas," as well as other areas. (Ocean Plan Amendment at III.L.3; Part I ISWEBE at IV.A.4.) For such areas determined to require trash controls within a WDR or waiver of a WDR, management practices could include enforcement of litter laws, education, recycling programs, more or better trash receptacles, and/or more frequent servicing of trash receptacles or similar controls that achieve trash control. This approach is recommended as it targets regional regulation of the discharge of trash from locations with high trash generating rates. Many of the items in this comment would be appropriately directed to the State Water Board's consideration of adopting a revised Nonpoint Source Management Plan. Additionally, receiving water monitoring may be a necessary component to assess compliance with the prohibition of trash and trash control effectiveness, as well as highlight additional locations where trash controls are necessary. However, receiving water monitoring is not a required component with monitoring for Track 2 or Caltrans to provide flexibility to permittees to development a strategy to demonstrate the effectiveness of trash controls and compliance with full capture system equivalency. See also Response to Comment 7.12 for further discussion on receiving water monitoring.
73.10	We suggest that the TCAs specify the regulatory vehicle(s) to be used to ensure compliance with the prohibition of preproduction plastic not covered by the IGP. We urge the State to utilize all available tools to ensure that industries that use or transport preproduction plastics are addressed in a holistic manner that prevents the discharge of these materials. Additionally, the TCAs		The prohibition of discharge on preproduction plastics is intended to build upon the existing efforts in the IGP. There are a number of locations that are outside of coverage of the IGP, such as railroad transload stations. These locations would be subject to the outright prohibition of discharge of preproduction plastics contained the amendment. The prohibition of discharge on preproduction plastic is intended to provide a clear enforcement mechanism for the Water Boards if there is a discharge of preproduction plastics to areas outside of the coverage of the IGP. Additionally, regardless of the proposed Trash Amendments, all facilities with the potential to discharge

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	could be expanded to provide for increased coordination among industries and MS4 permittees to identify preproduction plastic users which are lacking required permits. EPA recommends specifying any expectations for new or revised language in the existing IGP or construction general permit (CGP), or new requirements on industrial/construction facilities which are already required to control trash.		preproduction plastics would still continue to comply with the "Preproduction Plastic Debris Program" under Water Code section 13367(a) and the requirements in the IGP (Order No. 2014-0057-DWQ) to comply with the prohibition concerning preproduction plastics. Additional text has been added to the prohibition language in Ocean Plan Amendment III.I.6.e and Part 1 ISWEBE IV.A.2.e to provide clarity on this point.
73.11	EPA recommends the policy be more specific for termination of permit coverage related to the IGP and CGP: "Termination of permit coverage for industrial and construction storm water dischargers shall be conditioned upon the proper operation and maintenance of all controls." There are various circumstances under which construction or industrial permit coverage may be terminated, and the policy may need different requirements depending on the circumstances. For construction facilities, the language appears to indicate a requirement for post-construction controls for trash collection be installed and maintained. If this is the case, the policy should provide additional detail on the specifics and permitting mechanisms for ensuring compliance. For industrial facilities, the TCAs could state that all trash		When a facility or site wants to terminate coverage from the IGP or CGP, a Notice of Termination must be submitted to the permitting authority. For the Notice of Termination to be approved by the permitting authority, a set of conditions need to be met by the permittee as outlined in the respective permit. For example, Section II.D.1.d of the CGP (2009-0009-DWQ amended by 2010-0014-DWQ & 2012-0006-DWQ), states that one condition for a construction site to be considered complete is when "construction materials and waste have been disposed properly." The intent within the proposed Trash Amendments is to add trash controls to the list of conditions the permittee or discharger must complete in order to be terminated from coverage from under the IGP or CGP. State Water Board staff agrees with U.S. EPA's suggestions for termination language to be further specified, however the proper place for this detail is within the IGP and CGP. Re-opening the IGP and CGP is beyond the scope of this project.

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	must be properly disposed of and the site secured before coverage may be terminated.		
73.12	We recognize that in the Los Angeles Region extensive trash control measures are being implemented throughout MS4s, that there has been significant progress implementing these controls, and it is our view that these required controls should not be modified by the TCAs. However, as noted previously in these comments, we recommend that the TCAs be modified to require receiving water monitoring to determine if the water quality objective is being achieved, and to explicitly call for adaptive management based on the effectiveness of NPDES permits controls, including the identification of trash sources that may or may not be under the jurisdiction of permittees. These recommended modifications to the TCAs apply across the State, including the Los Angeles Region.		The Los Angeles Water Board has led the way with effective trash management strategies with the Los Angeles River Watershed Trash TMDL and the other 14 trash and debris TMDLs. Since the adoption of the trash and debris TMDLs, significant trash reduction and trash control has occurred in the Los Angeles Region. State Water Board staff finds the trash control efforts by permittees in the Los Angeles Region to be commendable. These effective strategies demonstrate that trash control is both necessary and achievable statewide. The State Water Board staff has evaluated the efforts of the existing trash and debris TMDLs in order to develop the proposed Trash Amendments. In the evaluation process, the State Water Board consulted with the Los Angeles Water Board about the present day status of the trash and debris TMDLs and the proposed Trash Amendments. Based on this consultation, the proposed amendment does not propose changes to the Los Angeles Water Boards TMDLs. However, as trash and debris TMDLs are nearing the end of compliance, the proposed amendment directs the Los Angeles water board to hold a public meeting to consider the scope of existing TMDLs and to assess the progress, feasibility, and available resources of the trash control effort. (Ocean Plan Amendment at III.L.1.b; Part I ISWEBE at IV.A.1.b.) For the rest of the state, the proposed revisions to the Trash Amendments include a requirement for dischargers to either install full capture across their systems, or demonstrate full capture equivalency of other control programs. This requires dischargers to evaluate trash generation and control rates and demonstrate that control is equivalent to what would be achieved if full capture devices were installed. This effectively an adaptive management program. However, the State Water Board disagrees that receiving water monitoring is the only way to assess effectiveness. (See Response to Comment 73.1.)

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			Also, as noted in the Staff Report section 1.5, The main transport pathway of trash to receiving water bodies is through storm water transport. Capturing trash in the storm drain system should capture most trash the priority land use areas, which are where most trash is generated. However, it is not the intent of the State Water Board to require MS4s to bear full responsibility for trash from all sources and thus MS4s are not required to account for trash from other sources. Instead, the Trash Amendments provides in Section 3 that Permitting Authority may require dischargers other than MS4s to implement any appropriate trash controls in areas or facilities that may generate trash.
73.13	For the San Francisco Bay Region, we recommend the State reconsider how the TCAs will impact the implementation of existing trash provisions and compliance schedules, and ensure that coverage under the TCAs is as protective as it would be under the San Francisco Bay Regional Water Quality Control Board's current approach for trash control under its Municipal Regional Permit.		Please see Response to Comment 7.3.

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73.14	We recommend further clarity be provided on the intersection between the time schedules in the TCAs and the State's Compliance Schedule Policy [SB #2008-0025]. We further recommend that the TCAs better describe the requirements, set forth at 40 C.F.R. §122.47, for including a compliance schedule in an NPDES permit, such as justifications for the specific need for and length of the compliance schedule allowed and interim milestones (per annum) for any compliance schedule longer than 1 year.		The State Water Board's Policy for Compliance Schedules in NPDES Permits (at http://www.swrcb.ca.gov/board_decisions/adopted_orders/resolutions/2008/rs2008_0025.pdf) applies to NPDES permits adopted by the Water Boards that must comply with Clean Water Act section 301(b)(1)(C). (See Resolve Clause, No. 2.) The Compliance Schedule Policy applies to traditional point source discharges and not municipal storm water discharges. Additionally, the Water Board's Compliance Schedule Policy does not specifically apply to compliance schedules for prohibitions. (See Whereas Clause No. 11.) The Trash Amendments' compliance schedules pertain to an NPDES permittee's requirement to comply with the prohibition of discharge of trash. (Ocean Plan Amendment at III.L.4 and III.L.5; Part I, ISWEBE at IV.A.5 and IV.A.6.) The Water Boards have authority to include compliance schedules in an NPDES permit when the State's water quality standards or regulation include a provision that authorizes such schedules in an NPDES permit. Consistent with the above authorities, the Trash Amendments set forth the time schedule requirements applicable to NPDES permits regulating the MS4 permittees. When a water board modifies, re-issues, or adopts an applicable permit, the Trash Amendments require the water board to include the time schedule requirements contained in the Trash Amendments, including, where applicable, those pertaining to a permittee providing notice of whether it will comply Track 1 or Track 2, submission of the implementation plan, demonstrating interim achievements or milestones towards full compliance, and submission of monitoring plans and annual monitoring reports. Water Code section 13263, subdivision (a), requires a water board to prescribe such requirements in permits as necessary to implement any relevant water quality control plan. (See also Water Code § 13377.)

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74.1	Indeed, this sensible finding to treat campuses individually on a case-by-case basis dependent on the amount of trash generated is included in the proposed regulations under Section L.2.d. which states: "d. A permitting authority* may determine that specific land uses or locations (e.g., parks, stadia, schools, campuses, or roads leading to landfills) generate substantial amounts of Trash*. In the event that the permitting authority* makes that determination, the permitting authority* may require the MS4* to comply with Chapter III.L.2.a. or Chapter III.L.2.b. (as the case may be) with respect to such land uses or locations." The University appreciates the SWRCB's flexibility in determining applicability of the proposed amendments to our campuses on a case-by-case basis as needed to focus limited resources on significant concerns related to littering and trash generation.		The campuses that are designated permittees under the Phase II MS4 permit would have trash controls in the next implementing permit following the adoption of the Trash Amendments. Some Non-Traditional Small MS4 permittees, such as campuses, may be outside or lack jurisdictional authority over priority land uses. After reaching that determination in consultation with the applicable MS4, the appropriate Water Board may require the MS4 to adopt Track 1 or Track 2 control measures over such land uses or locations.
75.1	The Program recommends adding language to the Proposed Trash Amendments indicating the permittees are in compliance with the receiving water limitations so long as they are fully implementing Track 1 or Track 2.		Please see Response to Comments 4.1 and 10.9.
75.2	The Los Angeles Regional Water Quality Control Board should be allowed to include permit provisions consistent with the Proposed Trash		Please see Response to Comment 10.10.

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	Amendments in areas where TMDLs exist if they desire without needing to reconsider the applicable TMDL(s).		
75.3	The Ventura MS4 Permit required permittees to develop a prioritization scheme for implementation of trash controls. The Trash Amendments should recognize and allow for established prioritization schemes to be utilized in lieu of the proposed scheme if they have already been approved by the Regional Water Board or required in a permit without the need to provide additional documentation.		Please see Response to Comment 11.9.
75.4	Part (6) of the Priority Land Uses definition from the ISWEBE Plan allows permittees to issue a request to the Los Angeles Regional Water Quality Control Board to comply with Chapter IV.B.3.a.1 of the ISWEBE Plan using alternate land uses equivalent to the defined Priority Land Uses. However, as written, the Chapter reference for the ISWEBE Plan only allows the permittees to address the equivalent alternate land uses if utilizing Track 1. The reference should be changed to allow the permittees to address the equivalent alternate land uses via Track 1 or Track 2. In addition, the chapter reference is incorrect. The reference reads Chapter III.J.2.a.1, while it should read Chapter III.L.2.a.1.		Please see Response to Comment 4.4 and 11.13.

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75.5	The Program recommends the State Water Board revise the language in the Proposed Trash Amendments (Chapter IV.B.7.b and Chapter III.L.6.b of the ISWEBE Plan and Ocean Plan) respectively, to allow for more flexibility in determining Track 2 performance and to remove the requirement for receiving water trash monitoring.		Please see Response to Comment 4.6.
75.6	The Program recommends that a more extensive list of certified devices be prepared prior to the adoption of the Proposed Trash Amendments. The Program also recommends refining the full-capture device certification process to streamline the certification process as much as possible.		Please see Response to Comment 10.5.
75.7	The Program recommends including language in the Proposed Trash Amendments to clarify that existing trash controls can be considered when determining compliance with the Trash Amendments.		Please see Response to Comment 10.7.
75.8	The Program recommends the State Board add additional language to clarify the intent of the Proposed Trash Amendments with respect to the development of future TMDLs. The Program recommends adding language to the Proposed Trash Amendments stating that, if the		Please see Response to Comment 10.10.

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	requirements in the Proposed Trash Amendments are being met, then no Trash TMDLs will be developed for those water bodies where the requirements are being fully met.		
75.9	As funding has been an ongoing challenge, we are looking forward to the State Board's assistance with the development of funding sources for Permittees to comply with the Trash Amendments.		Please see Response to Comment 10.4.
76.1	The proposed Trash Amendments would apply to waters within the jurisdiction of the Los Angeles RWQCB with trash TMDLs because the Ocean Plan amendments L.1.b.(2) and ISWEBE amendments B.1.b.(2) direct the RWQCB to force MS4 permittees to focus trash control efforts on high trash generation areas (HTGA) rather than all land uses. This would constitute a backsliding from the TMDL and NPDES permit requirements. Recommendation: That the land uses not included as HTGA be given additional time in the Time Schedule in Table 1 page 11 to comply with water quality objectives rather than eliminating them from consideration as sources of trash.		The commenter is incorrect as to the applicability of the proposed Trash Amendments. As noted in the applicability section (III.L.1 of the Ocean Plan and IV.A.1 of the ISWEBE Plan) the Trash Amendments does not apply to those waters within the jurisdiction of the Los Angeles Regional Water Quality Control Board (Los Angeles Water Board) for which trash Total Maximum Daily Loads (TMDLs) are in effect prior to the effective date of these Trash Provisions. See Response to Comment 42.4 for additional discussion of backsliding. An objective of the Trash Amendments is to focus limited resources on the areas and locations that generate high amounts of trash and are thus the most significant contributor to impairments of the beneficial uses. If land uses, areas, or locations that are outside of the defined priority land uses and do generate significant amounts of trash the amendment provides two separate mechanisms to address this. First, in the definition of high priority land uses, an MS4 permittee with regulatory authority over priority land uses* may issue a request to the applicable permitting authority that the MS4 permittee be allowed to substitute a land use with an alternate land use within the MS4 permittee's jurisdiction that generates rates of trash that is equivalent to or greater than the priority land use being substituted. Second, in the "Other Dischargers" section of the proposed amendment (section L.3 of the Ocean Plan and Section IV.A.4 of the ISWEBE Plan) the permitting

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			authority may require dischargers who are not subject to the Track 1 and 2 requirements to implement any appropriate Trash controls in areas or facilities that may generate Trash.
76.2	There is little value of including the City of Cupertino as a reference of studies to determine sources of trash and generation rates because the City along with the City of San Jose is only one of over 70 municipalities that were required to submit similar reports. Delete City of Cupertino as a reference. (Section 1.5, page 6)		The State Water Board does not agree that this change is necessary. While there are always challenges to monitoring, the BASMAA Baseline Trash Generation Rate Project did aid to establish a baseline to demonstrate progress towards trash loads reduction and categorize jurisdictions to high, medium, and low trash generating area. This work has continued to be further refined by current projects, like the Prop 84 Grant Tracking California's Trash, and has allowed for adaptive management with the next iteration of the MRP Permit.
76.3	Add a footnote to Table 1 and the Policy Amendments stating that municipalities may require and oversee the installation, operation and maintenance of full capture systems, other treatment controls and institutional controls on private property. (Table 1 page 11)		See Response to Comment 42.3.
76.4	The focus can be on high trash generation areas as long as the definition includes low density residential land uses.		A central element of the proposed Trash Amendments is a land-use based compliance approach to focus trash controls to the areas with high trash generation rates. While not specified as a priority land use, low density residential land uses could be included as an "alternate equivalent land use." See also Response to Comment 76.1.
76.5	The objective must also include "or cause a contamination or hazard to public health". The following objects have been found in storm water runoff that are threats to public health: hypodermic needles and syringes, loaded diapers, condoms, broken glass, broken fluorescent bulbs and sharp metal objects.		The State Water Board agrees that some trash can "cause a contamination or hazard to public health." Protection of public health is an intrinsic component of several beneficial uses. These uses and the potential hazard to human health are discussed thoroughly in section 1.4 and Appendix A (esp. Table 14). Thus the revised objective states that trash may not be present in amounts that "adversely affect beneficial uses."

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76.6	The discussion on page 66 must include a legal analysis explaining why the numeric objective of "Zero Trash" should not be established as the water quality objective. Add a footnote to the water quality objective in the Trash Amendments stating that: To achieve statewide consistency in the application of this objective the State Board intends to develop guidance to the regional boards for determining "acceptable" levels of trash in creeks, flood control drainage systems, wetlands, estuaries and the ocean that do not constitute a nuisance, adversely affect beneficial water uses and/or cause a contamination.		As noted in Section 4.2, and elaborated in comments 4.1 and 6.1, a "zero trash" numeric objective is not appropriate at this time as a statewide water quality objective. Determining the specific quantity of trash that constitutes a nuisance in any given water body is not feasible as within a statewide amendment. Instead, the definition of full capture equivalency has been added to the amendment. This serves essentially the same purpose as the guidance requested by the commenter.
76.7	The staff report needs to recognize that some of the Full Capture Devices and institutional controls i.e. street sweeping provide multiple water quality benefits in addition to controlling trash. Gross solids in storm water runoff are composed of vegetation, sediment and trash. Monitoring studies conducted in Los Angeles have found that trash is only about 10% of the mass and 25% of the volume of the gross solids and those conducted in the Bay Area found that trash is about 4% of the mass and 17% of the volume. Capture of vegetation would reduce		The State Water Board agrees that there are multiple benefits to certain controls including street sweeping. A discussion of multi-benefit projects is found in the staff report in Section 5.4. Additional changes recommended by the commenter are beyond the scope of this project, which is to address the impacts of trash. Other contaminants, such as gross solids are addressed through existing water quality control plan elements or may be addressed at a later date if the Board determines such action is warranted.

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	the nutrient load and capture of sediments would reduce the load of pollutants associated with sediments. Capture of gross solids would reduce the accumulation of sediments at outlets to receiving waters. (Page 13)		
76.8	There are a number of issues regarding Full Capture Systems that need to be addressed in the staff report and policy amendments including: · Certification process is inconsistent with Section 13360(a) of the California Water Code · Certification limits the ability to implement the State Board's Decision and EPA Guidance on use of the iterative process for achieving compliance with water quality standards and discharge prohibitions · Design flow criteria significantly underestimates the peak flows for small catchments · Required minimal level maintenance must be specified and documented · Effectiveness of "full and partial capture systems" was based on incomplete or incorrect information · Loss of certification of a device only addresses future installation and does not address devices already installed that were recognized as achieving compliance with NPDES permits		The State Water Board disagrees that the certification process is inconsistent with Section 13360(a) of the California Water Code for several reasons, including: The statute provides that no "waste discharge requirement" or "other order" or "decree" may specify the manner in which the permittee must comply with that requirement. The State Water Board is will consider adopting the Trash Amendments which are water quality control plans and not waste discharge requirements, orders, or decrees. Additionally, the Trash Amendments do not specify the design, location, or type of construction in which the permittee must achieve compliance with the trash provisions (upon insertion into the permittee's permit). The Trash Amendments provide two tracks, either of which a permittee may elect to comply with the prohibition of discharge. Within Track 2, a permittee may select any combination of a wide range of treatment and institutional controls that can be implemented in a wide range of land use or location types. Water Code section 13360, subdivision (a) has no bearing on the certification process for full capture devices. With that in mind, the certification does not constitute a limit to the iterative process for compliance, as it expands due to lessons learned from existing trash control across California. Please see Responses to Comments 4.6, 73.1, 76.12, 76.18, and 76.42.

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76.9	Municipalities that select institutional controls such as street sweeping, storm drain cleaning, enforcement, etc. under Track 2 should be given a time schedule of two budget cycles or three years from the date of the proposed Trash Amendments to implement these control measures. Two budget cycles would allow sufficient time for contracting these services or obtaining equipment and staff to perform the operation. Other institutional controls such as ordinances should require 5 years at the most to be fully implemented. The 10-year compliance time frame in Track 1 and 2 must be limited to installation of large capacity Full Capture Devices serving large areas and providing the most cost effective life cycle benefits and trash removal efficiencies. Planning, design and obtaining funding for these larger more efficient systems requires more time than installation of devices in individual storm drain inlets.		Please see Response to Comment 42.12.
76.10	The following land uses should be added as “priority land uses” in MS4 Phase I and II Permits: business parks, sport complexes, amusement parks, regional transit parking lots and flea markets.		Comment noted. These are specific land uses or locations that a permitting authority may determine to generate substantial amounts for trash and require compliance under Track 1 or Track 2, as determined by the permitting authority. See also Response to Comment 42.2.

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76.11	The SWRCB must provide clear and definitive guidance on what constitutes a minimal level inspection, operation and maintenance program including the elements of the annual monitoring program. Recommend that the Installation, Inspection and Operation and Maintenance Programs be adopted as minimum level of effort under Monitoring and Reporting and be included as Appendices to the Trash Amendments. That the demonstration of the reduction in trash discharged from previous years be determined by measuring the mass and volume of trash actually removed by the control measure and/or discharged from the MS4.		The monitoring and reporting provisions in the proposed Trash Amendments are minimum requirements that must be included with the implementing permits. As there will be many unique implementation approaches, the monitoring and reporting approach has been written to provide maximum flexibility to demonstrate compliance with the prohibition of discharge for trash. Many of the recommendations made by the commenter are more appropriate for site specific permits (e.g. inspection after storm events of >0.25 may be too infrequent for southern California municipalities or too frequent for Northern California municipalities). See also Response to Comment 4.6. With regards to the recommendation to determine the mass and volume of trash, the proposed Trash Amendments have been revised to provide greater clarity about how a permittee should demonstrate full capture equivalency. One included method is to determine, as recommended by the commenter, the amount of trash removed by the control methods. Other alternatives may also be appropriate as noted in the definition of full capture system equivalency. See also Response to Comment 73.1.

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76.12	The Los Angeles RWQCB has certified/recognized 8 devices and the San Francisco Bay RWQCB staff certified 35 devices as Trash Full Capture Systems. A number of vendors have developed devices that are similar to those that have been certified by the LARWQCB and it is not clear from the LARWQCB's web site whether these additional devices have been reviewed to determine compliance with the Regional Board's August 2004 Procedures and Requirements for Certification of BMPs for Trash Control. A number of studies have been conducted in Los Angeles, San Diego and Bay Areas and by Caltrans that raise significant questions on whether many of the devices certified by the Los Angeles and San Francisco Bay RWQCBs actually meet the full capture system definition and whether the definition is actually achieving significant reductions in trash discharged. 1. The Staff Report should identify the devices that have been certified/recognized by the LARWQCB. The devices certified by the San Francisco Bay RWQCB should not be listed or recognized in the Policy Amendments as meeting the definition of a full capture device. 2. The process and definition/criteria for certification of a device must be updated in the Trash Amendments		For statewide consistency, the State Water Board would take responsibility for the certification process for full capture systems, but those full capture systems previously certified by the Los Angeles Water Board would remain certified for use by permittees as a compliance method. In addition, the State Board finds that is unreasonable to expect municipalities to remove and replace full capture systems that have been identified as effective by the Regional Board in Appendix I of the Bay Area-wide Trash Capture Demonstration Project, Final Project Report (May 8, 2014). As such, devices identified in this report and already installed are considered to satisfy the requirements of the Trash Provisions. Certification of new devices would follow a similar process established by the Los Angeles Water Board with certification approvals directed to the State Water Board. The State Water Board does not think it is necessary to convene a panel of experts to discuss full capture systems. See also Response to Comments 76.19. The commenter asserts that many of the systems certified by the Los Angeles and San Francisco Bay Water Boards fail to meet the performance requirements for full capture certification. However, the commenter does not support those assertions with verifiable data or provides references that contradict the assertion. Specifically, the commenter asserts that the Los Angeles Area Studies and monitoring misreported the efficacy of catch basin inserts but provides no data to substantiate that claim. The commenter asserts that the Los Angeles Water Board certified ineffective gross solids removal devices and references two reports as support. However, the first report concluded (as noted within the comment letter) that, "The device generally met the requirement that litter items with dimensions larger than 0.25" (5mm) are retained within the device." The other report identified as supporting this assertion was for a an "Inline screen – configuration 3, which is different device than the Inclined Screen – Configuration 1 (IS1 SR-170) that was certified by the Los Angeles Water Board and is not relevant. With regards to the San Francisco Estuary

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	(see comment #19). 3. The devices that have been certified/recognized by the Regional Boards should be critically reviewed to determine whether they meet the updated criteria and a revised list must be published. 4. The SWRCB should convene a panel of experts with experience in the selection, design, construction, operation, monitoring and maintenance of trash capture devices to assist in updating the definition/criteria for certification of a device and determination whether existing devices comply with the updated criteria. Suggestions for this panel include: Lesley Estes – City of Oakland, Dr. Gary Minton - consultant, Ed Othmer – URS Corp, Dr. Bob Pitt-consultant, Gary Lippner – DWR and formerly with Caltrans, representatives from City of Sunnyvale or San Jose that have actually performed maintenance of devices. 5. The SWRCB needs to develop a strategy to address those areas that are now served by devices that were once considered to be Trash Full Capture Devices, but no longer comply with the revised definition		Partnership, the State Water Board disagrees that requiring regular cleaning and maintenance establishes a "major problem with the devices, and notes that while the commenter claims that the Partnership withheld critical information about the reliability and performance of full capture systems, the commenter does not provide any support to this assertion. Finally, the State Water Board agrees that the San Diego study determined that several alternative trash capture devices did not perform sufficiently to meet performance objectives identified in the study. However the purpose of the study was not to support full capture system certification, but to determine performance and cost effectiveness at a specific location to inform decision makers the most cost effective approach to consider for City-wide implementation. This is exactly the type of considered implementation envisioned by the proposed Trash Amendments.
76.13	1. Correct Consideration 3 On page 71 to reflect actually was found in the Los Angeles area. 2. Define Low Density residential as <8 units/acre and High Density		Comment noted. The State Water Board took this consideration 3 to reflect the Los Angeles area. The intention of the Trash Amendments is to focus trash controls on a subset of areas with a MS4 that generates high amounts of trash. Based on the feedback from the Focused Stakeholder

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	Residential as >8 units/acre and mobile home developments.		Meetings, the State Water Board does not consider it is necessary to modify the units per acre for high density residential. However, if the permitting authority determines that certain areas of low density residential are generating substantial amounts of trash, the proposed Ocean Plan Amendment in section III.L.2.d (IV.A.3.d of Part I ISWEBE) allows the permitting authority to require Track 1 or Track 2 compliance in those areas. Alternatively, low density residential land uses could be included as an "alternate equivalent land use" as identified in the definitions to the Trash Amendments.
76.14	List the items of trash in section 4.1.2, page 65, Appendix A.1, page A-1, Appendix A.II, page A-11.		The State Water Board agrees with this list of trash found in storm water runoff and have added this list to Appendix A of the Staff Report. These items of trash fall under the definition of trash, and thus will not be explicitly stated in the definition.
76.15	Low density residential land uses contribute significant trash loadings on an annual basis and should not be excluded from implementation of trash control measures and should be considered as a "priority land use".		A central element of the proposed Trash Amendments is a land-use based compliance approach to focus trash controls to areas with high trash generation rates. As discussed in Section 4.5 of the Staff Report, the State Water Board finds that priority land uses should include commercial, industrial and high density residential land uses. While not specified as a priority land use, if the permitting authority determines that certain areas of low density residential are generating substantial amounts of trash, the Ocean Plan Amendment in section III.L.2.d (IV.A.3.d of Part I ISWEBE) allows the permitting authority to require Track 1 or Track 2 compliance in those areas. Alternatively, low density residential land uses could be included as an "alternate equivalent land use" as identified in the definitions to the Trash Amendments.

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76.16	That the staff report qualify the statements on page 71 and A-16 by indicating that there are concerns regarding the value of trash generation rates developed by BASMAA because of the sample collection locations were not representative of actual land uses, questionable effectiveness of the sampling devices to capture representative samples of trash in storm water runoff and sample collection protocols.		The State Water Board does not agree that this change is necessary. While there are always challenges to monitoring, the BASMAA Baseline Trash Generation Rate Project did aid to establish a baseline to demonstrate progress towards trash loads reduction and categorize jurisdictions to high, medium, and low trash generating area. This work has continued to be further refined by current projects, like the Prop 84 Grant Tracking California's Trash, and has allowed for adaptive management with the next iteration of the MRP Permit.
76.17	The Reasonable Foreseeable Methods of Compliance (pg. 83-86) should be completely rewritten to provide a correct description of storm drainage systems and the structural devices and institutional controls used to control the discharges of trash.		The commenter asserts that the description of the storm drain system is insufficient but does not specify in what way the description is insufficient in identifying the reasonably foreseeable means of compliance. See also response to comment 76.18. The State Water Board agrees that the Santa Clara Valley Urban Runoff Pollution Prevention Program's Trash BMP Tool Box provide a good discussion of treatment and institutional controls; however, State Water Board staff does not agree the Reasonable Foreseeable Methods of Compliance needs to be modified.

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76.18	Incorporate changes to the Treatment Control - Storm Drainage System section for Caltrans (page 83 Section 5.1). The flow criteria included in the definition of terms in the Trash Amendments specify that storm intensities shall be determined based on the NOAA's National Weather Service Point Precipitation Frequency Estimates (http://hdsc.nws.noaa.gov); that a 5-minute intensity shall be used for devices that are installed in storm drain inlets; and, that the intensity determined using the actual calculated Tc be used for sizing large capacity devices serving large catchments.		The State Water Board does not recommend changes, as the purpose of 5.1 of the Staff Report is not to document or establish minimum engineering requirements for storm drain systems, but simply to disclose in a largely qualitative way the reasonably foreseeable methods of compliance and some of the considerations that system designers may address. The commenters proposed addition does not substantively change the reasonably foreseeable means of compliance. In addition, definition of full capture systems does not preclude the use of NOAA's Point Precipitation Frequency Estimates recommended by the commenter.
76.19	Require that all devices installed in storm drain inlets be sized based on the peak 5-minute rainfall intensity determined by NOAA's Point Precipitation Frequency Estimates and that large capacity full capture devices be sized using the catchments Tc and NOAA's Point Precipitation Frequency Estimates. · Prohibit the use of on-line trash control devices that allow peak flows to circulate or low through the trash storage area unless they are cleaned out after each storm event; or specify that trash control devices shall retain trash in an "off line" configuration where peak flows are bypassed upstream of the devices trash		The purpose of 5.1 of the Staff Report is not to document or establish minimum engineering requirements for storm drain systems, but simply to disclose in a largely qualitative way the reasonably foreseeable methods of compliance and some of the considerations that system designers may address. Please see Response to Comment 76.18.

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	storage area · Label storm drain inlets that require confined space entry for maintenance or replacement "Danger Permit Required - Confine Space Entry Do Not Enter" and provide confined space entry training and certification for installation and maintenance personnel. Capture residual solids and water used to power wash screens and the inlet and dispose in sanitary sewer or regulated disposal site · Coordination of inspections and mosquito abatement with mosquito abatement agencies		
76.20	The reference to hooded outlets should be deleted since it has not been cited by either Regional Board to be effective. Hooded or elbowed catch basins are used in San Francisco in their combined sewer system to control odors, but are not considered to be effective trash capture devices. San Francisco has placed oil in their catch basins to control mosquitoes. New York has reported high levels of replacement of hoods when damaged during vacuum truck cleaning operations. (Section 5.1.2, page 85)		The U.S. EPA's website recognizes that hooded outlets prevent floatable materials and trash from entering the storm drain system. Please refer to the available website at: http://water.epa.gov/polwaste/npdes/swbmp/Catch-Basin-Inserts.cfm
76.21	Add a new subsection specific to curb inlet screens and include the suggested text that details experiences with use of curb inlet screens. (Section 5.1.2 page 85)		The State Water Board does not agree that the addition is necessary to the Staff Report. The purpose of section 5 is to identify reasonably foreseeable alternatives. However, this range of alternatives need not be exhaustive. In addition, based on the assessment of the commenter that the proposed

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			control mechanism may not be effective, this may not be a reasonably foreseeable means of compliance.
76.22	A new section should describe the various types of drop inlet devices and outlet connector pipe screen. (Section 5.1.2 page 85)		The State Water Board does not agree that the addition is necessary to the Staff Report. See Response to Comment 76.17 and 76.21.
76.23	The following addition at the end of the first paragraph (Section 5.1.3 page 86)– The City of San Jose analyzed the relative capital and operation/maintenance cost of small devices (connector pipe screens and automatic retractable screens at the curb) and the hydrodynamic separator capturing trash from an area of 1000 acres, over 10 and 20-year time frames, accounting for repair and replacement of small units and increases in labor costs. The City found that small devices were more economical in the first decade, but the cost advantage disappears in the second decade.		This has been revised in the proposed Final Staff Report.
76.24	Fresh Creek Technologies, Inc.'s End of Pipe Netting Trash Trap® was installed at Hamilton Bowl and the Regional Board's April 29, 2004 letter certified the device as a full capture system. It is not clear if that certification also applies to the two other models listed in this section. (Section 5.1.4 page 87)		All of the certifications by the Los Angeles Water Board are listed on this website: http://www.waterboards.ca.gov/losangeles/water_issues/programs/tmdl/full_capture_certification.shtml

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76.25	Additional information on Street Sweeping needs to be included in Section 5.2.2.		The State Water Board agrees that permittees will need to perform verification monitoring to ensure that street sweeping, in combination with other Track 2 implementation measures meet full capture system equivalency. It may indeed be beneficial for a permittee to conduct the type of study recommended to ensure cost effective implementation of institutional controls. However, the Trash Amendments are concerned with overall trash capture and establishment of full capture system equivalency, which may not necessarily require the types of studies of individual institutional controls recommended by the commenter. Therefore, the State Water Board does not agree that the addition is necessary to the Staff Report.
76.26	That the SWRCB increase funding for BASMAA's Prop 84 study and expand the scope of that study to include: § Effectiveness and costs of using the Captive Hydrology street cleaners used in Europe and in the United States to clean airport pavements § Modification of existing sweepers or development of a new model of sweeper that would prevent the gutter brushes from propelling trash into storm drain inlets and causing damage to curb inlet retractable screens § Determination of the actual amount and percent of trash that is included in debris removed by street sweepers		Increasing funding for BASMAA's study is beyond the scope of these proposed Trash Amendments.
76.27	Section 5.3, page 93 is unclear.		The focus of the section is on the installation, and operation and/or maintenance activities associated with the reasonably foreseeable methods of compliance with the proposed Trash

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			Amendments. The State Water Board does not agree there is a lack of clarity.
76.28	The need to implement confined space entry requirements during installation, maintenance and replacement should be determined for each device that is certified as a full capture system.		Confined space entry requirements are established by the U.S. Occupational Safety and Health Administration (OSHA). More information can be found at the following website: https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_id=9797&p_table=STANDARDS. A description of the safety requirements for the operation and maintenance of various trash control structures is beyond the scope of these Trash Amendments.
76.29	Contact Contech Engineered Solutions representative for information on the installation of CDS devices because it is significantly different than for installation of the GSRD.		A detailed description of site specific installation requirements is beyond the scope of this programmatic analysis. However, the State Water Board has had communications with Contech Engineered Solutions. In addition, Contech Engineered Solutions provided a comment letter on these Trash Amendments, which did not include recommendations for changes to this section. Please see Comment Letter 43.
76.30	The section on maintenance of treatment controls should list the types of equipment required to maintain the various types of devices and implement various institutional control measures.		The State Water Board does not agree that the additional is necessary to the Staff Report. The type of equipment required to maintain the various types of devices will not affect the potential environmental impacts of the Trash Amendments.
76.31	A section needs to be added that addresses the impacts to public health of full capture systems.		Potential impacts to human health from structural controls and suitable mitigation measures are discussed in section 6.7 Hazards and hazardous materials.
76.32	The section on catch basin clean frequency (page 107) should include information and indicate that the frequency of catch basin cleaning will be vary significantly depending on a catchments gross solids loadings, rainfall events and blockage of screens/filter media .		The assumptions about cleaning frequency were estimates used to evaluate potential environmental impacts with regards air emissions. The change proposed by the commenter would double the proposed emissions, which would not be sufficient to exceed any identified thresholds of significance. The State Water Board does not agree that the addition is necessary to the Staff Report.

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76.33	Change street sweeper vehicles to vacuum trucks. (page 107)		The proposed Final Staff Report has been revised.
76.34	Adjusting the screen size to prevent clogging would violate definition of a Trash Full Capture Device that specifies a 5mm – (0.197-inch) mesh size. Recommendation: delete "and adjusting screen size to prevent clogging." (pg. 107(		The proposed Final Staff Report has been revised.
76.35	That the SWRCB staff find better information on the actual experience with the maintenance of netting systems. (page 110)		The referenced section is only supposed to describe the potential air quality impacts of identified alternatives for compliance and is not supposed to be a full description of maintenance requirements of netting systems.
76.36	The cleanout of vortex devices i.e. the CDS device provides the very least exposure to hazardous material to the public and maintenance workers of all devices that have been discussed in the staff report. The CDS devices are cleaned using vacuum trucks that suck out the trash and transport it in a closed chamber of the vacuum truck for disposal at a regulated disposal site. Conversely almost all of the other devices result in maintenance workers coming in direct contact with the gross solids. Gross solids captured in trash nets and GSRD unless enclosed in a structure are exposed to vectors and rodents that can transmit health hazards to the general public. Recommendation: The above		The State Water Board does not agree that the addition is necessary to the Staff Report. While the State Water Board agrees that worker safety is of paramount importance, the purpose of this section is identify potential impacts to the environment and the public at large from reasonably foreseeable means of compliance. Worker health and safety issues should be considered by the permittees during selection of structural and/or institutional controls.

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	information be included to page 132.		
76.37	These three devices are distinctively different in their design, operation and function and need to be better described in section 5 of the staff report. The storm drain inlet screens (trash deflectors) are placed in the curb face and are designed to prevent trash from entering the inlet, but leave trash in the street. Some are designed with retractable screens to prevent flooding when trash and vegetation block the screening mechanism. Storm drain inlet screens would not be effective with grate inlets. Storm drain inserts are devices installed in the inlet and are designed to capture trash within the inlet. Connector pipe screens are placed immediately ahead of the connector pipe and are designed to prevent trash from flowing into the pipe connecting the inlet to the main storm drain. Storm drain inlet screens are often used in combination with inserts and connector pipe screens to reduce the amount of trash that must be removed from the inlet, but require more frequent street cleaning and have been associated with flooding. Storm drain inlet inserts and connector pipe screens are prone to blockage with trash, vegetation and sediment resulting in the scouring of previously captured solids (Figures 2-8). The San Diego Storm Drain		The purpose of section 5.1 of the Staff Report is not to document or establish minimum engineering requirements for storm drain systems, but simply to disclose, in a largely qualitative way, the reasonably foreseeable methods of compliance and some of the considerations that system designers may address. The commenters proposed addition does not substantively change the reasonably foreseeable means of compliance. Further, potential street flooding due to clogged filters or screens is addressed in section 6.8.2. Therefore, no changes to the Staff Report are necessary.

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	Inlet Study (ref 10) found that clogging of insert filter material/fabric/screens was a contributing factor for bypass of these devices. The adverse impacts can be partially mitigated by increasing the frequency of inspections and maintenance. Recommendation: That the above information be included in this section (page 135).		
76.38	The CDS devices are designed to safely bypass peak flows in excess of the units design capacity to prevent any threat of flooding while continuing to treat that portion of the runoff less than the design capacity. Trash is retained offline in the sump and separation chamber and it is physically impossible to bypass previously captured trash. Units have been constructed with collapsible weirs in areas where there is minimum hydraulic head required for operation of the unit. If trash or sediments were to accumulate in the separation chamber above the screen peak flows would simply be carried safely over the weir. This can be mitigated by periodic inspections to determine depth of solids in the sump and maintenance of the device when 85% of the sump is filled. Recommendation: Incorporate the above information in this section. (page 136)		Section 6.8.2 discusses the need for overflow/bypass structures and regular maintenance of vortex separation systems to prevent flooding. No changes to the Staff Report are necessary.

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76.39	The sound levels of vacuum trucks and street sweepers under full operation should be included in Table 10. Proposed control measures including increased street sweeping in residential areas as an alternative to the installation of full capture devices; as a result of the installation of storm drain inlet screens at the curb face; and, as an enhanced institutional control measure will increase the frequency and duration of noise impacts to a community. The impacts of noise from vacuum trucks will also increase as a result of the increase in frequency of maintenance of storm drain inlet inserts and inlets with connector pipe screens. These impacts could be mitigated by selecting larger capacity full capture devices that can be sited at more remote locations. (page 140, 147, 148)		Table 10 in Section 6.10 of the Staff Report is a list of common noise sources to give the reader an idea of the range of noises people may be subjected to. It is not a comprehensive list. Vacuum truck and street sweeper noise generation is expected to be similar to a diesel truck at 15 m (85dBA). The Staff Report acknowledges the increase in ambient noise levels due to increased street sweeping and the use of vacuum trucks. However, the Staff Report concludes that employing noise abatement measures and with the short duration of noise generation in any one area, noise impacts are expected to be less than significant. No changes to the staff report are necessary.
76.40	The installation and maintenance of most of the storm drain inlet inserts and connector pipe screens and the Canada screen require compliance with Calusa confined space entry requirements. A key element of that program requires advance notification of first responders of the planned entry so they can be prepared to respond to any incidents. This could have an impact on the ability of these agencies to		The Staff Report discusses coordination with police and fire services during construction and maintenance operations where street closures are involved (Staff Report Section 6.10). CalOSHA confined space entry requirements could be coordinated at the same time. Since municipalities are already subject to CalOSHA requirements for maintenance of their existing storm water systems, no new impacts on emergency services are expected due to the Trash Amendments. In addition to an institutional control for trash, street sweeping will continue to be considered a BMP for other storm water pollutants. Impacts for street sweeping over baseline conditions are expected to be less than significant since they

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	respond to other emergencies. Some devices lie trash nets, GSRD and CDS do not require implementation of confined entry procedures and would not impact police and fire services. The impacts of increased street sweeping cannot be easily mitigated by changing the timing of the sweeping. The use of parking restrictions to increase the effectiveness of sweepers is a key control when effective sweeping can be performed. Sweeping must also be conducted at a frequency to remove trash that has collected in the gutter before it is carried into storm drain inlets by natural or vehicle caused winds. Recommendation: Incorporate the above information in this section. (Section 6.11.2 and pages 149 and 151).		are not expected to interfere with emergency services. No changes to the staff report are necessary.
76.41	The frequency of cleaning vortex systems depends on the accumulation of trash and depends on the catchments gross solids generation rates. The CDS device should be inspected after the first significant storm of the season and then periodically inspected during the rainy season and cleaned when the sump is 85% full. The frequency of cleaning of inlets with storm drain inlet inserts and connector pipe screens must be significantly increased as recommended in		The State Water Board agrees that proper operation of full capture systems will require the period cleaning, and this cleaning should be in done in concert with rain storms. If a full capture system is full with trash, the additional storm water and trash will either bypass the full capture system or cause flooding. Localized flooding risks should be minimized with timely full capture system inspections and cleanings.

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	Comment #32 if they are to be even marginally effective. The risk of increased street flooding is greater with storm drain inlet screens installed at the curb face when the screens are clogged with trash, sediment and vegetation (see Comment #21). Storm drain inlet inserts are less likely to cause flooding in the streets if they are designed with adequate bypass capacity: however, the City of South San Francisco in the 2012-2013 annual report reported that the West Coast Storm connector pipe screen caused flooding even when cleaned and maintained during storm events. (Section 6.12.2, page 152 and 157)		
76.42	The statement that the State Board does not direct compliance measures agencies choose or mitigation measures they apply is misleading because the Regional Boards have certified specific full capture devices and stated that compliance with NPDES permits is achieved through the installation and maintenance of the devices. LID controls and multi-benefit projects must be designed to meet the trash trapping and retention standard and have the hydraulic flow capacity required of full capture devices in order to be considered as equivalent.		The statement is not misleading. While the Los Angeles Water Board has certified, and the proposed amendment will certify systems as satisfying the requirements of the trash provisions, the State Water Board does not specify which systems a permittee must install. In addition, permittees have a broad range of alternatives through track 2, such as institutional controls, low impact development measures, or multi-benefit projects to employ to meet the standards specified. These alternatives do not require certification, but instead a demonstration of full capture system equivalency. The commenters suggestion that the State Water Board follow the lead of the guidance on establishing waste load allocations is noted, but as the commenter mentions, is not a requirement that need be met by the Trash Amendments. However, the specific elements outlined by the commenter (e.g. require iterative implementation and monitoring of BMPs to ensure compliance with water quality objectives) is essentially equivalent to what is require in the monitoring section of the

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			Trash Amendment and within the newly added language on demonstration of full capture system equivalency. In addition, Section III.L.5 of the Ocean Plan Amendment (Section IV.A.6 of Part I ISWEBE) requires the permittee to annually report to the permitting authority demonstrating installation, operation, maintenance of either Track 1 or Track 2 controls. Please see Responses to Comments 4.6 and 6.2.
76.43	1. The State Board at the public hearings should seek out reasons for the two different approaches, identify the constraints in developing and implementation of trash reduction programs and determine which approach can be more quickly implemented and include review should include an assessment of the State's staff resources required to implement different regulatory approaches. 2. Accelerate the Time Schedule for Track 2		Through the Public Advisory Group, Focused Stakeholder Meetings, public workshop, and public hearing, the State Water Board has extensively collaborated and discussed with stakeholders the two different approaches and implementation programs. The dual alternative "compliance track" approach will provide flexibility to permittees to determine the most effective means of controlling trash while taking into consideration particular site conditions, types of trash, and the available resources for maintenance and operation. While a reduced time schedule would potentially provide results more readily, a ten year time schedule for both Track 1 and Track 2 will provide consistent and sufficient time for permittees to successfully achieve the prohibition of discharge and control trash discharges. See also Responses to Comments 10.12 and 42.12.
76.44	The Water Boards are also required to protect uses from "contamination" in addition to pollution and nuisance. Recommendation: Add "and contamination" after nuisance in Appendix A.1.		The State Water Board agrees that contamination is a consequence of pollution and nuisance.
76.45	Trash-Related Impacts to Public Health Beneficial Uses – (table 14, page A-8) Broken glass, sharp metal and hypodermic needles/syringes should be added to the health and safety hazards.		These hazards are part of safety hazards in Table 14 in Appendix A of the proposed Final Staff Report.

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76.46	Trash can have adverse impacts on the environment even before it enters waters of the state. Trash is present throughout a watershed in parking lots, streets, sidewalks, parks and other public areas and has community drawbacks. Quality-of-life issues related to environmental blight (including the presence of trash) are rooted in the "broken window" theory, postulated in the 1940s. The presence of trash is a sign of neglect and apathy taken root in a neighborhood fueling further deterioration often leading to other societal ills. Litter is often viewed as one of the earliest indicators that a neighborhood is in distress.26 The use of curb face screens at storm drain inlets leaves trash in the streets until removed by institutional control measures such as street sweeping and their use should be considered as having potential adverse impact on the environment. (Section II, page A-11 and A-13)		Trash is one of the most widely recognized pollutants by the public, and it contributes to quality-of-life issues. The reduction of trash has been addressed in many avenues from litter laws to educational campaigns to treatment controls. The focus of the Trash Amendments is to reduce the amount trash that enters our water bodies, most specifically through the storm drains. The Trash Amendments do not pretend to provide the all-encompassing solution to trash problems in California. The Trash Amendments focus on creating the implementation framework to control the discharge of trash from areas with high trash generation rates with a multiple avenues for achieving compliance. One of the reasonably foreseeable means of compliance is full capture systems. With proper operation and maintenance, full capture systems will capture trash from storm water that would have been discharged into the receiving water body.
76.47	Did the Santa Clara Valley Urban Runoff Pollution Prevention Program actually perform Rapid Trash Assessments in the Los Angeles River Watershed and Los Angeles area lakes? (Page A-14)		This has been modified in the revisions to the proposed Final Staff Report.

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76.48	The discussion of the Caltrans Public Education Litter Monitoring Study should note that sediment was not measured during the study. The Bay Area baseline monitoring effort (ref 9) reported that trash is 17% by volume and 4% by weight of all solids in runoff and reported various components of trash – recommend that the pie charts be included in the staff report. (A-16)		Sediment is outside of the scope of the discussion and the Litter Management Pilot Study discussion is sufficient.
76.49	That the Economic Analysis be redone to include realistic and predictable 25-year life cycle costs.		The Economic Considerations assumed a 10% per year expenditure of capital costs in order to achieve full implementation in ten years. The life cycle of the full capture systems depend on many factors such as the type of full capture system, the adequate operation and maintenance of the system, and the unique characteristics of the place where is going to be installed. It is not logical to assume that all full capture systems would have a life expectancy of 25 years. At the same time, in year ten of the compliance schedule with Track 1, State Water Board staff estimated that out of the incremental $3.95 per capita necessary to comply with Track 1 of the proposed Trash Amendments, $0.75 (or approximately 19% of the total cost) would be spent on installing or replacing the capital cost. Based on that information and assuming a 25 year cycle, in year 25 an additional $0.75 would need to be added to the $3.2 operations and maintenance cost for a period of ten years until all full capture systems were replaced. This reasoning was not included in the analysis because the uncertainty of the life cycle cost of the full capture systems and low impact development projects on the overall estimates.

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76.50	That actual cost be developed for maintenance of the CDS device.		The Economic Analysis assumed that the total cost of operations and maintenance for a full capture system is, on average, $342 per unit. The cost is very sensitive to the type of device installed, the location of installation, and the labor costs associated with each community.
76.51	Water Quality Objectives a. Add "or cause a contamination or hazard to public health". b. Add footnote "To achieve statewide consistency in the application of this objective the State Board intends to develop guidance to the regional boards for determining "acceptable" levels of trash in creeks, flood control drainage systems, wetlands, estuaries and the ocean that do not constitute a nuisance, adversely affect beneficial water uses and/or cause a contamination."		No Change. Please see response to Comment 76.5. and 76.6
76.52	Applicability a. A provision must be added that addresses systems /devices that could be certified during the interim period between now and when effective date of the Trash Provisions. b. A new provision (3) must be added that requires all systems/devices meet the new definition/criteria added in the Monitoring and Reporting Sections and Appendices. c. A new provision (4) must be added that addresses those devices that have already been certified and		The State Water Board does not agree this additional language for the full capture systems is a necessary addition to the proposed Trash Amendments. Ongoing certification by the Los Angeles Water Board can continue until the Trash Amendments are effective. For response to comments on the definition, criteria and certification, see Responses to Comments 76.11, 76.12 and 76.19.

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	upon review have been found to not comply with the new definition/criteria.		
76.53	Permitted Dischargers Compliance a. These sections need to address a MS4 permittees responsibility to address those dischargers where they have no regulatory authority yet those dischargers actually discharge to the MS4.		Trash is generated from multiple sources and transported to state waters through multiple mechanisms. The Trash Amendments focus on one of the pathways, namely storm water. Under the Trash Amendments, MS4 permittees would be required to address trash from high trash generating areas under the jurisdiction of the municipality, specifically the priority land uses. For high trash generating areas, the permitting authority can either require the MS4 implement trash controls or issue WDRs or waivers of WDRs to the land owner to implement appropriate trash controls. Please see Responses to Comments 6.5 and 6.6.
76.54	Permitted Dischargers Compliance a. Add a footnote that "Municipalities may require and oversee the design, installation, operation and maintenance of full capture systems, other treatment controls and institutional controls on private property".		Comment noted. The Trash Amendments limit trash controls to areas of the permittee's jurisdiction. The storm drains are those under the jurisdiction of the permittee, thus public drains. See also Responses to Comments 25.1 and 42.3.
76.55	Additional High Trash Generating Land Uses a. Add amusement parks, sports complexes, regional transit parking lots and flea markets.		These are specific land uses or locations that a permitting authority may determine to generate substantial amounts for trash and require compliance under Track 1 or Track 2. Please see Response to Comment 6.6.
76.56	Time Schedule a. The permittee must do more than explain how the controls are "designed" to achieve the same performance results as Track 1. They must also be required to submit		Please see Response to Comment 18.6.

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	a monitoring program plan that documents the reduction in the discharge of trash achieving the same performance results as Track 1. b. Institutional controls such as street sweeping, storm drain cleaning, enforcement, etc. under Track 2 should be given a time schedule of two budget cycles or three years from the effective date of the proposed Trash Amendments to implement these control measures. Institutional controls such as ordinances could require 5 years to be fully implemented. Installation of Full Capture systems/devices installed in storm drain inlets should have a time schedule of 5 years. The 10-year compliance time frame in Track 1 and 2 must be limited to installation of large capacity Full Capture Devices serving large areas.		
76.57	Time Extensions a. This section should be deleted because dischargers have already been alerted as a result of the Public Notice and the draft Trash Amendments that they must develop and implement trash control measures.		Please see Response to Comment 4.5.
76.58	a. That the Installation, Inspection and Operation and Maintenance Programs in Comment #11 be adopted as minimum level of effort under Monitoring and Reporting and be included as Appendices to the		As the compliance options vary among NPDES permits for storm water discharges, the monitoring and reporting options could be tailored to the type of compliance. The balance between the need for consistency and flexibility would be achieved through standardized objectives in the monitoring program. The proposed Trash Amendments could establish

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	Trash Amendments. b. Include in the Definition of Terms a definition of "effectiveness". c. That the demonstration of the reduction in trash discharged from previous years be determined by measuring the mass and volume of trash actually removed by the control measure and/or discharged from the MS4. d. The monitoring results must be reported by individual land use categories. e. The mass and volume of trash reduced must be reported. f. This reporting requirement can be deleted if the volume and mass of trash discharge are reported.		minimum monitoring and reporting provisions, and Water Boards could include more extensive provisions in implementing permits. For Track 2 MS4 permittees, monitoring plans and reports must demonstrate the effectiveness of trash controls and the compliance with full capture system equivalency. The specifics of effectiveness, quantification unit of trash, and assessment by individual land use would be required at the discretion of the permitting authority. However, the State Water Board agrees that quantification by mass and volume, as well as reporting by individual land uses categories, is preferred for achieving the monitoring requirements. Please see Responses to Comments 4.6 and 6.2.
76.59	Enforcement Strategy a. An enforcement strategy must be added to the Trash Amendments that implements USEPA's guidance on establishment of TMDLs and NPDES permits. See Comment #42. This strategy must provide guidance to the Regional Boards on NPDES permit revisions and/or enforcement actions that would implement the iterative process by adding additional Full Capture Certified system/devices and trash control measures necessary to achieve compliance with water quality standard. b. The enforcement strategy must address the failure of currently certified systems/devices that do not		An iterative process is already identified in the Trash Amendments. See Responses to Comments 76.12 and 76.42.

Comment Letter	Comment	Recommended Language	Response
	comply with the revised definition/criteria.		
76.60	Revised Definition/Criteria of Full Capture Systems. The following additional minimum criteria are recommended: § Require that all devices installed in storm drain inlets be sized based on the peak 5-minute rainfall intensity determined by NOAA's Point Precipitation Frequency Estimates and that large capacity full capture devices be sized using the catchments Tc and NOAA's Point Precipitation Frequency Estimates. § Prohibit the use of on-line trash control devices that allow peak flows to circulate or low through the trash storage area unless they are cleaned out after each storm event; or specify that trash control devices shall retain trash in an "off line" configuration where peak flows are bypassed upstream of the devices trash storage area § Label storm drain inlets that require confined space entry for maintenance or replacement "Danger Permit Required – Confine Space Entry Do Not Enter" and provide confined space entry training and certification for installation and maintenance personnel § Capture residual solids and water used to power wash screens and the inlet and dispose in sanitary sewer or regulated disposal site		The State Water Board does not recommend changes to the definition of full capture systems. See Response to Comment 76.18.

Comment Letter	Comment	Recommended Language	Response
	§ Coordination of inspections and mosquito abatement with mosquito abatement agencies b. The devices that have been certified/recognized by the Regional Boards should be critically reviewed to determine whether they meet the updated definition/criteria and a revised list must be published.		
76.61	Priority Land Uses a. Change "High-density residential" to "Residential". b. Add "regional transit parking lots".		The Trash Amendments will maintain high density residential as a priority land use, where other residential land uses and regional transit parking lots could be included as alternate equivalent land uses if determined to generate substantial amounts of trash to require trash controls. See also Responses to Comments 76.13 and 76.15.
76.62	Exemption from priority land use designation a. Add a provision (7) Exemption from a priority land use designation: An MS4 permittee may request from the applicable permitting authority the exemption of a designated Priority Land Use or specific areas of a Priority Land Use based on low trash generation rates determined by measurement of the mass and volume of discharged.		Please see Responses to Comments 10.1 and 10.7.
76.63	Trash a. Add to the definition those items that have been found in storm water runoff. See Comment 76.14.		Please see Response to Comment 76.14.
77.1	The California Coastal Commission support the proposed amendments to the Statewide Water Quality Control plans to control trash. The		The State Water Boards appreciates the support from the California Coastal Commission on the Trash Amendments. In particular, the State Water Board is proud of Coastal Commission's California Coastal Cleanup Day to highlight the

Comment Letter	Comment	Recommended Language	Response
	proposed amendments would play a critical role in helping to stem the flow of trash from inland waterways to the coast and ocean while improving the water quality and habitat and recreational values of those waterways.		trash problem in our waterways and inspire volunteers to participate and clean up their local waterways. The data from Coastal Cleanup Day has been instrumental for the Staff Report (see Final Staff Report Appendix A). The State Water Board looks forward to continued partnership with the Coastal Commission in the implementation of the Trash Amendments.
78.1	Corrections should be made in Section 9.4 Economic Considerations, page 173 the Draft Staff Report: " To comply with the proposed Trash Amendments, expenditures by Caltrans are estimated to increase by $92 million annually in total capital costs and $1 million for the first year and increasing to $10 million per year after ten years for operation and maintenance of structural controls." It should be noted that the estimate above for Caltrans excludes total capital costs associated with trash reduction requirements specific to San Francisco Bay Regional Board requirements (Attachment V of our Permit) or the trash reduction requirements specific to Trash TMDLs in the Los Angeles Regional Board region (Attachment IV of our Permit).		The State Water Board appreciates corrections to the estimated expenditures for Caltrans to comply with the proposed Trash Amendments. While the State Water Board recognizes the estimated incremental costs for Caltrans are conservative, the information provided in the letter was unclear on how final estimated cost of $92 million annually was calculated. The Economic Consideration conducted by State Water Board staff is based on several clearly defined assumptions. One assumption was for the average capital cost of a full capture system, $800 per drop inlet. If the cost of a full capture system is more expensive, then the total cost will increase. The $176,000 per acre proposed by Caltrans is a different type and scale of cost factor. This cost factor is derived for the estimated cost of compliance for TDMLs, which encompasses a host of pollutants including trash. For the Economic Considerations, the incremental cost of compliance needs to be based on the cost for trash controls, which would be a proportion of the $176,000 per acre estimate. For the additional cost of "$1 million for the first year and increasing to $10 million per year after ten years for operation and maintenance of structural controls," it is unclear how those estimates were determined. Therefore, the proposed Final Staff Report was not modified with the proposed changes but the estimates provided by Caltrans will be considered.
78.2	Other inaccurate financial information related to Caltrans projected expenditures, as stated in Appendix C of the Draft Staff Report include the following: Appendix C,		The State Water Board agrees with the recommended change in Caltrans' current annual expenditures for ongoing maintenance activities for litter removal. The change was made in the proposed Final Staff Report. However, State Water Board disagrees with the other proposed changes on

Comment Letter	Comment	Recommended Language	Response
	page C-2: "Caltrans currently spends over $80 million annually for ongoing maintenance activities for litter removal. To comply with the proposed Trash Amendment, over a ten-year period, the annual expenditure by Caltrans is expected are estimated to increase by $92 million annually in capital construction costs assuming full capture retrofit. Maintenance of the full capture devices will increase approximately $1 million for the first year and increasing to $10 million per year after ten years."		estimated annual costs. (Final Staff Report Appendix C, pp. C-2-4, C-15, C-18-19, and C-50-54.) For that, please see Response to Comment 78.1.
78.3	Appendix C, page C-4, Table 1. Summary of Estimated Compliance Costs of the Proposed Trash Amendments for NPDES Storm Water Permits: "Population/size: 50,000 lane-miles" "Baseline of Current Trash Control Costs: "Total and Per Capita Per Year: $80 M per year" "Estimated Incremental Cost for Track 1: "Total and Per Capita Per Year: "Total Capital Cost: $92 M annually "Operation & Maintenance: $1M for year l, increasing to $10 M per year after ten years"		The State Water Board agrees with the recommended change in Caltrans' total lane miles. The change was made in the proposed Final Staff Report. (Final Staff Report Appendix C, pp. C-2-4, C-15, C-18-19, and C-50-54.) Additionally, please see Responses to Comments 78.1 and 78.2.

Comment Letter	Comment	Recommended Language	Response
78.4	Appendix C, page C-15: "Caltrans spends approximately $80 million a year on "litter removal" (i.e., trash control), or approximately $1,600 per lane-mile."		The State Water Board agrees with the recommended changes, which are reflected in the proposed Final Staff Report. (Final Staff Report Appendix C, pp. C-2-4, C-15, C-18-19, and C-50-54.)
78.5	Appendix C, page C-18-19: "Caltrans annually spends $80 million on litter removal. This is approximately 6.7% of their $1.2 billion maintenance budget for FY 13-14. Caltrans manages over 50,000 lane-miles of roadways; owns and operates 265 state highways; and owns and manages 12,300 bridges and 665 buildings and other structures. Caltrans spends an average of $1,600 per lane-mile on litter removal."		The State Water Board agrees with the recommended changes, which are reflected in the proposed Final Staff Report. (Final Staff Report Appendix C, pp. C-2-4, C-15, C-18-19, and C-50-54.)
78.6	Appendix C, page C-50: "8. POTENTIAL COSTS FOR CALTRANS Caltrans' Division of Maintenance expenditures on "litter removal" is $80 million per year. According to Caltrans, there are approximately 50,000 lane miles (approximately 15,000 centerline miles) in California. Therefore, the current cost of litter removal is, on average, $1,600 per lane mile per year."		Please see Responses to Comments 78.3, 78.4, and 78.5.
78.7	Appendix C, page C-50-51: "For unit costs, we assumed the same installation (176,000/acre		Please see Responses to Comments 78.1 and 78.2.

Comment Letter	Comment	Recommended Language	Response
	treated) capital construction. We estimated that there are approximately 18 catch basins per mile in rural areas and 36 catch basins per mile in urban areas. Because significant trash generating areas are more likely to be in urban areas, we used the higher estimate to calculate the number of catch basins needing full capture devices. Under these assumptions, estimated incremental capital costs for Caltrans would be approximately $92 million annually and incremental annual operation would be approximately $1M for year 1 and increasing to $10M per year after ten years (Table 30)."		
79.1	As you may know, Contra Costa County is split between two regional water quality control boards (Region 2 – San Francisco and Regional 5 – Central Valley) but it was decided early on that the Cities of Brentwood, Oakley, and Antioch as well as the eastern portion of Unincorporated Contra Costa County would have their municipal stormwater permit largely mirror the MRP. As such, both permits include Provision C.10 for trash load reduction. The only difference in the two Provision C.10 requirements is that the East Contra Costa Permittees have an extra year to report on trash load reduction. MRP Permittees were supposed to demonstrate a 40%		Please see Response to Comment 7.3 and 64.2.

Comment Letter	Comment	Recommended Language	Response
	reduction in trash load by July 1, 2014 whereas East Contra Costa Permittees have until July 1, 2015 to meet that reduction number. And the target for 70% and 100% are also separated by a year. Is this an issue that needs further addressing or just clarifying language in the footnote?		

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

RESOLUTION R2-2006-0052

AMENDING THE WATER QUALITY CONTROL PLAN FOR THE SAN FRANCISCO BAY REGION TO ESTABLISH NEW MERCURY WATER QUALITY OBJECTIVES AND TO AMEND THE TOTAL MAXIMUM DAILY LOAD AND IMPLEMENTATION PLAN FOR MERCURY IN SAN FRANCISCO BAY

WHEREAS an updated Water Quality Control Plan for the San Francisco Bay Region (Basin Plan) was adopted by the San Francisco Bay Regional Water Quality Control Board (Water Board) on June 21, 1995, approved by the State Water Resources Control Board on July 20, 1995, and approved by the Office of Administrative Law (OAL) on November 13, 1995, and has since been revised; and

WHEREAS the Basin Plan may be amended in accordance with California Water Code § 13240, et seq.; and

WHEREAS San Francisco Bay has been identified under federal Clean Water Act § 303(d) as an impaired waterbody due to elevated concentrations of mercury; and

WHEREAS under Clean Water Act § 303(d) the Water Board is required and authorized to establish the total maximum daily load (TMDL) for impairing pollutants.

WHEREAS on September 15, 2004, the Water Board adopted a mercury TMDL for San Francisco Bay and an implementation plan into the Basin Plan (Mercury TMDL) by Resolution No. R2-2004-0082; and

WHEREAS the State Water Resources Control Board (State Board), by Resolution 2005-0060 (Remand Resolution), remanded the Mercury TMDL to the Water Board for further consideration consistent with the Remand Resolution and directed that the Mercury TMDL be revised to:

- Incorporate requirements for appropriate pollution prevention programs and practices
- Establish individual wasteload allocations
- Include methylmercury monitoring in the next round of NPDES permits
- Include a reopener to modify NPDES permits to implement a forthcoming State pollutant offsets policy
- Revise the wildlife numeric target
- Address the marine waters mercury four-day average water quality objective; and

WHEREAS an amendment to the Basin Plan to amend the Mercury TMDL and adopt new mercury water quality objectives for San Francisco Bay (collectively, the Basin Plan Amendment) are proposed to comply with the Remand Resolution; and

WHEREAS the Basin Plan Amendment would adopt new mercury water quality objectives of 0.2 and 0.03 milligrams mercury per kilogram of fish tissue to protect human health and aquatic organisms/wildlife, respectively, both of which will be implemented through the Mercury TMDL, as revised; vacate the existing 4-day average water quality objective for mercury in the Basin Plan as it applies to San Francisco Bay; and amend the Mercury TMDL to, among other things, adopt a wildlife target, reduce the TMDL from 706 kilograms per year to 700 kilograms, primarily by lowering individual wasteload allocations for municipal wastewater sources by up to 40% on a 20-year implementation schedule, impose additional implementation plan actions such as methylmercury monitoring and corrective actions upon exceedances of mercury triggers for municipal and industrial wastewater sources; and

WHEREAS Water Code § 13241 authorizes the Water Board to adopt new water quality objectives such as the new mercury objectives proposed in the Basin Plan Amendment upon consideration of the following factors: past, present, and probable future beneficial uses of water; environmental characteristics of the hydrograph unit under consideration, including the quality of water available thereto; water quality conditions that could be reasonably be achieved through the coordinated control of all factors that affect water quality; economics; the need for developing housing; and the need to develop and use recycled water; and

WHEREAS the Water Board has duly considered the Water Code § 13241 factors; and

WHEREAS the Water Board finds that the Basin Plan Amendment includes the required Water Code § 13242 program of implementation for achieving the proposed new mercury water quality objectives through the Mercury TMDL, as revised; and

WHEREAS the Water Board finds the proposed mercury water quality objectives to be based on sound scientific rationale and protect beneficial uses; and

WHEREAS the Basin Plan Amendment, including specifications on its physical placement in the Basin Plan, is set forth in Exhibit A hereto; and

WHEREAS the scientific basis of regulatory elements of the Basin Plan Amendment were reviewed by external peer reviewers Dr. James Kirchner, University of California, Berkeley; Dr. David L. Sedlak, University of California, Berkeley; and Dr. Rhea Williamson, San Jose State University; and

WHEREAS a draft Basin Plan Amendment, Staff Report, and Environmental Checklist were prepared and distributed for public review and comment on April 21, 2006, in accordance with applicable state and federal laws and regulations; and

WHEREAS the Water Board held public hearings on June 14, 2006, and on August 9, 2006, to consider the Basin Plan Amendment and supporting documents, and the changes made

thereto in response to public comments. A Notice of Public Hearing and Notice of Filing of a Draft Environmental Document was given to interested persons and was published in accordance with applicable state and federal laws and regulations; and

WHEREAS the process of basin planning has been certified by the Secretary for Resources as exempt from the requirements of the California Environmental Quality Act (CEQA) (Public Resources Code § 21000 et seq.) to prepare an Environmental Impact Report or Negative Declaration; and

WHEREAS the Water Board has duly considered the Environmental Checklist, Staff Report, and supporting documentation with respect to environmental impacts and finds that the Basin Plan Amendment will not have a significant impact on the environment. The Basin Plan Amendment will result in no potential for adverse effect on wildlife. The Water Board has also considered the environmental analysis contained in the Staff Report and the Environmental Checklist of the reasonably foreseeable methods of compliance with the Basin Plan Amendment, including economics; and

WHEREAS the Water Board has carefully considered all comments and testimony received, including responses thereto, on the Basin Plan Amendment, as well as all of the evidence in the administrative record; and

WHEREAS the Basin Plan Amendment must be submitted to the State Board so that it may act on both the Mercury TMDL, as revised, and the Basin Plan Amendment. Upon State Board's approval, OAL and the United States Environmental Protection Agency (USEPA) must approve the Mercury TMDL, as revised, and the new water quality objectives;

NOW, THEREFORE BE IT RESOLVED that the Water Board adopts the Basin Plan Amendment, as set forth in Exhibit A hereto, that amends the Mercury TMDL, adopts two new mercury water quality objectives for San Francisco Bay and vacates the existing 4-day mercury water quality objective as it applies to San Francisco Bay to comply with the Remand Resolution; and

BE IT FURTHER RESOLVED that the Water Board does not intend for the Basin Plan to preclude the Water Board from incorporating performance-based effluent limitations in NPDES permits where warranted; and

BE IT FURTHER RESOLVED that the Executive Officer is directed to forward copies of the Basin Plan Amendment to the State Board in accordance with the requirement of California Water Code § 13245; and

BE IT FURTHER RESOLVED that the Water Board requests that the State Board approve the Mercury TMDL and the Basin Plan Amendment, in accordance with the requirements of California Water Code § 13245 and § 13246 and forward it to the OAL and USEPA for approval; and

BE IT FURTHER RESOLVED that the Water Board requests that if the State Board finds further revisions to the Mercury TMDL and the Basin Plan Amendment may be necessary, it hold a hearing in the San Francisco Bay region to make the revisions; and

BE IT FURTHER RESOLVED that if, during the approval process, Water Board staff, the State Board, or OAL determines that minor, non-substantive corrections to the language of the amendment and supporting documentation are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Water Board of any such changes; and

BE IT FURTHER RESOLVED that in conjunction with USEPA approval of the Mercury TMDL, as revised, and the new mercury water quality objectives, the Executive Officer also seek USEPA approval of the 20-year final wastewater allocation implementation schedule under 40 Code of Federal Regulations § 131.13, which allows USEPA to approve water quality standard implementation policies; and

BE IT FURTHER RESOLVED that since the Basin Plan Amendment will involve no potential for adverse effect, either individually or cumulatively, on wildlife, the Executive Officer is directed to sign a Certificate of Fee Exemption for a "De Minimis" Impact Finding and to submit the exemption in lieu of payment of the Department of Fish and Game CEQA filing fee.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on August 9, 2006.

BRUCE H. WOLFE
Executive Officer

Attachment

Exhibit A - Basin Plan Amendment to establish new Mercury Water Quality Objectives and to amend the Total Maximum Daily Load and Implementation Plan for Mercury in San Francisco Bay

Appendix B

Proposed Basin Plan Amendment

Amendments to the following chapters of the San Francisco Bay Basin Water Quality Control Plan

Chapter 3 ***Water Quality Objectives***

Chapter 4 ***Continuing Planning***

Chapter 6 ***Surveillance and Monitoring***

Chapter 7 ***Water Quality Attainment Strategies, Including Total Maximum Daily Loads***

Changes proposed (from the September 2004 adopted Basin Plan amendment) in the April 21, 2006, *Proposed Basin Plan Amendment and Staff Report for Revised Total Maximum Daily Load (TMDL) and Proposed Mercury Water Quality Objectives, Draft for Public Review*, are indicated in single ~~strikeout~~ or underline.

Changes proposed in response to comments (on the April 21, 2006 *Draft for Public Review)* are indicated in double ~~strikeout~~ or underline.

Chapter 3. Water Quality Objectives

The following revisions indicated in underline/strikeout are proposed for Chapter 3, Water Quality Objectives.

OBJECTIVES FOR SPECIFIC CHEMICAL CONSTITUENTS

Surface waters shall not contain concentrations of chemical constituents in amounts that adversely affect any designated beneficial use. Water quality objectives for selected toxic pollutants for surface waters are given in Tables 3-3, 3-3A, 3-3B, and 3-4.

The Water Board intends to work towards the derivation of site-specific objectives for the Bay-Delta estuarine system. Site-specific objectives to be considered by the Water Board shall be developed in accordance with the provisions of the federal Clean Water Act, the State Water Code, State Water Board water quality control plans, and this Plan. These site-specific objectives will take into consideration factors such as all available scientific information and monitoring data and the latest U.S. EPA guidance, and local environmental conditions and impacts caused by bioaccumulation. Pending the adoption of site-specific objectives, the objectives in Tables 3-3 and 3-4 apply throughout the region except as otherwise indicated in the Tables or when site-specific objectives for the pollutant parameter have been adopted. Site-specific objectives for copper and nickel, adopted for South San Francisco Bay south of the Dumbarton Bridge, are listed in Table 3-3A. Objectives for mercury that apply to San Francisco Bay are listed in Table 3-3B.

South San Francisco Bay south of the Dumbarton Bridge is a unique, water-quality-limited, hydrodynamic and biological environment that merits continued special attention by the Water Board. Controlling urban and upland runoff sources is critical to the success of maintaining water quality in this portion of the Bay. Site-specific water quality objectives have been adopted for dissolved copper and nickel in this Bay segment. Site-specific objectives may be appropriate for other pollutants of concern, but this determination will be made on a case-by-case basis, and after it has been demonstrated that all other reasonable treatment, source control and pollution prevention measures have been exhausted. The Water Board will determine whether revised water quality objectives and/or effluent limitations are appropriate based on sound technical information and scientific studies, stakeholder input, and the need for flexibility to address priority problems in the watershed.

Table 3-3: Marine[a] Water Quality Objectives for Toxic Pollutants for Surface Waters (all values in ug/l)			
Compound	4-day Average	1-hr Average	24-hr Average
Arsenic[b, c, d]	36	69	
Cadmium[b, c, d]	9.3	42	
Chromium VI[b, c, d, e]	50	1100	
Copper[c, d, f]			
Cyanide[g]			
Lead[b, c, d]	8.1	210	
Mercury[h]	0.025	2.1	
Nickel[b, c, d]	8.2	74	
Selenium[i]			
Silver[b, c, d]		1.9	
Tributyltin[j]			
Zinc[b, c, d]	81	90	
PAHs[k]			15

Notes:

a. Marine waters are those in which the salinity is equal to or greater than 10 parts per thousand 95% of the time, as set forth in Chapter 4 of the Basin Plan. Unless a site-specific objective has been adopted, these objectives shall apply to all marine waters, except for the South Bay south of Dumbarton Bridge, (where the California Toxics Rule (CTR) applies) or as specified in Note h (below). For waters in which the salinity is between 1 and 10 parts per thousand, the applicable objectives are the more stringent of the freshwater (Table 3-4) or marine objectives.

b. Source: 40 CFR Part 131.38 (California Toxics Rule or CTR), May 18, 2000.

c. These objectives for metals are expressed in terms of the dissolved fraction of the metal in the water column.

d. According to the CTR, these objectives are expressed as a function of the water-effect ratio (WER), which is a measure of the toxicity of a pollutant in site water divided by the same measure of the toxicity of the same pollutant in laboratory dilution water. The 1-hr. and 4-day objectives = table value X WER. The table values assume a WER equal to one.

e. This objective may be met as total chromium.

f. Water quality objectives for copper were promulgated by the CTR and may be updated by U.S. EPA without amending the Basin Plan. Note: at the time of writing, the values are 3.1 ug/l (4-day average)

and 4.8 ug/l (1-hr. average). The most recent version of the CTR should be consulted before applying these values.

g. Cyanide criteria were promulgated in the National Toxics Rule (NTR). The NTR criteria specifically apply to San Francisco Bay upstream to and including Suisun Bay and Sacramento-San Joaquin Delta. Note: at the time of writing, the values are 1.0 ug/l (4-day average) and 1.0 ug/l (1-hr. average).

h. Source: U.S. EPA Ambient Water Quality Criteria for Mercury (1984). The 4-day average value for mercury does not apply to San Francisco Bay; instead, the water quality objectives specified in Table 3-3B apply. The 1-hour average value continues to apply to San Francisco Bay.

i. Selenium criteria were promulgated for all San Francisco Bay/Delta waters in the National Toxics Rule (NTR). The NTR criteria specifically apply to San Francisco Bay upstream to and including Suisun Bay and Sacramento-San Joaquin Delta. Note: at the time of writing, the values are 5.0 ug/l (4-day average) and 20 ug/l (1-hr. average).

j. Tributyltin is a compound used as an antifouling ingredient in marine paints and toxic to aquatic life in low concentrations. U.S. EPA has published draft criteria for protection of aquatic life (Federal Register: December 27, 2002, Vol. 67, No. 249, Page 79090-79091). These criteria are cited for advisory purposes. The draft criteria may be revised.

k. The 24-hour average aquatic life protection objective for total PAHs is retained from the 1995 Basin Plan. Source: U.S. EPA 1980.

Table 3-3B: Marine[a] Water Quality Objectives for Mercury in San Francisco Bay[b]

Protection of Human Health	0.2 mg mercury per kg fish tissue	Average wet weight concentration measured in the edible portion of trophic level 3 and trophic level 4 fish[c]
Protection of Aquatic Organisms and Wildlife	0.03 mg mercury per kg fish	Average wet weight concentration measured in whole fish 3–5 cm in length

Notes:

a. Marine waters are those in which the salinity is equal to or greater than 10 parts per thousand 95% of the time, as set forth in Chapter 4 of the Basin Plan. For waters in which the salinity is between 1 and 10 parts per thousand, the applicable objectives are the more stringent of the freshwater or marine objectives.

b. Objectives apply to all segments of San Francisco Bay, including Sacramento/San Joaquin River Delta (within San Francisco Bay region), Suisun Bay, Carquinez Strait, San Pablo Bay, Richardson Bay, Central San Francisco Bay, Lower San Francisco Bay, and South San Francisco Bay (including the Lower South Bay) ~~all marine and estuarine waters contiguous to San Francisco Bay~~.

c. Compliance shall be determined by analysis of fish tissue as described in Chapter 6, Surveillance and Monitoring.

Chapter 4. Continuing Planning

The following revisions indicated in underline/strikeout are proposed for the section at the end of Chapter 4, Continuing Planning.

WATER BOARD RESOURCE ALLOCATION

The items indicated below have been identified in this review as specific areas for which Water Board planning resources should be allocated. The items are divided into categories and each item is followed by an estimate of the frequency at which the item will be reviewed or the staff time and/or contract dollars needed to complete the item. Resolution of these items may result in future Basin Plan amendments.

TOTAL MAXIMUM DAILY LOAD	
Review the San Francisco Bay ~~M~~mercury TMDL and evaluate new and relevant information from monitoring, special studies, and scientific literature. Determine if modifications to the targets, allocations, or implementation plan are necessary.	Every 5 years

Chapter 6. Surveillance and Monitoring

The following insertion indicated in underline is proposed for Chapter 6, Surveillance and Monitoring, immediately after the "Compliance Monitoring" section, and before the "Complaint Investigation" section.

Compliance Monitoring – San Francisco Bay Mercury Human Health Objective

Compliance with the human health marine water quality objective for mercury in San Francisco Bay (Table 3-3B) will be evaluated in fish at the lengths shown below. The mercury concentration in the edible portion of these five species will be averaged and compared to the human health water quality objective.

Table 6-4. Five Most Commonly Consumed Bay Fish	
Species and Edible Portion	Evaluation Length (cm)
Striped bass, muscle without skin	60
California halibut, muscle without skin	75
Jacksmelt, muscle with skin and skeleton	25
White sturgeon, muscle without skin	135
White croaker, muscle with skin	25

Chapter 7. WATER QUALITY ATTAINMENT STRATEGIES, INCLUDING TOTAL MAXIMUM DAILY LOADS

The following text is proposed for insertion into Chapter 7, Water Quality Attainment Strategies, Including Total Maximum Daily Loads, immediately after the introduction of the section Toxic Pollutant Management in the Larger San Francisco Bay Estuary System. For clarity, revisions to text adopted by the Water Board in September 2004 are indicated below in underline/strikeout.

San Francisco Bay Mercury TMDL

The following sections establish the allowable annual mercury load (Total Maximum Daily Load [TMDL]) to San Francisco Bay, and actions and monitoring necessary to implement the TMDL. The numeric targets, allocations, and associated implementation plan will ensure that all San Francisco Bay segments attain applicable water quality standards, including the mercury water quality objectives set forth in Table 3-3B, established to protect and support beneficial uses.

The TMDL allocations and implementation plan focus on controlling the amount of mercury that reaches the Bay and identifying and implementing actions to minimize mercury bioavailability. The organic form of mercury (methylmercury) is toxic and bioavailable, but information on ways of controlling methylmercury production is limited. However, this is an area of active research and strategies for controlling this process are forthcoming. The effectiveness of implementation actions, monitoring to track progress toward targets, and the scientific understanding pertaining to mercury will be periodically reviewed and the TMDL may be adapted as warranted.

Problem Statement

San Francisco Bay is impaired because mercury contamination is adversely affecting existing beneficial uses, including sport fishing, preservation of rare and endangered species, and wildlife habitat. Mercury concentrations in San Francisco Bay fish are high enough to threaten the health of humans who consume them. In addition, mercury concentrations in some bird eggs harvested from the shores of San Francisco Bay are high enough to account for abnormally high rates of eggs failing to hatch.

In the context of this TMDL, "San Francisco Bay" refers to the following water bodies:

- Sacramento/San Joaquin River Delta (within San Francisco Bay region)
- Suisun Bay
- Carquinez Strait
- San Pablo Bay
- Richardson Bay
- Central San Francisco Bay
- Lower San Francisco Bay
- South San Francisco Bay (including the Lower South Bay)

This TMDL also addresses the following mercury-impaired water bodies that exist within the water bodies listed above:

- Castro Cove (part of San Pablo Bay)
- Oakland Inner Harbor (part of Central San Francisco Bay)
- San Leandro Bay (part of Central San Francisco Bay)

Numeric Targets

TMDL numeric targets interpret narrative and/or numeric water quality standards, including beneficial uses and water quality objectives. To protect ~~sport fishing and human health~~humans who consume Bay fish, the average fish tissue mercury concentration for a ~~typically~~ commonly consumed fish species ~~shall not exceed 0.2 mg mercury per kg fish tissue (wet weight)~~ is specified below as a human health target. To protect wildlife and rare and endangered species, the average fish tissue mercury concentration ~~of mercury~~ in fish consumed by piscivorous birds is specified below as a wildlife target.~~bird eggs shall be less than 0.05 mg mercury per kg wet weight.~~ The goal of this target is that controllable water quality factors not cause detrimental mercury concentrations in San Francisco Bay ~~bird eggs~~wildlife, which is consistent with the bioaccumulation objective in Chapter 3. To achieve the human health and wildlife ~~fish tissue and bird egg~~ targets and to attain water quality standards, the Baywide suspended sediment mercury concentration target is 0.2 mg mercury per kg dry sediment.

The Regional Monitoring Program (RMP) conducts monitoring relevant to evaluating progress toward meeting the sediment and human health and wildlife ~~fish tissue~~ targets~~, and the U.S. Fish and Wildlife Service collects information on bird egg mercury concentrations useful to evaluate progress toward meeting the bird egg target~~. The following passages describe acceptable approaches to evaluate progress toward meeting the targets. Other approaches can be considered during adaptive implementation reviews.

Suspended Sediment Target

The suspended sediment target (0.2 mg mercury per kg dry sediment) shall be compared to the annual median Bay suspended sediment mercury concentration found through RMP monitoring. The suspended sediment mercury concentration shall be computed as the difference between total and dissolved mercury concentration in a water sample (at each location) divided by the suspended sediment concentration for that same sample.

Human Health Target

The human health target is a fish tissue mercury concentration (0.2 mg mercury per kg fish tissue). This target applies to average wet weight fish tissue muscle concentrations in 60 cm long striped bass. The RMP conducts fish tissue sampling and analysis in San Francisco Bay every three years. Progress toward attainment of the human health target shall be evaluated by tracking mercury concentrations in striped bass, a ~~frequently~~ commonly consumed sport fish with relatively high mercury concentrations. Striped bass are routinely caught in three size ranges: 45-59 cm (small), 60-82 cm (medium), and larger than 82 cm (large). To provide sufficient data to evaluate the target, striped bass in the small and medium size ranges should be caught and analyzed. The best functional

relationship between mercury concentration and length shall be established for the fish caught, and the resulting equation of fit shall be evaluated at 60 cm to compute the mercury concentration to compare to the human health target. The RMP tracks mercury concentrations in other San Francisco Bay sportfish, such as halibut and jack-smelt. This information will be used to assess overall trends and human health risks.

Wildlife Target

The wildlife target is ~~expressed as~~ a ~~bird egg~~ fish tissue mercury concentration (~~less than 0.5~~0.03 mg mercury per kg fish). This target applies to average wet weight whole fish concentrations in 3–5 cm length fish. ~~The RMP is collaborating with the U.S. Fish and Wildlife Service on long-term monitoring and analysis of bird eggs. Eggs will be collected at several locations throughout San Francisco Bay. The wildlife target will be compared to the computed 99th percentile mercury concentration in eggs.~~

~~In addition to measuring mercury concentrations in bird eggs directly, it is also useful to measure the amount of mercury in bird prey. The Water Board will work with t~~The RMP ~~to~~ is developing a long term monitoring program to evaluate mercury concentrations in ~~prey~~ small fish typically consumed by birds, including by the California least tern. Progress toward attainment of the wildlife target will be evaluated by tracking mercury concentrations in 3–5 cm long Bay fish. The RMP is also collaborating with the U.S. Fish and Wildlife Service on long-term monitoring and analysis of bird egg mercury concentrations. ~~Prey species should include benthic invertebrates and small fish that are typically consumed by piscivorous birds. According to the U.S. Fish and Wildlife Service, the sensitive and endangered California least tern will be protected if the average mercury concentration in the fish it consumes does not exceed 0.03 mg per kg fish tissue (wet weight). Achieving this prey fish concentration is an alternative method of demonstrating attainment of the wildlife target.~~

Sources and Losses

During the California Gold Rush, cinnabar mines in the Central Coast Ranges produced the mercury used to extract gold from the Sierra Nevada foothills. Mercury was later mined and used to produce munitions, electronics, and health care and commercial products.

The year 2003 estimate of total mercury inputs to the San Francisco Bay is about 1220 kg/yr. The sources of mercury in San Francisco Bay include bed erosion (about 460 kg/yr), the Central Valley watershed (about 440 kg/yr), urban stormwater runoff (about 160 kg/yr), the Guadalupe River watershed (about 92 kg/yr), direct atmospheric deposition (about 27 kg/yr), non-urban stormwater runoff (about 25 kg/yr), and wastewater discharges (about ~~20~~18 kg/yr). There is a potential that mercury may enter the Bay from Bay margin contaminated sites and abandoned mercury mines outside the Guadalupe watershed. An evaluation of these potential sources is addressed below under Mercury TMDL Implementation.

Using box models for sediment and mercury inputs and outputs to and from San Francisco Bay, the 2003 estimate for San Francisco Bay mercury losses is approximately 1700 kg/yr. Mercury leaves the Bay by transport to the Pacific Ocean via the Golden Gate, the net result of dredging and disposal (in-Bay and upland), and other losses.

Allocations

Tables 4-v through 4-z present load and wasteload allocations for San Francisco Bay mercury sources. Table 4-v presents load and wasteload allocations by source category and the 2003 estimated annual loads. Tables 4-w through 4-z contain wasteload allocations for individual wastewater and urban stormwater discharges to San Francisco Bay. When summed, the individual allocations equal the category totals for urban stormwater and wastewater shown in Table 4-v.

TABLE 4-v: Mercury Load and Wasteload Allocations By Source Category

Source	2003 Mercury Load (kg/yr)	Allocation (kg/yr)
Bed Erosion[a]	460	220
Central Valley Watershed	440	330
Urban Stormwater Runoff	160	82
Guadalupe River Watershed (mining legacy)	92[b]	2
Atmospheric Deposition	27	27
Non-Urban Stormwater Runoff	25	25
Wastewater (municipal and industrial)	~~20~~18	~~20~~12
Sediment Dredging and Disposal[c]	net loss	0 ≤ ambient concentration

Notes:

a. Bed erosion occurs as mercury buried in Bay sediment becomes available for biological uptake when overlying sediment erodes.

b. This load does not account for mercury captured in ongoing sediment removal programs conducted in the watershed.

c. Sediment dredging and disposal often moves mercury-containing sediment from one part of the Bay to another. The dredged sediment mercury concentration generally reflects ambient conditions in San Francisco Bay sediment. This allocation is both mass-based and concentration-based. The allocation will be implemented by confirming both that the combined effect of dredging and disposal continues to be a net loss and that the mercury concentration of dredged material disposed in the Bay must be at or below the Baywide ambient mercury concentration. This allocation ensures that this source category continues to represent a net loss of mercury.

TABLE 4-w: Individual Wasteload Allocations for Urban Stormwater Discharges			
Entity	**NPDES Permit**	**Allocation (kg/yr)[a]**	**Load Reduction (kg/yr)[b]**
Santa Clara Valley Urban Runoff Pollution Prevention Program	CAS029718	23	21
Alameda Countywide Clean Water Program	CAS029831	20	19
Contra Costa Clean Water Program	CAS029912	11	11
San Mateo County Stormwater Pollution Prevention Program	CAS029921	8.4	8.0
Vallejo Sanitation and Flood Control District	CAS612006	1.6	1.6
Fairfield-Suisun Urban Runoff Management Program	CAS612005	1.6	1.5
American Canyon	CAS612007	0.14	0.13
Sonoma County area [c]	CAS000004	1.6	1.5
Napa County area [c]	CAS000004	1.6	1.5
Marin County area [c]	CAS000004	3.3	3.2
Solano County area [c]	CAS000004	0.81	0.77
San Francisco County area [c,d]	CAS000004	8.8	8.4
Total		*82*[e]	*78*[e]

Notes:

[a] Allocations implicitly include all current and future permitted discharges within the geographic boundaries of municipalities and unincorporated areas including, but not limited to, California Department of Transportation (Caltrans) roadways and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.

[b] This column contains calculated load reductions relative to the estimated 2003 urban stormwater runoff annual load that are consistent with attaining the wasteload allocation. Demonstration of such load reductions is an alternative manner of showing compliance with the allocations.

[c] Includes unincorporated areas and all municipalities in the county that are in the Region and drain to the Bay. The statewide municipal stormwater general permit issued by the State Water Resources Control Board covers these municipalities.

[d] This urban stormwater runoff load estimate does not account for treatment provided by San Francisco's combined sewer system. The treatment provided by the Bayside facilities (NPDES permit CA0037664) will be credited toward meeting the allocation and load reduction.

[e] These totals differ slightly from the column sum due to rounding.

TABLE 4-x: Individual Wasteload Allocations for Municipal Wastewater Discharges				
Permitted Entity	NPDES Permit	~~Allocation~~ 2000–2003 Load (kg/yr)	Interim Allocation (kg/yr)	Final Allocation (kg/yr)
American Canyon, City of	**CA0038768**	**0.12**	0.095	0.095
California Department of Parks and Recreation, Angel Island State Park	CA0037401	0.013	0.013	0.013
Benicia, City of	CA0038091	0.088	0.088	0.088
Burlingame, City of	CA0037788	0.089	0.089	0.089
Calistoga, City of	CA0037966	0.016	0.016	0.016
Central Contra Costa Sanitary District	CA0037648	2.23	1.8	1.3
Central Marin Sanitation Agency	CA0038628	0.18	0.15	0.11
Delta Diablo Sanitation District	CA0038547	0.31	0.25	0.19
East Bay Dischargers Authority Dublin-San Ramon Services District (CA0037613) Hayward Shoreline Marsh (CA0038636) Livermore, City of (CA0038008) Union Sanitary District, wet weather (CA0038733)	CA0037869	~~3.67~~3.6	2.9	2.2
East Bay Municipal Utilities District	CA0037702	2.~~57~~6[a]	2.1	1.5
East Brother Light Station	CA0038806	0.00001	0.000012	0.000012
Fairfield-Suisun Sewer District	**CA0038024**	**0.22**	**0.17**	**0.17**
Las Gallinas Valley Sanitary District	CA0037851	0.17	0.13	0.10
Marin County Sanitary District, Paradise Cove	CA0037427	0.~~001~~00055	0.00055	0.00055
Marin County Sanitary District, Tiburon	CA0037753	0.~~01~~0099	0.0099	0.0099
Millbrae, City of	CA0037532	0.052	0.052	0.052
Mountain View Sanitary District	**CA0037770**	**0.034**	**0.034**	**0.034**
Napa Sanitation District	CA0037575	0.28	0.23	0.17
Novato Sanitary District	CA0037958	0.079	0.079	0.079
Palo Alto, City of	**CA0037834**	**0.38**	**0.31**	**0.31**
Petaluma, City of	CA0037810	0.063	0.063	0.063
Pinole, City of	CA0037796	0.055	0.055	0.055
Contra Costa County, Port Costa Wastewater Treatment Plant	CA0037885	0.~~001~~00072	0.00072	0.00072
Rodeo Sanitary District	CA0037826	0.060	0.060	0.060
Saint Helena, City of	CA0038016	0.047	0.047	0.047
San Francisco, City and County of, San Francisco International Airport WQCP	CA0038318	0.032	0.032	0.032
San Francisco, City and County of, Southeast Plant	CA0037664	2.6~~8~~7	2.1	1.6
San Jose/Santa Clara WPCP	**CA0037842**	**1.0**	**0.80**	**0.80**
San Mateo, City of	CA0037541	0.32	0.26	0.19
Sausalito-Marin City Sanitary District	CA0038067	0.078	0.078	0.078
Seafirth Estates	CA0038893	0.~~001~~00036	0.00036	0.00036

TABLE 4-x (continued): Individual Wasteload Allocations for Municipal Wastewater Discharges				
Permitted Entity	**NPDES Permit**	~~**Allocation 2000–2003 Load (kg/yr)**~~	**Interim Allocation (kg/yr)**	**Final Allocation (kg/yr)**
Sewerage Agency of Southern Marin	CA0037711	0.13	0.10	0.076
Sonoma Valley County Sanitary District	CA0037800	0.041	0.041	0.041
South Bayside System Authority	CA0038369	0.53	0.42	0.32
South San Francisco/San Bruno WQCP	CA0038130	0.29	0.24	0.18
Sunnyvale, City of	**CA0037621**	**0.15**	**0.12**	**0.12**
US Naval Support Activity, Treasure Island WWTP	CA0110116	0.026	0.026	0.026
Vallejo Sanitation & Flood Control District	CA0037699	0.57	0.46	0.34
West County Agency, Combined Outfall	CA0038539	0.38[c]	0.30	0.23
Yountville, Town of	CA0038121	0.040	0.040	0.04
Total		*17*[b]	*14*[b]	*11*[b]

Notes:

Bold text indicates advanced treatment

[a] This allocation includes wastewater treatment and all wet weather facilities.

[b] Total differs slightly from the column sum due to rounding.

[c] Mercury monitoring data quality concerns pertaining to this discharger will need to be addressed during the next review.

TABLE 4-y: Individual Wasteload Allocations for Petroleum Refinery Wastewater Discharges		
Permitted Entity	**NPDES Permit**	**Allocation (kg/yr)**
Chevron Products Company	CA0005134	~~0.38~~0.34
ConocoPhillips	CA0005053	~~0.15~~0.13
Martinez Refining Co. (formerly Shell)	CA0005789	~~0.25~~0.22
Ultramar, Golden Eagle	CA0004961	~~0.13~~0.11
Valero Refining Company	CA0005550	~~0.09~~0.08
Total		~~*1.0*~~*0.9*

TABLE 4-z: Individual Wasteload Allocations for Industrial (Non-Petroleum Refinery) Wastewater Discharges[c]		
Permitted Entity	**NPDES Permit**	**Allocation (kg/yr)**
C&H Sugar Co.	CA0005240	~~1.56~~0.0013
Crockett Cogeneration	CA0029904	~~0.005~~0.0047
The Dow Chemical Company	CA0004910	~~0.044~~0.041
General Chemical	CA0004979	~~0.23~~0.21[a]
GWF Power Systems, Site I	CA0029106	~~0.002~~0.0016
GWF Power Systems, Site V	CA0029122	~~0.003~~0.0025
Hanson Aggregates, Amador Street	CA0030139	~~0.001~~0.000005
Hanson Aggregates, Olin Jones Dredge Spoils Disposal	CA0028321	~~0.001~~0.000005
Hanson Aggregates, Tidewater Ave. Oakland	CAA030147	~~0.001~~0.000005
Pacific Gas and Electric, East Shell Pond	CA0030082	~~0.001~~0.00063
Pacific Gas and Electric, Hunters Point Power Plant	CA0005649	~~0.022~~0.020
Rhodia, Inc.	CA0006165	~~0.012~~0.011
San Francisco, City and Co., SF International Airport Industrial WTP	CA0028070	~~0.055~~0.051
Southern Energy California, Pittsburg Power Plant	CA0004880	~~0.008~~0.0078
Southern Energy Delta LLC, Potrero Power Plant	CA0005657	0.0031
United States Navy, Point Molate	CA0030074	0.013
USS-Posco	CA0005002	~~0.047~~0.045
Total		~~*2.0*~~*0.4*[b]

Notes:

[a] Data quality concerns pertaining to this discharger will need to be addressed during the next review.

[b] Total differs slightly from the column sum due to rounding.

[c] Wasteload allocations for industrial wastewater discharges do not include mass from once-through cooling water. The Water Board will apply intake credits to once-through cooling water as allowed by law.

Total Maximum Daily Load

The mercury TMDL for San Francisco Bay is the sum of the load and wasteload allocations, ~~706~~ 700 kg/yr. The Bay will attain applicable water quality standards for mercury when the overall mercury load is reduced to the TMDL and mercury methylation control measures are implemented.

A TMDL must include a margin of safety to account for any lack of knowledge concerning the relationship between load and wasteload allocations and water quality. This TMDL's targets and allocations rely on conservative assumptions, which thereby provide an implicit margin of safety. The adaptive approach to implementation provides an additional margin of safety.

There is no evidence that mercury contamination in San Francisco Bay is worse at any particular time of year. Therefore, the TMDL and allocation scheme do not have a seasonal component.

Mercury TMDL Implementation

The San Francisco Bay mercury TMDL implementation plan has four objectives: (1) reduce mercury loads to achieve load and wasteload allocations, (2) reduce methylmercury production and consequent risk to humans and wildlife exposed to methylmercury, (3) conduct monitoring and focused studies to track progress and improve the scientific understanding of the system, and (4) encourage actions that address multiple pollutants. The plan establishes requirements for dischargers to reduce or control mercury loads and identifies actions necessary to better understand and control methylmercury production. In addition, it addresses potential mercury sources and describes actions necessary to manage risks to Bay fish consumers. The adaptive implementation section describes the method and schedule for evaluating and adapting the TMDL and implementation plan as needed to assure water quality standards are attained.

Mercury Source Control Actions

This section, organized by mercury source categories, specifies actions required to achieve allocations and implement the TMDL.

Central Valley Watershed

The Central Valley Regional Water Quality Control Board (Central Valley Water Board) is developing mercury TMDLs for several mercury-impaired water bodies in its region that drain to San Francisco Bay. The Central Valley Water Board staff is currently developing a mercury TMDL for portions of the Delta within the Central Valley region designed to meet the Central Valley watershed's load allocation. This Delta mercury TMDL is scheduled for consideration as a Basin Plan Amendment by the Central Valley Water Board by December ~~2005~~2006.

Attainment of the load allocation shall be assessed as a five-year average annual mercury load by one of two methods. First, attainment may be demonstrated by documentation provided by the Central Valley Water Board that shows a net 110 kg/yr decrease in total mercury entering the Delta from within the Central Valley region. Alternatively, attainment of the load allocation may be demonstrated by multiplying the flow-weighted suspended sediment mercury concentration by the sediment load measured at the RMP Mallard Island monitoring station. If sediment load estimates are unavailable, the load shall be assumed to be 1,600 million kg of sediment per year. The mercury load fluxing past Mallard Island will be less than or equal to 330 kg/yr after attainment of the allocation.

The allocation for the Central Valley watershed should be achieved within 20 years after the Central Valley Water Board begins implementing its TMDL load reduction program. Studies need to be conducted to evaluate the time lag between the remediation of mercury sources and resulting load reductions from the Delta. An interim loading milestone of 385 kg/yr of mercury, halfway between the current load and the allocation, should be

attained ten years after implementation of the Central Valley Delta TMDL begins. This schedule will be reevaluated as the load reduction plans are implemented.

Urban Stormwater Runoff

The wasteload allocations shown in Table 4-w shall be implemented through the NPDES stormwater permits issued to urban runoff management agencies and the California Department of Transportation (Caltrans). The urban stormwater runoff allocations implicitly include all current and future permitted discharges, not otherwise addressed by another allocation, and unpermitted discharges within the geographic boundaries of urban runoff management agencies (collectively, "source category") including, but not limited to, Caltrans roadway and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.

The allocations for this source category should be achieved within 20 years, and, as a way to measure progress, an interim loading milestone of 120 kg/yr, halfway between the current load and the allocation, should be achieved within ten years. If the interim loading milestone is not achieved, NPDES-permitted entities shall demonstrate reasonable and measurable progress toward achieving the 10-year loading milestone.

The NPDES permits for urban runoff management agencies shall require the implementation of best management practices and control measures designed to achieve the allocations or accomplish the load reductions derived from the allocations. In addition to controlling mercury loads, best management practices or control measures shall include actions to reduce mercury-related risks to humans and wildlife. Requirements in each permit issued or reissued and applicable for the term of the permit shall be based on an updated assessment of control measures intended to reduce pollutants in stormwater runoff to the maximum extent practicable and remain consistent with the section of this chapter titled "Surface Water Protection and Management—Point Source Control—Stormwater Discharges". The following additional requirements are or shall be incorporated into NPDES permits issued or reissued by the Water Board for urban runoff management agencies.

i) Evaluate and report on the spatial extent, magnitude, and cause of contamination for locations where elevated mercury concentrations exist;

ii) Develop and implement a mercury source control program;

iii) Develop and implement a monitoring system to quantify either mercury loads or loads reduced through treatment, source control, and other management efforts;

iv) Monitor levels of methylmercury in discharges;

~~iv~~v) Conduct or cause to be conducted studies aimed at better understanding mercury fate, transport, and biological uptake in San Francisco Bay and tidal areas;

~~v~~vi) Develop an equitable allocation-sharing scheme in consultation with Caltrans (see below) to address Caltrans roadway and non-roadway facilities in the program area, and report the details to the Water Board;

vii) Prepare an annual report that documents compliance with the above requirements and documents either mercury loads discharged, or loads reduced through ongoing pollution prevention and control activities; and

viii) Demonstrate progress toward (a) the interim loading milestone, or (b) attainment of the allocations shown in Table 4-w, by using one of the following methods:

1) Quantify the annual average mercury load reduced by implementing (a) pollution prevention activities, and (b) source and treatment controls. The benefit of efforts to reduce mercury-related risk to wildlife and humans should also be quantified. The Water Board will recognize such efforts as progress toward achieving the interim milestone and the mercury-related water quality standards upon which the allocations and corresponding load reductions are based. Loads reduced as a result of actions implemented after 2001 (or earlier if actions taken are not reflected in the 2001 load estimate) may be used to estimate load reductions.

2) Quantify the mercury load as a rolling five-year annual average using data on flow and water column mercury concentrations.

3) Quantitatively demonstrate that the mercury concentration of suspended sediment that best represents sediment discharged with urban runoff is below the suspended sediment target.

~~An urban runoff management agency that complies with these permit requirements shall be deemed to be in compliance with receiving water limitations relative to mercury.~~ Once the Water Board accepts that a requirement has been completed by an urban runoff management agency, it need not be included in subsequent permits for that agency. These requirements apply to municipalities covered by the statewide municipal stormwater general permit (issued by the State Water Resources Control Board) five years after the effective date of the~~is~~ San Francisco Bay ~~M~~mercury TMDL.

Urban runoff management agencies have a responsibility to oversee various discharges within the agencies' geographic boundaries. However, if it is determined that a source is substantially contributing to mercury loads to the Bay or is outside the jurisdiction or authority of an agency the Water Board will consider a request from an urban runoff management agency which may include an allocation, load reduction, and/or other regulatory requirements for the source in question.

Within the jurisdiction of each urban runoff management agency, Caltrans is responsible for discharges associated with roadways and non-roadway facilities. Consequently, Caltrans shall be required to implement the following actions:

i) Develop and implement a system to quantify mercury loads or loads reduced through control actions;

ii) Prepare an annual report that documents mercury loads or loads reduced through control actions; and

iii) Develop an equitable allocation-sharing scheme that reflects Caltrans load reduction responsibility in consultation with the urban runoff management agencies, and report the details to the Water Board. Alternatively, Caltrans may choose to implement load

reduction actions on a watershed or regionwide basis in lieu of sharing a portion of an urban runoff management agency's allocation. In such a case, the Water Board will consider a separate allocation for Caltrans for which they may demonstrate progress toward attaining an allocation or load reduction in the same manner mentioned previously for municipal programs.

Guadalupe River Watershed (Mining Legacy)

In the near term, the effort underway to develop the Guadalupe River Watershed Mercury TMDL will be the mechanism used to implement and track progress toward achieving the load allocation. Ultimately, the Water Board expects the implementation plan for the Guadalupe River Watershed Mercury TMDL to integrate implementation efforts relative to that TMDL with those implementation efforts for the San Francisco Bay ~~M~~mercury TMDL.

The Guadalupe River Watershed Mercury TMDL will provide a watershed-wide mercury management strategy. Efforts are already underway in the watershed to take early actions to reduce mercury loads, and more are planned. A high priority for the watershed-based strategy is to control upper watershed sources associated with the mining legacy to avoid compromising actions taken in the lower watershed. The strategy will include measures that prevent mercury-laden sediment from reaching the Bay, either by removal or by preventing their transport to the Bay. The strategy will also feature measures intended to reduce methylmercury production and risks to human health and wildlife. An essential component of the strategy will also involve testing and evaluation of new techniques and control measures, the benefits of that may apply throughout the Bay. As the mercury load, methylation, and reductions resulting from these efforts are quantified by the dischargers identified through the Guadalupe River Watershed Mercury TMDL process, the Water Board will consider how the reductions achieved will be counted toward fulfillment of the load reductions required to meet the Guadalupe River watershed load allocation.

The Guadalupe River watershed mining legacy mercury load allocation is expected to be attained within 20 years after the Water Board begins implementing the Guadalupe River Watershed Mercury TMDL. As a way to measure progress, an interim-loading milestone of 47 kg/yr of mercury, halfway between the current load and the allocation, should be achieved within ten years. If the interim loading milestone is not achieved, dischargers shall make reasonable and measurable progress toward achieving the ten-year load reduction through implementation of the watershed-wide strategy.

Progress toward (a) the interim loading milestone, or (b) attainment of the allocation, shall be demonstrated by the dischargers identified through the Guadalupe River Watershed TMDL using one of the methods listed below:

1. Quantify the annual average mercury load reduced by implementing (a) pollution prevention activities, (b) source and treatment controls, and (c) if applicable, other efforts to reduce methylation or mercury-related risks to humans and wildlife consistent with the watershed-based strategy. The Water Board will recognize loads reduced resulting from activities implemented after 1996 (or earlier if actions taken are not reflected in the 2001 load estimate) to estimate load reductions.

2. Quantify the mercury load as a rolling five-year annual average using data on flow and water column mercury concentrations.
3. Quantitatively demonstrate that the mercury concentration of suspended sediment that best represents sediment discharged from the watershed to San Francisco Bay is below the suspended sediment target.

Municipal Wastewater

The individual municipal wastewater wasteload allocations shown in Table 4-x shall be implemented via individual mass limits and an aggregate mass limit that is the sum of the individual allocations, 11 kg/yr. ~~as a group mass limit.~~ The Water Board will issue a San Francisco Bay watershed mercury NPDES permit to all dischargers listed in Table 4-x to implement the individual and aggregate mass limits. ~~. The group mass limit is the sum of the individual allocations for these facilities, 17 kg/yr. If the group mass limit is exceeded, the Water Board will pursue enforcement actions against those individual dischargers whose mass emissions exceed their individual wasteload allocations.~~

The wasteload allocations for this source category shall be achieved within 20 years, and, as a way to measure progress, interim individual allocations equal to a 20 percent reduction from 2000-2003 annual mass discharge levels shall be achieved within 10 years. These interim allocations, shown in Table 4-x, shall be implemented via individual mass limits and an aggregate mass limit that is the sum of the individual interim allocations, 14 kg/yr. During the initial ten years, individual mass limits shall be the 2000-2003 annual mass discharge levels shown in Table 4-x, and the aggregate mass limit is the sum of these individual mass discharge levels.

If ~~the group mass limit is~~ any aggregate mass limit is exceeded, the Water Board will pursue enforcement actions against those individual dischargers whose mass ~~emissions~~ discharges exceed their individual ~~wasteload allocations~~ mass limits.

The ~~group~~ mass limits and the following requirements shall be incorporated into the watershed NPDES permit for municipal wastewater dischargers:

- Develop and implement effective programs that include but are not limited to pollution prevention to control mercury sources and loading, a plan and schedule of actions and effectiveness measures ~~and reduce mercury-related risks to humans and wildlife~~ applicable for the term of the permit, based on identification of the largest and most controllable sources and an updated assessment of source control measures and wastewater treatment technologies (the level of effort shall be commensurate with the mercury load and performance of the facility) and quantify the mercury load avoided or reduced ~~and risk reductions resulting from these activities~~;
- Develop and implement effective programs to reduce mercury-related risks to humans and wildlife and quantify risk reductions resulting from these activities;

- Comply with water quality-based effluent limitations, to be elaborated through the permit, that are consistent with the assumptions and requirements of the mercury wasteload allocation;
- Track individual facility and aggregate wastewater loads and the status of source control and pollution prevention activities;
- Monitor levels of methylmercury in discharges;
- Conduct or cause to be conducted studies aimed at better understanding mercury fate, transport, the conditions under which mercury methylation occurs, and biological uptake in San Francisco Bay and tidal areas;
- Conduct or cause to be conducted studies to evaluate the presence or potential for local effects on fish, wildlife, and rare and endangered species in the vicinity of wastewater discharges; and
- Prepare an annual report that documents mercury loads from each facility, mercury and methylmercury effluent concentrations, and ongoing source control activities, including mercury loads avoided through control actions.

The watershed NPDES permit shall also specify conditions that apply to each individual facility. These conditions are intended to minimize the potential for adverse effects in the immediate vicinity of discharges and to ensure that municipal wastewater facilities maintain proper operation, maintenance, and performance. If a facility exceeds its individual mercury load allocation as a 12-month rolling average ~~and~~ or an effluent mercury trigger concentration, it shall be required to report the exceedance in its individual Self-Monitoring Report, implement a corrective action plan, and ~~to~~ submit a report within 60 days that:

- Evaluates the cause of the trigger or mass exceedances;
- Evaluates the effectiveness of existing pollution prevention or pretreatment programs and methods for preventing future exceedances;
- Evaluates the feasibility and effectiveness of technology enhancements to improve plant performance;
- Evaluates other measures for preventing future exceedances, depending on the cause of an exceedance; and
- Includes an action plan and time schedule to correct and prevent trigger exceedances.

Effluent mercury trigger concentrations for secondary treatment facilities are a daily maximum of 0.065 µg/l total mercury and monthly average of 0.041 µg/l total mercury. For advanced treatment facilities, effluent mercury trigger concentrations are a daily maximum of 0.021 µg/l total mercury and a monthly average of 0.011 µg/l total mercury.

The Water Board will pursue enforcement action against dischargers that do not respond to exceedances of triggers or do not implement reasonable actions to correct and prevent trigger exceedances. Determination of reasonable actions will be based on an updated

assessment of source control measures and wastewater treatment technologies applicable for the term of each issued or reissued permit.

Industrial Wastewater

The individual wasteload allocations for the industrial wastewater discharges from the five Bay Area petroleum refineries (Chevron, ConocoPhillips, ~~Shell~~Martinez Refining Co., Ultramar Golden Eagle, and Valero) ~~are shown~~listed in Table 4-y, and the ~~.The~~ individual wasteload allocations for all other industrial wastewater facilities ~~are~~ listed in Table 4-z shall be implemented via individual mass limits and an aggregate mass limit that is the sum of the individual allocations, 1.3 kg/yr. ~~. The total group allocation for industrial and refinery wastewater facilities is 3 kg/yr and shall be implemented as a group mass limit.~~ If the ~~group~~ aggregate mass limit is exceeded, the Water Board will pursue enforcement actions against those individual dischargers whose mass ~~emissions~~ discharges exceed their individual mass limits~~wasteload allocations~~.

The ~~group~~ mass limits and the following requirements shall be incorporated into NPDES permits for all industrial wastewater dischargers:

- Develop and implement effective programs to control mercury sources and loading including demonstration that discharge levels represent good performance based on an updated assessment of source control measures and wastewater treatment technologies ~~and reduce mercury-related risks to humans and wildlife~~ (the level of effort will be commensurate with the mercury load and performance of the facility) and quantify the mercury load avoided or reduced ~~and risk reductions resulting from these activities~~;
- Develop and implement effective programs to reduce mercury-related risks to humans and wildlife and quantify the risk reductions resulting from these activities;
- Comply with water quality-based effluent limitations, to be elaborated through the permit, that are consistent with the assumptions and requirements of the mercury wasteload allocation;
- Monitor levels of methylmercury in discharges;
- Conduct or cause to be conducted studies aimed at better understanding mercury fate, transport, the conditions under which mercury methylation occurs, and biological uptake in San Francisco Bay and tidal areas;
- Conduct or cause to be conducted studies to evaluate the presence or potential for local effects on fish, wildlife, and rare and endangered species in the vicinity of wastewater discharges; and
- Prepare an annual report that documents mercury loads from each facility, mercury and methylmercury effluent concentrations, and ongoing source control activities, including mercury loads avoided through control actions.

The NPDES permits for industrial facilities shall also specify conditions that apply to each individual facility. These conditions are intended to minimize the potential for adverse effects in the immediate vicinity of discharges and to ensure that industrial wastewater facilities maintain proper operation, maintenance, and performance. If a facility exceeds its individual mercury load allocation as a 12-month rolling average ~~and~~ or an effluent mercury trigger concentration, it shall be required to report the exceedance

in its individual Self-Monitoring Report, implement a corrective action plan, and ~~to~~ submit a report within 60 days that:

- Evaluates the cause of the trigger or mass exceedances;
- Evaluates the effectiveness of existing pollution prevention or pretreatment programs and methods for preventing future exceedances;
- Evaluates the feasibility and effectiveness of technology enhancements to improve plant performance;~~.~~
- Evaluates other measures for preventing future exceedances, depending on the cause of an exceedance; and
- Includes an action plan and time schedule to correct and prevent trigger exceedances.

Effluent mercury trigger concentrations are a daily maximum of 0.062 µg/l total mercury and monthly average of 0.037 µg/l total mercury.

The Water Board will pursue enforcement action against dischargers that do not respond to exceedances of triggers or do not implement reasonable actions to correct and prevent trigger exceedances. Determination of reasonable actions will be based on an updated assessment of source control measures and wastewater treatment technologies applicable for the term of each issued or reissued permit.

Bay Area petroleum refineries shall be required to work collaboratively with the Water Board to investigate the environmental fate of mercury in crude oil and report findings to the Water Board within five years of the effective date of the~~is~~ San Francisco Bay ~~M~~mercury TMDL implementation plan. These requirements may be implemented via the Water Board's authority under Section 13267 of the California Water Code or petroleum refinery wastewater NPDES permits. The report shall address two key questions:

1. What are the potential pathways by which crude oil mercury could be discharged to the Bay from Bay Area petroleum refining facilities?
2. What are the annual mercury loads associated with these discharge pathways?

Sediment Dredging and Disposal

The allocation for sediment dredging and disposal is both mass-based and concentration-based. The mercury concentration in dredged material disposed of in the Bay shall not exceed the 99th percentile mercury concentration of the previous 10 years of Bay sediment samples collected through RMP (excluding stations outside the Bay like the Sacramento River, San Joaquin River, Guadalupe River and Standish Dam stations). Prior to disposal, the material shall be sampled and analyzed according to the procedures outlined in the 2001 U.S. Army Corps of Engineers document "Guidelines for Implementing the Inland Testing Manual in the San Francisco Bay Region." All in-Bay disposal of dredged material shall comply with the Dredging and Disposal of Dredged Sediment program described in Chapter 4 and the Long-Term Management Strategy for the Placement~~Disposal~~ of Dredged Material in the San Francisco Bay Region.

The process of dredging and disposing of dredged material in the Bay may enhance biological uptake and methylmercury exposure. To address this concern, permitted dredging and disposal operations shall demonstrate that their activities are accomplished in a manner that does not increase bioavailability of mercury. As part of this demonstration, the Waste Discharge Requirements for such operations shall include requirements to conduct or cause to be conducted studies to better understand how their operations affect mercury fate, transport, and biological uptake.

Atmospheric Deposition

Mercury that deposits directly on the Bay surface and the surrounding watershed is attributed to both remote and local sources. The extent to which these sources can be controlled is unknown and the Water Board's authority to control such sources is limited. The load allocation does not allow an increase of current loads, and does not require a reduction from this source category at this time. Recent scientific studies suggest that mercury newly deposited from the atmosphere may be more available for biological uptake than mercury already present in an aquatic system. As such, the following implementation efforts need to be undertaken to evaluate the significance of atmospheric deposition and the feasibility of load reductions:

- The U.S. Environmental Protection Agency should investigate the significance of atmospheric deposition and actively pursue national and international efforts to reduce the amount of mercury released through combustion of fossil fuels; and
- The Bay Area Air Quality Management District should conduct a local mercury emissions inventory, investigate the significance of local mercury air emissions, evaluate the effectiveness of existing control measures and the feasibility of additional controls.

If local air sources are found to contribute substantially to atmospheric deposition loading to the Bay and its surrounding watershed, the Water Board will consider assigning allocations and load reductions to individual air sources and work with the Bay Area Air Quality Management District to ensure allocations are achieved.

New Mercury Sources

As the TMDL is implemented, new sources of mercury may emerge either as the result of a new facility applying for a discharge permit or as a result of a new source being discovered. The Water Board will consider establishing a load or wasteload allocation for a new mercury source under any of the following circumstances:

- The allocation from one or more existing sources of the same category (e.g., municipal wastewater) will be reduced by an amount equal to the new allocation; or
- The Water Board finds that the magnitude of the new allocation is negligible compared to load reductions from all sources that will have been realized prior to establishing the new allocation; or
- The allocation is for a previously unquantified discharge of mercury from a source category that does not already have an allocation.

This section specifies actions required for sources that are potentially either discharging mercury or enhancing methylmercury production in the Bay.

Mercury Mines

Local inactive mercury mines shall be addressed through continued implementation of the Mines and Mineral Producers Discharge Control Program (Mines Program) described ~~later~~ in ~~this e~~Chapter 4. The key regulatory component of this established program is that property owners of inactive and active mine sites that discharge stormwater contaminated by contact with any overburden, raw material, intermediate products, finished products, byproducts, or waste products are required to comply with NPDES industrial stormwater regulations. Under the Mines Program, the Water Board has the authority to issue individual industrial permits or allow the discharger to obtain coverage under the industrial stormwater general permit issued by the State Water Resources Control Board. For those mines that are not currently meeting the conditions set forth in the Mines Program, responsible parties shall attain compliance within five years of the effective date of the~~is~~ San Francisco Bay ~~M~~mercury TMDL implementation plan.

Bay Margin Contaminated Sites

A number of former industrial and military sites that contain mercury-enriched sediment surround the Bay. Available data are insufficient at this time to determine whether these sites may be discharging to the Bay. While the load these sites contribute to the Bay may be small relative to known sources, these sites may pose local threats. As such, cleanup of these sites is a Water Board priority and many cleanups are underway. The Water Board will require parties responsible for Bay margin contaminated sites to:

1. Quantify mercury mass on site such that the upper 95% confidence limit of the mean value is no more than 20% higher than the estimated mean;
2. Determine seasonal and spatial patterns of total mercury and methylmercury in sediments on site;
3. Estimate future mercury mass on site and patterns of contamination after planned remediation efforts are complete;
4. Determine seasonal patterns of total mercury and methylmercury in the water column at the site;
5. Collect prey items for local fish and birds and assess mercury concentrations; and
6. Quantify rate of sediment accretion or erosion at the site.

These requirements shall be incorporated into relevant site cleanup plans within five years of the effective date of the~~is~~ San Francisco Bay mercury TMDL, and the actions shall be fully implemented within ten years of the effective date of this TMDL.

Wetlands

Wetlands may contribute substantially to methylmercury production and biological exposure to mercury within the Bay. Plans for extensive wetland restoration in the San Francisco Bay region raise the concern that mercury methylation may increase, thereby increasing the amount of mercury entering the food web. Implementation tasks related to

wetlands focus on managing existing wetlands and ensuring that new constructed wetlands are designed to minimize methylmercury production and subsequent transfer to the food web.

The Water Board issues Waste Discharge Requirements and Clean Water Act Section 401 certifications that set forth conditions related to Bay filling and the construction and management of wetlands. To implement the San Francisco Bay mercury TMDL, the Waste Discharge Requirements and Section 401 certifications for wetland projects shall include provisions that the restored wetland region be designed and operated to minimize methylmercury production and biological uptake, and result in no net increase in mercury or methylmercury loads to the Bay. Additionally, projects must include pre- and post-restoration monitoring to demonstrate compliance. There is much active research on mercury cycling in wetlands. Information about how to manage wetlands to suppress or minimize mercury methylation will be adaptively incorporated into this implementation plan as it becomes available.

Risk Management

The mercury problem in San Francisco Bay may take decades to solve. However, there are activities that should be undertaken immediately to help manage the risk to consumers of mercury-contaminated fish. In this effort, the Water Board will work with the California Office of Environmental Health Hazard Assessment, the California Department of Health Services, and dischargers that pursue risk management as part of their mercury-related programs. The risk management activities will include the following:

- Providing multilingual fish-consumption advice to the public to help reduce methylmercury exposure through community outreach, broadcast and print media, and signs posted at popular fishing locations;
- Regularly informing the public about monitoring data and findings regarding hazards of eating mercury-contaminated fish; and
- Performing special studies needed to support health risk assessment and risk communication.
- Investigate ways to address public health impacts of mercury in San Francisco Bay/Delta fish, including activities that reduce actual and potential exposure of and mitigate health impacts to those people and communities most likely to be affected by mercury in San Francisco Bay caught fish, such as subsistence fishers and their families.

Adaptive Implementation

The Water Board will adapt the TMDL to incorporate new and relevant scientific information such that effective and efficient actions can be taken to achieve TMDL goals. Approximately every five years, the Water Board will review the San Francisco Bay ~~M~~mercury TMDL and evaluate new and relevant information from monitoring, special studies, and scientific literature. The reviews will be coordinated through the Water

Board's continuing planning program and will provide opportunities for stakeholder participation. Any necessary modifications to the targets, allocations, or implementation plan will be incorporated into the Basin Plan. At a minimum, the following focusing questions will be used to conduct the reviews. Additional focusing questions will be developed in collaboration with stakeholders during each review.

1. Is the Bay progressing toward TMDL targets as expected? If it is unclear whether there is progress, how should monitoring efforts be modified to detect trends? If there has not been adequate progress, how might the implementation actions or allocations be modified?
2. What are the loads for the various source categories, how have these loads changed over time, and how might source control measures be modified to improve load reduction?
3. Is there new, reliable, and widely accepted scientific information that suggests modifications to targets, allocations, or implementation actions? In particular, is there new evidence regarding methylmercury that might justify a methylmercury TMDL or allocation, either in addition to or instead of the total mercury TMDL and allocations? If so, how should the TMDL be modified?
4. Are effective risk management activities in place to reduce human and wildlife exposure to methylmercury? If not, how should these activities be modified or enhanced?
5. Do prey fish monitoring data confirm that TMDL load allocations are adequate to attain the wildlife target?
6. Are mercury mine and Bay margin contaminated site cleanups proceeding as expected? Are any additional actions needed to protect water quality?

Using available data, the load and wasteload allocations were determined on the basis of their sufficiency to achieve water quality standards. As part of the adaptive implementation process, the Water Board will review the TMDL as a whole and determine whether new evidence suggests revisions of specific load and wasteload allocations that will result in more strategic, efficient, and cost effective achievement of water quality standards. For example, as reliable information becomes available regarding methylation control or the relative bioavailability of sources, the Water Board will consider adjusting allocations to implement the TMDL more effectively. The Water Board may also consider revising implementation requirements and/or resulting permit requirements if such changes are consistent with the assumptions and requirements of the allocations and the cumulative effect of such changes will ensure attainment of water quality standards.

Achievement of the allocations for three of the largest source categories (Central Valley Watershed, Urban Stormwater Runoff, Guadalupe River Watershed) is projected to take 20 years, with an interim 10-year milestone of fifty percent achievement. Approximately 10 years after the effective date of the TMDL or any time thereafter, the Water Board will consider modifying the schedule for achievement of the load allocations for a source category or individual discharger provided that they have complied with all applicable permit requirements and all of the following have been accomplished relative to that source category or discharger:

- A diligent effort has been made to quantify mercury loads and the sources of mercury and potential bioavailability of mercury in the discharge;
- Documentation has been prepared that demonstrates that all technically and economically feasible and cost effective control measures recognized by the Water Board as applicable for that source category or discharger have been fully implemented, and evaluates and quantifies the comprehensive water quality benefit of such measures;
- A demonstration has been made that achievement of the allocation will require more than the remaining 10 years originally envisioned; and
- A plan has been prepared that includes a schedule for evaluating the effectiveness and feasibility of additional control measures and implementing additional controls as appropriate.

Achievement of the wasteload allocations for municipal wastewater dischargers is required within 20 years, and interim allocations within 10 years. The interim allocations are expected to be attained though aggressive pollution prevention and other cost-effective mercury reduction methods. The final wasteload allocations are expected to be attained through wastewater treatment system improvements and/or implementation of a pollutant offset program. Approximately 10 years after the effective date of the TMDL or any time thereafter, the Water Board will consider modifying the schedule for achievement of the wasteload allocations or revisions to wasteload allocations if:

- The State Board has not established a pollutant offset program that can be implemented within the 20 years required to achieve final wasteload allocations;.
- It can be demonstrated that all reasonable and feasible efforts have been taken to reduce mercury loads; and
- It can be demonstrated that no adverse local effects will result.

At approximately 20 years after the start of implementation and after taking the steps regarding schedule modification listed above, if a source category or individual discharger cannot demonstrate achievement of its allocation, despite implementation of all technically and economically feasible and cost effective control measures recognized by the Water Board as applicable for that source category or discharger, the Water Board will consider revising the allocation scheme provided that any resulting revisions ensure water quality standards are attained.

Load and wasteload allocations have been assigned to individual entities. However, assigning loads by watersheds could be a useful approach for managing pollutant loads, particularly if net environmental benefits can be realized. A watershed-based allocation program would only involve watersheds in the San Francisco Bay region that drain to the Bay. Such an approach could involve urban runoff management programs, wastewater facilities, and other dischargers in a watershed accepting joint responsibility for load reductions. An acceptable watershed allocation program may include incentives for agencies to implement load reduction activities and account for avoided mercury loads as well as incentives for strategic removal or sequestration of mercury already in the system. Credits could be used to offset annual loads and attain allocations for multiple sources.

In addition, the Water Board will encourage and consider a pilot mercury mass offset program if it is demonstrated that such a program is a more cost effective and efficient means of achieving water quality standards, and the relative potential for mercury from different sources to enter the food web and the potential for adverse local impacts have been evaluated. These programs should recognize and reward ongoing efforts that are above and beyond those required by this TMDL. Until such programs are established, the Water Board will consider mercury source control and risk reduction activities on a case-by-case basis to determine how they contribute toward achievement of TMDL goals. The Water Board will also include in any new or modified NPDES permit a reopener to implement a pollutant offset program when it is established.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SAN FRANCISCO BAY REGION

RESOLUTION R2-2008-0012

Amending the Water Quality Control Plan for the San Francisco Bay Region to Establish a Total Maximum Daily Load and Implementation Plan for PCBs in the San Francisco Bay

WHEREAS, the California Regional Water Quality Control Board, San Francisco Bay Region (Water Board), finds that:

1. The Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan) is the Water Board's master water quality control planning document. It designates beneficial uses and water quality objectives for waters of the State, including surface waters and groundwater. It also includes programs of implementation to achieve water quality objectives. The Basin Plan was duly adopted by the Water Board and approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law (OAL) and the United States Environmental Protection Agency (U.S. EPA), where required.
2. The Basin Plan may be amended in accordance with California Water Code § 13240, et seq.
3. The San Francisco Bay has been identified under federal Clean Water Act §303(d) as an impaired waterbody due to polychlorinated biphenyls (PCBs).
4. Under Clean Water Act § 303(d), the Water Board is required and authorized to establish the total maximum daily load (TMDL) for those pollutants identified as causing impairment of waters on the § 303(d) list. Additionally, the Water Board is authorized to develop a implementation program for achieving water quality standards, such as the narrative water quality objective.
5. On May 18, 2000, the U.S. EPA promulgated the California Toxics Rule (CTR) prescribing numeric water quality criteria for priority toxic pollutants, including PCBs, that apply to the San Francisco Bay.
6. A Basin Plan Amendment has been prepared in accordance with California Water Code § 13240 that will establish the TMDL and Implementation Plan to reduce PCBs-related risks to humans, aquatic life and wildlife and restore and protect water quality beneficial uses.
7. The Basin Plan Amendment, including specifications on its physical placement in the Basin Plan, is set forth in Exhibit A hereto.
8. The scientific basis for the regulatory elements of the proposed Basin Plan Amendment was subjected to an independent, external peer review by Professors Kevin J. Farley and Dr. David O. Carpenter, M.D, pursuant to the requirements of Health and Safety Code section 57004.

9. On June 22 and December 3, 2007, the Water Board publicly noticed the proposed Basin Plan Amendment and distributed the proposed Basin Plan Amendment, a draft Staff Report, and Environmental Checklist in accordance with applicable state and federal environmental regulations (CWC § 13244, title 23, California Code of Regulations, § 3775 et seq., and 40 CFR Part 25).

10. On September 12, 2007, the Water Board held a public hearing to consider the Basin Plan Amendment, after a 60-day public comment period.

12. On February 13, 2008, the Water Board held a second public hearing to consider the Basin Plan Amendment, after a second 45-day public comment period on the changes made on December 3, 2007, to the Basin Plan Amendment and supporting Staff Report, including response to public comments on the Amendment.

13. The process of basin planning has been certified by the Secretary for Resources as exempt from the requirement of the California Environmental Quality Act (Public Resources Code Section 21000 et seq.) to prepare an Environmental Impact Report or Negative Declaration.

14. The Basin Plan Amendment package includes a Staff Report, an Environmental Checklist, an assessment of the potential environmental impacts of the Basin Plan Amendment, and a discussion of alternatives. The Basin Plan Amendment, Environmental Checklist, Staff Report, and supporting documentation serve as a substitute environmental document under the Water Board's certified regulatory program.

15. The Water Board has duly considered the Environmental Checklist, Staff Report and supporting documentation with respect to environmental impacts and finds that the proposed Basin Plan Amendment will not have a significant impact on the environment. The Water Board further finds, based on consideration of the record as a whole, that there is no potential for adverse effect, either individually or cumulatively, on wildlife as a result of the proposed Basin Plan Amendment.

16. The Water Board has also considered the environmental analysis in the Staff Report and the Environmental Checklist of the reasonably foreseeable methods of the compliance with the Basin Plan Amendment, including economics.

17. The Water Board has carefully considered all comments and testimony received, including responses thereto, on the Basin Plan Amendment, as well as all of the evidence in the administrative record.

18. The Basin Plan Amendment must be submitted for review and approval by the State Water Board, the OAL, and U.S. EPA. Once approved by the State Water Board, the amendment is submitted to OAL and U.S. EPA. The Basin Plan Amendment will become effective upon approval by OAL and U.S. EPA.

NOW, THEREFORE BE IT RESOLVED THAT:

1. The Water Board adopts the Basin Plan Amendment as set forth in Exhibit A hereto.
2. The Executive Officer is directed to forward copies of the Basin Plan Amendment to the State Water Board in accordance with the requirement of CWC Section 13245.
3. The Water Board requests that the State Water Board approve the Basin Plan Amendment in accordance with the requirements of CWC Sections 13245 and 13246 and forward it to the OAL and U.S.EPA for approval.
4. If, during the approval process, Water Board staff, the State Water Board or OAL determines that minor, non-substantive corrections to the language of the Amendment are needed for clarity or consistency, the Executive Officer may make such changes, and shall inform the Water Board of any such changes.
5. Since the Basin Plan Amendment will involve no potential for adverse effect, either individually or cumulatively, on wildlife, the Executive Officer is directed to sign a CEQA Filing Fee No Effect Determination Form.

I, Bruce H. Wolfe, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of a Resolution adopted by the California Regional Water Quality Control Board, San Francisco Bay Region, on February 13, 2008.

BRUCE H. WOLFE
Executive Officer

Attachment

Exhibit A – Basin Plan Amendment to Amend the Water Quality Control Plan for the San Francisco Bay Region to Establish a Total Maximum Daily Load and Implementation Plan for PCBs in the San Francisco Bay.

Exhibit A

Basin Plan Amendment

Add the following language to Chapter 7, Water Quality Attainment Strategies including Total Maximum Daily Loads, of the Basin Plan:

San Francisco Bay Polychlorinated Biphenyls TMDL

The following sections establish the TMDL for total polychlorinated biphenyls including dioxin-like PCBs congeners (hereinafter referred to as PCBs) for the San Francisco Bay. The associated numeric target, allocations, and implementation plan are designed to ensure attainment of beneficial uses and water quality objectives for the San Francisco Bay.

Problem Statement

All segments of the San Francisco Bay have been identified as impaired due to elevated levels of PCBs in sport fish. Neither the narrative water quality objective, which states that controllable water quality factors shall not cause a detrimental increase in toxic substances found in bottom sediments or aquatic life, nor the numeric water quality objective of 0.00017 µg/L total PCBs in water is attained in the San Francisco Bay. The existing beneficial use ~~s~~ for commercial and sport fishing is not fully supported.

This TMDL addresses impairment of San Francisco Bay segments by PCBs. In the context of this TMDL, "San Francisco Bay" refers to all of the following water bodies:

- Sacramento/San Joaquin Delta (within Region 2)
- Suisun Bay
- Carquinez Strait
- San Pablo Bay
- Richardson Bay
- San Francisco Bay, Central
- San Francisco Bay, Lower (including)
    - Central Basin, San Francisco
    - Mission Creek
    - Oakland Inner Harbor (Fruitvale site)
    - Oakland Inner Harbor (Pacific Dry-Dock Yard 1 site) San Francisco Bay, South

This TMDL is intended to achieve protection of the commercial and sport fishing beneficial use and to the extent that other beneficial uses are affected by PCBs, the TMDL will also ensure protection of other beneficial uses, specifically, preservation of rare and endangered species, estuarine habitat and wildlife habitat.

Numeric Target

The numeric target (also referred to as the TMDL target) to protect both human health and wildlife is an average fish issue concentration of 10 micrograms total PCBs per kilogram of typically consumed fish, on a wet weight basis (10 µg/kg wet weight). Attainment of the total PCBs fish tissue numeric target will also protect human health and wildlife for dioxin-like PCBs.

Attainment of the fish tissue target for PCBs in San Francisco Bay will be initially evaluated by comparing the average total PCBs concentrations in the edible portion of two fish species, white croaker (size class, 20 to 30 centimeters in length) and shiner surfperch (size class, 10 to 15 centimeters in length) to the target. Comparison of the fish target against these two species of fish is considered to be protective and provides a margin of safety for the TMDL, because PCBs concentrations in these species are the highest of the fish species measured and sport recreational fishers likely consume a variety of fish species, including those species with lower PCBs concentrations. As part of the adaptive implementation of this TMDL, the Water Board will require the collection of additional information regarding recreational and subsistence fishers' patterns of consumption and evaluate if fish species other than white croaker and shiner surfperch should be considered to evaluate attainment of the target.

The number of fish samples collected to determine compliance with the target will be based on guidance described in USEPA's Guidance for Assessing Chemical Contaminant Data for Use in Fish Advisories (EPA 823-B-00-007) and on the statistical power needed to demonstrate trends in total PCBs concentration over time.

Sources

Sources of PCBs to fish and the water column of San Francisco Bay fall into two categories: (1) external sources including atmospheric deposition, Central Valley inflow, municipal and industrial wastewater discharges, and urban and non-urban stormwater runoff; and (2) internal sources, including movement or release of PCBs already in San Francisco Bay sediments, specifically, dredging and in-Bay disposal of dredged sediment, erosion of bay bottom sediment containing PCBs (bed erosion), and in-Bay contaminated sediment sites. These sources and estimates of associated loads are shown in Table A-1. Decreases of PCBs in San Francisco Bay occur via out-of-Bay dredge material disposal, natural attenuation, and outflow through the Golden Gate.

Table A- 1 PCBs Sources and Current Loads to San Francisco Bay

Source Category	PCBs Loads
	Kilograms per year
External	
Direct Atmospheric Deposition	Net Loss
Central Valley Watershed	11
Municipal Wastewater Dischargers	2.3
Industrial Wastewater Dischargers	0.035

Urban and Non Urban-Stormwater Runoff	20
Total	***33[a]***
Internal	
Sediment Dredging and Disposal	Net Loss
Bed Erosion	Not Quantified
In-Bay Contaminated Sediment	Not Quantified

a) Total differs from column sum due to rounding

Total Maximum Daily Load

The TMDL for PCBs in San Francisco Bay is 10 kg/year. Calculation of the TMDL is based on two models: a food-web PCBs bioaccumulation model and a long-term fate mass balance model. The model results predict that attainment of the numeric target will occur when the total PCBs concentration in surface sediments in the Bay declines to one µg/kg, which will be achieved when loads from external sources are reduced to 10 kg/year.

Load and Wasteload Allocations

Load allocations are presented in Table A-2 for source categories.

Individual wasteload allocations for municipal wastewater dischargers and industrial wastewater dischargers are presented in Table A-3 and Table A-4. Individual wasteload allocations for stormwater runoff to county-based watersheds are presented in Table A-5.

Table A- 2 Load and Wasteload Allocations

Source Category	Allocations
	Kilograms per year
External	
Direct Atmospheric Deposition	0 [a]
Central Valley Watershed	5
Municipal Wastewater Dischargers	2
Industrial Wastewater Dischargers	0.035
Stormwater Runoff	2
Stormwater Runoff Treatment by Municipal Wastewater Dischargers	1
Total	***10[b]***

a) Zero allocation reflects overall net loss to the atmosphere

b) Total differs from column sum due to rounding

Table A - 3 Individual Wasteload Allocations For Municipal Wastewater Dischargers

Permitted Entity	NPDES Permit	Allocations
		kilograms per year
American Canyon, City of	CA0038768	0.002
Benicia, City of	CA0038091	0.009
Burlingame, City of	CA0037788	0.01
Calistoga, City of	CA0037966	0.002
Central Contra Costa Sanitary District	CA0037648	0.1
Central Marin Sanitation Agency	CA0038628	0.04
Delta Diablo Sanitation District	CA0038547	0.04
East Bay Dischargers Authority	CA0037869	0.3
Dublin-San Ramon Services District (CA0037613)		
Hayward Shoreline Marsh (CA0037702)		
Livermore, City of (CA0038008)		
Union Sanitary District, Wet Weather (CA0038733)		
East Bay Municipal Utilities District	CA0037702	0.3
East Brother Light Station	CA0038806	0.00030
Fairfield-Suisun Sewer District	CA0038024	0.05
Las Gallinas Valley Sanitary District	CA0037851	0.01
Marin County Sanitary District, Paradise Cove	CA0037427	0.00003
Marin County Sanitary District, Tiburon	CA0037753	0.002
Millbrae, City of	CA0037532	0.007
Mt. View Sanitary District	CA0037770	0.007
Napa Sanitation District	CA0037575	0.04
Novato Sanitary District	CA0037958	0.02
Palo Alto, City of	CA0037834	0.09
Petaluma, City of	CA0037810	0.02
Pinole, City of	CA0037796	0.009
Contra Costa County, Port Costa Wastewater Treatment Plant	CA0037885	0.0001
Rodeo Sanitary District	CA0037826	0.002
Saint Helena, City of	CA0038016	0.001
San Francisco, City and County of, San Francisco International Airport WQCP	CA0038318	0.002
San Francisco, City and County of, Southeast Plant	CA0037664	0.3
San Jose/Santa Clara WPCP	CA0037842	0.4
San Mateo, City of	CA0037541	0.04
Sausalito-Marin City Sanitary District	CA0038067	0.005
Seafirth Estates	CA0038893	0.00001
Sewerage Agency of Southern Marin	CA0037711	0.01
Sonoma Valley County Sanitary District	CA0037800	0.01
South Bayside System Authority	CA0038369	0.06
South San Francisco/San Bruno WQCP	CA0038130	0.03
Sunnyvale, City of	CA0037621	0.05
US Naval Support Activity, Treasure Island WWTP	CA0110116	0.002
Vallejo Sanitation & Flood Control District	CA0037699	0.05
West County Agency, Combined Outfall	CA0038539	0.05
Yountville, Town of	CA0038121	0.001
Total		***2[a]***

a) Total differs from column sum due to rounding

Table A - 4 Individual Wasteload Allocations for Industrial Wastewater Dischargers

Permitted Entity	NPDES Permit	Allocations[a]
		kilograms per year
C&H Sugar and Crockett Community Services District.	CA0005240	0.00006
Chevron Products Company	CA0005134	0.003
ConocoPhillips	CA0005053	0.0006
Crockett Cogeneration LP, and Pacific Crockett Energy, Inc.	CA0029904	0.0006
General Chemical	CA0004979	0.0009
GWF Power Systems, Site I	CA0029106	0.0001
GWF Power Systems, Site V	CA0029122	0.0001
Hanson Aggregates, Amador Street	CA0030139	0.00003
Hanson Aggregates, Olin Jones Dredge Spoils Disposal	CA0028321	0.00003
Hanson Aggregates, Tidewater Ave., Oakland	CA0030147	0.00003
Morton Salt	CA0005185	0.00008
Pacific Gas and Electric, East Shell Pond	CA0030082	0.00003
Rhodia, Inc.	CA0006165	0.0003
San Francisco, City and Co., SF International Airport Industrial WTP	CA0028070	0.002
Shell Oil Products US and Equilon Enterprises LLC	CA0005789	0.002
Mirant Delta LLC, Pittsburg Power Plant	CA0004880	0.0008
Mirant Potrero LLC, Potrero Power Plant	CA0005657	0.0003
Tesoro Refining and Marketing Company	CA0004961	0.002
The Dow Chemical Company	CA0004910	0.0006
USS-Posco	CA0005002	0.02
Valero Refining Company	CA0005550	0.0007
Total		***0.035[b]***

a) Wasteload allocations for industrial wastewater dischargers do not include mass from once-through cooling water. The Water Board will apply intake credits to once-through cooling water as allowed by law.
b) Total differs from column sum due to rounding

Table A- 5 County-Based Watershed Wasteload Allocations for Stormwater Runoff

County[b]	Allocations[a] kilograms per year
Alameda	0.5
Contra Costa	0.3
Marin	0.1
Napa	0.05
San Francisco[c]	0.2
San Mateo	0.2
Santa Clara	0.5
Solano	0.1
Sonoma	0.05
Total	***2***

[a] Allocations implicitly include all current and future permitted discharges within the geographic boundaries of municipalities and unincorporated areas within the County. Examples of discharges include but are not limited to California Department of Transportation (Caltrans) roadways and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.

[b] Includes unincorporated areas and all municipalities in the county that drain to the Bay and are part of the San Francisco Bay Region.

[c] Does not account for treatment provided by San Francisco's combined sewer system. The treatment provided by the City and County of San Francisco's Southeast Plant and Northpoint Wet Weather Facility (NPDES permit CA0037664) will be credited toward meeting the allocation and load reduction.

Implementation Plan

The implementation plan includes three general implementation categories: control of external loadings of PCBs to the Bay, control of internal sources of PCBs within the Bay, and actions to manage risks to Bay fish consumers. In addition, the plan includes monitoring to measure attainment of the numeric target and load allocations, and measuring implementation progress. The plan will be implemented in phases via an adaptive implementation strategy founded on requiring actions in each category based on the current state of knowledge of PCBs sources and control measures, while also conducting studies to improve our understanding of PCBs sources, control options, and fate in the environment.

External Sources

This section, organized by source categories, specifies actions required to achieve allocations and implement the TMDL.

Central Valley Watershed

Sediments entering the Bay from the Central Valley have lower concentrations of PCBs than in-Bay sediment. Major mass loading events that occur during episodic high flow conditions generally flow directly out of the Bay through the Golden Gate. It is anticipated that the Central Valley allocation will be attained through natural attenuation.

Municipal and Industrial Wastewater Dischargers

Wasteload allocations shall be implemented through NPDES permits that require implementation of best management practices to maintain optimum treatment performance for solids removal and the identification and management of controllable sources. NPDES permits shall include effluent limits based on current performance and a requirement for quantification of PCBs loads to the Bay in order to determine attainment of the wasteload allocations. Compliance with effluent limits shall be determined using a Title 40, Code of Federal Regulations, Part 136 analytical method. In addition, municipal and industrial wastewater dischargers will be required to support actions to reduce the health risks of people who eat PCBs-contaminated, San Francisco Bay fish and to conduct or cause to be conducted monitoring, and studies to fill critical data needs identified in the adaptive implementation section.

It is the Water Board's intent to implement individual wasteload allocations via numeric water quality-based effluent limitations for PCBs in NPDES permits. These limits shall represent individual dischargers' PCBs loads, consistent with the underlying assumptions and requirements of the wasteload allocations. In the absence of actual discharge performance data sufficient to calculate such limits, the Water Board will apply appropriate uncertainty factors to the individual wasteload allocations.

Dischargers shall also be required to conduct sufficient monitoring of their effluent, which accounts for discharge variability and blended effluent, to enable calculation of current PCBs loading. These requirements will be implemented via NPDES permits or the Water Board's authority under Section 13267 of the California Water Code, such that monitoring begins no later than January 2009 and is completed in a timely manner.

Stormwater Runoff

Stormwater runoff wasteload allocations shall be achieved within 20 years and shall be implemented through the NPDES stormwater permits issued to stormwater runoff management agencies and the California Department of Transportation (Caltrans). The urban stormwater runoff wasteload allocations implicitly include all current and future permitted discharges, not otherwise addressed by another allocation, and unpermitted discharges within the geographic boundaries of stormwater runoff management agencies including, but not limited to, Caltrans roadway and non-roadway facilities and rights-of-way, atmospheric deposition, public facilities, properties proximate to stream banks, industrial facilities, and construction sites.

Requirements in each NPDES permit issued or reissued, shall be based on an updated assessment of best management practices and control measures intended to reduce PCBs in urban stormwater runoff. Control measures implemented by stormwater runoff management agencies and other entities (except construction and industrial sites) shall reduce PCBs in stormwater runoff to the maximum extent practicable. Control measures for construction and industrial sites shall reduce discharges based on best available technology economically achievable. All permits shall remain consistent with Section 4.8 - Stormwater Discharges.

In the first five-year permit term, stormwater permittees will be required to implement control measures on a pilot scale to determine their effectiveness and technical feasibility. In the second permit term, stormwater permittees will be required to implement effective control measures, that will not cause significant adverse environmental impacts, in strategic locations, and to develop a plan to fully implement control measures that will result in attainment of allocations, including an analysis of costs, efficiency of control measures and an identification of any significant environmental impacts. Subsequent permits will include requirements and a schedule to implement technically feasible, effective and cost efficient control measures to attain allocations. If, as a consequence, allocations cannot be attained, the Water Board will take action to review and revise the allocations and these implementation requirements as part of adaptive implementation.

In addition, stormwater permittees will be required to develop and implement a monitoring system to quantify PCBs urban stormwater runoff loads and the load reductions achieved through treatment, source control and other actions; support actions to reduce the health risks of people who consume PCBs-contaminated San Francisco Bay fish; and conduct or cause to be conducted monitoring, and studies to fill critical data needs identified in the adaptive implementation section.

Stormwater runoff management agencies have a responsibility to oversee various discharges within the agencies' geographic boundaries. However, if it is determined that a source is substantially contributing to PCBs loads to the Bay or is outside the jurisdiction or authority of an agency the Water Board will consider a request from an stormwater runoff management agency which may include an allocation, load reduction, and/or other regulatory requirements for the source in question.

Urban Stormwater Runoff Treatment by Municipal Wastewater Dischargers

Routing of urban stormwater runoff through municipal wastewater treatment facilities may be an efficient means of reducing PCBs, and other particle-associated contaminant loads to the Bay. This load allocation shall be implemented through a permit. Within five years of adoption of this TMDL, the Water Board will consider issuance of a permit under which municipal wastewater dischargers can apply for a portion of this reserved allocation.

Internal Sources

In-Bay PCB-Contaminated Sites

A number of former industrial and military sites adjacent to PCBs-enriched sediment are found throughout the Bay. This TMDL does not require any specific party to implement new actions for in-Bay PCB-contaminated sites. However, cleanup of these sites is a Water Board priority and many cleanups are underway. The Water Board will maintain an inventory of contaminated sites and continue to set priorities for investigating and remediating the sites. The existing list of in-Bay PCB-contaminated sites referred to in this TMDL is based on data collected under the Bay Protection Toxic Cleanup Program, which identified sites with total PCBs in sediment that exceed 180 µg/kg. This TMDL does not set a cleanup level for total PCBs in

sediment. The fish tissue target of 10 µg/kg and the sediment goal of one ug/kg are not cleanup standards, nor should they be considered appropriate, or relevant, and applicable requirements (ARARs) or a "to-be-considered" ARAR under the National Contingency Plan, 40 CFR Part 300 et. Seq. or the 1986 Superfund Amendments and Reauthorization Act. An analysis of the feasibility, technical practicability, and potential environmental impacts of individual clean-up actions is currently required prior to conducting cleanup of contaminated in-Bay sediment overseen by the Water Board and the Department of Toxic Substances Control and will continue to be required, not withstanding this TMDL. The Water Board has the authority to approve, disapprove or condition these projects to minimize adverse environmental impacts while achieving the goals of environmental cleanup.

The Water Board will coordinate cleanup actions with the U.S. EPA and the Department of Toxic Substances Control, and advise them that the fish tissue target and sediment goal do not constitute cleanup standards for ARARs. The Water Board will issue cleanup orders as necessary. The Water Board will require responsible parties for each specific Bay margin contaminated site to:

1. Estimate the pre-cleanup and post-cleanup vertical and lateral extent of PCBs in Bay sediments;
2. Estimate the pre-cleanup and post-cleanup mass of PCBs in Bay sediments;
3. Quantify rate(s) of sediment accretion, erosion or natural attenuation;
4. Implement on-land source control measures, if necessary, to ensure that on-land sources of PCBs do not further contaminate in-Bay sediments;
5. Evaluate post-cleanup, the residual risks to humans and wildlife;
6. Support actions to reduce the health risks of people who consume PCBs-contaminated San Francisco Bay fish;
7. Conduct or cause to be conducted studies to fill critical data needs identified in the Adaptive Implementation section.

These requirements shall be incorporated into relevant site investigation plans within five years of the effective date of this TMDL, and the actions shall be fully implemented within ten years of the effective date of this TMDL or as agreed to in the individual site investigation plan.

Navigational Dredging

The PCBs concentration in dredged material disposed of in the Bay shall not exceed the 99th percentile PCBs concentration of the previous 10 years of Bay sediment samples collected through the RMP (excluding stations outside the Bay like the Sacramento River, San Joaquin River, Guadalupe River and Standish Dam stations). Prior to disposal, the material shall be sampled and analyzed according to the procedures outlined in the 2001 U.S. Army Corps of Engineers document "Guidelines for Implementing the Inland Testing Manual in the San Francisco Bay Region." All in-Bay disposal of dredged material shall comply with Section 4.20, entitled Dredging and Disposal of Dredged Sediment, including the Long Term Management Strategy. Additionally, dredged material dischargers will be required to conduct or cause to be

conducted studies to fill critical data needs identified in the Adaptive Implementation section.

Risk Management

Load reductions and attainment of the numeric target to support fishing in the Bay as a beneficial use will take time to achieve. However, there are actions that should be undertaken prior to achievement of the numeric fish tissue target to help manage the risk to consumers of PCBs-contaminated fish. The Water Board will work with the California Office of Environmental Health Hazard Assessment, the California Department of Toxic Substances Control, the California Department of Public Health, dischargers, and interested parties to pursue risk management strategies. The risk management activities will include the following:

- Investigating and implementing actions to address the public health impacts of PCBs in San Francisco Bay/Delta fish, including activities that reduce the actual and potential exposure of, and mitigate health impacts to, people and communities most likely to be consuming PCB-contaminated fish from San Francisco Bay, such as recreational and subsistence fishers and their families;
- Providing multilingual fish-consumption advice to the public to help reduce PCBs exposure through community outreach, broadcast and print media, and signs posted at popular fishing locations;
- Regularly informing the public about monitoring data and findings regarding hazards of eating PCB-contaminated fish; and
- Conducting special studies needed to support health risk assessment and risk communication, including the collection of additional information regarding recreational and subsistence fishers' patterns of consumption.

Critical Data Needs

Additional data and other information will be needed to assess both the progress toward attainment of the fish tissue target and to evaluate the need for modifications to the implementation plan, TMDL, and/or allocations. Dischargers will be required to conduct or cause to be conducted the following studies to fill critical data needs.

- PCBs mass budget modeling and food web model improvements – Model refinements to improve our ability to predict recovery rates of the Bay from impairment by PCBs, to help strategically focus implementation actions on those actions with the most potential for success, and to help better our understanding of the role in-Bay PCBs-contaminated sites play in the Bay's recovery.

- Rate of natural attenuation of PCBs in the Bay environments – A better understanding of local rates of natural attenuation in order to predict with more certainty the recovery time of the Bay.

Monitoring

Monitoring to demonstrate progress toward attainment of the TMDL target shall be conducted by maintaining discharger-funded RMP monitoring of PCBs in San

Francisco Bay fish, sediments, and water at a spatial scale and frequency to track trends in the decline of PCBs in the Bay. Monitoring of load allocations to demonstrate progress towards attainment shall be conducted by municipal and industrial wastewater dischargers and stormwater permittees as discussed in external sources above.

Continued regular monitoring of PCB loads from the Central Valley and other tributaries to the Bay shall be conducted by maintaining discharger-funded RMP monitoring in order to provide information on the long term decline of PCBs to the Bay and to confirm the assumption that Central Valley loads are being reduced due to natural attenuation. Monitoring of loads allocated to other sources will be considered as part of the RMP special studies.

Adaptive Implementation

Adaptive implementation entails taking actions commensurate with the existing, available information, reviewing new information as it becomes available, and modifying actions as necessary based on the new information. Taking action allows progress to occur while more and better information is collected and the effectiveness of current actions is evaluated. Accordingly, this TMDL will be implemented in phases starting with actions described in each source category, risk management, monitoring, and critical data needs section above with subsequent modifications and phases based on improved knowledge of PCBs sources, control measures, and fate in the environment,

The Water Board will adapt the TMDL and implementation plan to incorporate new and relevant scientific information such that effective and efficient measures can be taken to achieve the allocations and numeric fish tissue target. The Water Board staff will present an annual progress report to the Water Board on implementation of the TMDL that includes evaluation of new and relevant information that becomes available through implementation actions, monitoring, special studies, and the scientific literature. Within ten years of the effective date of the TMDL, Water Board will consider a Basin Plan amendment that will reflect and incorporate the data and information that is generated in the intervening years. The Water Board will consider amending the PCBs TMDL and implementation plan as necessary to ensure attainment of water quality standards in a timely manner while considering the financial and environmental consequences of new control measures.

In particular, achievement of the allocations for stormwater runoff, which is projected to take 20 years, will be challenging. Consequently, the Water Board will consider modifying the schedule for achievement of the load allocations for stormwater runoff provided that dischargers have complied with all applicable permit requirements and accomplished all of the following:

- A diligent effort has been made to quantify PCBs loads and the sources of PCBs in the discharge;
- Documentation has been prepared that demonstrates that all technically and economically feasible and cost-effective control measures recognized by the

Water Board have been fully implemented, and evaluates and quantifies the PCBs load reduction of such measures;

- A demonstration has been made that achievement of the allocation will require more than the remaining 10 years originally envisioned; and
- A plan has been prepared that includes a schedule for evaluating the effectiveness and feasibility of additional control measures and implementing additional controls as appropriate.

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STATE OF CALIFORNIA

STATE WATER RESOURCES CONTROL BOARD

ORDER WQ 2015-0075

In the Matter of Review of

Order No. R4-2012-0175, NPDES Permit No. CAS004001

WASTE DISCHARGE REQUIREMENTS FOR MUNICIPAL SEPARATE STORM SEWER SYSTEM (MS4) DISCHARGES WITHIN THE COASTAL WATERSHEDS OF LOS ANGELES COUNTY, EXCEPT THOSE DISCHARGES ORIGINATING FROM THE CITY OF LONG BEACH MS4

Issued by the
California Regional Water Quality Control Board,
Los Angeles Region

SWRCB/OCC FILES A-2236 (a)-(kk)

BY THE BOARD:

In this order, the State Water Resources Control Board (State Water Board) reviews Order No. R4-2012-0175 (NPDES Permit No. CAS004001) adopted by the Los Angeles Regional Water Quality Control Board (Los Angeles Water Board) on November 8, 2012. Order No. R4-2012-0175 regulates discharges of storm water and non-storm water from the municipal separate storm sewer systems (MS4s) located within the coastal watersheds of Los Angeles County, with the exception of the City of Long Beach MS4, and is hereinafter referred to as the "Los Angeles MS4 Order" or the "Order." We received 37 petitions challenging various provisions of the Los Angeles MS4 Order. For the reasons discussed herein, we generally uphold the Los Angeles MS4 Order, but with a number of revisions to the findings and provisions in response to issues raised in the petitions and as a result of our own review of the Order.

I. BACKGROUND

The Los Angeles MS4 Order regulates discharges from the MS4s operated by the Los Angeles County Flood Control District, Los Angeles County, and 84 municipal permittees (Permittees) in a drainage area that encompasses more than 3,000 square miles and multiple watersheds. The Order was issued by the Los Angeles Water Board in

accordance with section 402(p)(3)(B) of the Clean Water Act[1] and sections 13263 and 13377 of the Porter-Cologne Water Quality Control Act (Porter-Cologne Act),[2] as a National Pollutant Discharge Elimination System (NPDES) permit to control storm water and non-storm water discharges that enter the area's water bodies from the storm sewer systems owned or operated by the multiple governmental entities named in the Order. The Los Angeles MS4 Order superseded Los Angeles Water Board Order No. 01-182 (2001 Los Angeles MS4 Order), and is the fourth iteration of the NPDES permit for MS4 discharges in the relevant area.

The Los Angeles MS4 Order incorporates most of the pre-existing requirements of the 2001 Los Angeles MS4 Order, including the water quality-based requirement to not cause or contribute to exceedances of water quality standards in the receiving water. The Los Angeles MS4 Order also requires Permittees to comply with new water quality-based requirements to implement 33 watershed-based total maximum daily loads (TMDLs) for the region. The Order links both of these water quality-based requirements to the programmatic elements of the Order by allowing Permittees to comply with the water quality-based requirements, in part, by developing and implementing a watershed management program (WMP) or enhanced watershed management program (EWMP), as more specifically defined in the Order.

Following adoption of the Los Angeles MS4 Order, we received 37 timely petitions challenging various provisions of the Order and, in particular, the provisions implementing TMDLs and integrating water quality-based requirements and watershed-based program implementation. Several petitioners asked that their petitions be held in abeyance;[3] however, due to the number of active petitions also seeking review, we declined to hold those petitions in abeyance at that time.[4] Five petitioners additionally requested that we partially stay the Los Angeles MS4 Order. Following review, the Executive Director of the State Water Board denied the stay requests for failure to comply with the prerequisites for a stay as specified in California Code of Regulations, title 23, section 2053.

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[1] 33 U.S.C. § 1342(p)(3)(B).

[2] Wat. Code, §§ 13263, 13377.

[3] See Cal. Code Regs., tit. 23, § 2050.5, subd. (d).

[4] By letter dated January 30, 2013, we provided an opportunity for petitioners to submit an explanation for why a petition should be held in abeyance notwithstanding the existence of the active petitions. In response, two petitioners, City of Signal Hill and the City of Claremont, argued that their petitions raised unique issues not common to the remaining petitions and therefor appropriate for abeyance. We thereafter denied their requests on July 29, 2013, finding that the unique issues could nevertheless be resolved concurrently with the issues in the other petitions. On October 9, 2013, the City of Claremont withdrew two of the claims in its petition.

We deemed the petitions complete by letter dated July 8, 2013, and, as permitted under our regulations,[5] consolidated the petitions for review.

An issue front and center in the petitions is the appropriateness of the approach of the Los Angeles MS4 Order in addressing what we generally refer to as "receiving water limitations." Receiving water limitations in MS4 permits are requirements that specify that storm water and non-storm water discharges must not cause or contribute to exceedances of water quality standards in the waters of the United States that receive those discharges. In precedential State Water Board Order WQ 99-05 (*Environmental Health Coalition*), we directed that all MS4 permits contain specific language that explains how the receiving water limitations will be implemented. (For clarity, we refer to MS4 permit language that relates to implementation of the permit's receiving water limitations as "receiving water limitations provisions.") We held a workshop on November 20, 2012, concerning receiving water limitations in MS4 permits. The purpose of the workshop was to receive public comment on an issue paper discussing several alternatives to the receiving water limitations provisions currently included in MS4 permits as directed by Order WQ 99-05 (Receiving Water Limitations Issue Paper).[6]

Because the Los Angeles MS4 Order contains new provisions that authorize the Permittees to develop and implement WMP/EWMPs in lieu of requiring compliance with the receiving water limitations provisions, we view our review of the Order as an appropriate avenue for resolving some of the issues raised in our November 20, 2012 workshop. Through notice to all interested persons, we bifurcated the responses to the petitions and solicited two separate sets of responses: (1) Responses to address issues related to whether the WMP/EWMP alternatives contained in the Los Angeles MS4 Order are an appropriate approach to revising the receiving water limitations provisions in MS4 permits (August 15, 2013 Receiving Water Limitations Submissions); and (2) Responses to address all other issues raised in the petitions (October 15, 2013 Responses).[7] We held a workshop on October 8, 2013, to hear public comment on the first set of responses.

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[5] Cal. Code Regs., tit. 23, § 2054.

[6] Information on that workshop is available at <http://www.waterboards.ca.gov/water_issues/programs/stormwater/rwl.shtml> (as of Nov 18, 2014).

[7] We requested the bifurcated responses initially by letter dated July 15, 2013. Subsequent letters on July 29, 2013, and September 18, 2013, clarified the nature of the submissions and extended the submission deadline for the second response.

State Water Board regulations generally require final disposition on petitions within 270 days of the date a petition is deemed complete.[8] However, in this case, we required additional time to review the large number of issues raised in the petitions. When the State Water Board anticipates addressing a petition on the merits after the review period passes, it may indicate that it will review the matter on its own motion.[9] On April 1, 2014, we adopted Order WQ 2014-0056 taking up review of the issues in the petitions on our own motion.[10]

We now resolve the issues in the petitions with this order.

II. ISSUES AND FINDINGS

The 37 petitions raise over sixty contentions claiming deficiencies in the Los Angeles MS4 Order. This Order addresses the most significant contentions. To the extent petitioners raised issues that are not discussed in this Order, such issues are dismissed as not raising substantial issues appropriate for State Water Board review.[11]

Before proceeding to the merits of the petitions, we will resolve several procedural issues.

Requests to Take Official Notice or Supplement the Record with Additional Evidence

We received a number of requests to take official notice of documents not in the administrative record of the adoption of the Los Angeles MS4 Order by the Los Angeles Water Board (hereinafter Administrative Record)[12] and a number of requests to admit supplemental evidence not considered by the Los Angeles Water Board.[13] We reviewed the requests with

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[8] Cal. Code Regs., tit. 23, § 2050.5, subd. (b).

[9] See Wat. Code, § 13320, subd. (a); Cal. Code Regs., tit. 23, § 2050.5, subd. (c).

[10] To avoid premature litigation on the petition issues as a result of our review extending past the 270 day-regulatory review period, at our suggestion most of the petitioners asked that their petitions be placed in abeyance until adoption by the State Water Board of a final order. We granted those requests. Simultaneously with adopting this order, we are removing the petitions from abeyance and acting upon them.

[11] *People v. Barry* (1987) 194 Cal.App.3d 158, 175-177; *Johnson v. State Water Resources Control Bd.* (2004) 123 Cal.App.4th 1107, 1114; Cal. Code Regs., tit. 23, § 2052, subd. (a)(1).

[12] The Administrative Record was prepared by the Los Angeles Water Board and is available at <http://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/AdminRecordOrderNoR4_2012_0175/index.shtml> (as of Nov. 18, 2014).

[13] Several requests for official notice or to admit supplemental evidence were received concurrently with submission of the petitions, with the August 15, 2013 Receiving Water Limitations Submissions, and with the October 15, 2013 Responses. Additional requests for official notice were submitted concurrently with comments on first and revised public drafts of this order and were opposed by several parties. (Request for Official Notice, Natural Resources Defense Council, Los Angeles Waterkeeper, and Heal the Bay, Jan. 21, 2015; Request for Official Notice, Natural Resources Defense Council, Los Angeles Waterkeeper and Heal the Bay, June 2, 2015.) Although we have reviewed these additional requests for official notice, we have not granted the requests for the various reasons articulated in this section, in Section II.B.8, and in footnote 74.

consideration of whether they were appropriate for notice or admission based on the legal standards governing our proceedings[14] and whether the documents would materially aid in our review of the issues in the proceedings. We grant the requests with regard to documents 1-7 below, and additionally take official notice on our own motion of documents 8, 9, and 10:[15]

1. Order No. 2013-0001-DWQ, NPDES Permit for Storm Water Discharges from Small MS4s, adopted by State Water Board, February 5, 2013;[16]
2. Modified NPDES Permit No. DC0000022 for the MS4 for the District of Columbia issued by the United States Environmental Protection Agency (USEPA), November 9, 2012, and a responsiveness summary issued in support of its original adoption of the permit, October 7, 2011;[17]
3. Administrative Procedures Update Number 90-004 on Antidegradation Policy Implementation for NPDES Permitting, issued by the State Water Board, July 2, 1990;[18]
4. Chapter 7 of the NPDES Permit Writers' Manual, updated by USEPA, September 2010;[19]
5. Letter to the Water Management Administration, Maryland Department of the Environment, issued by USEPA, August 8, 2012;[20]

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[14] For official notice see Cal. Code Regs., tit. 23, § 648.2; Gov. Code, § 11515; Evid. Code, § 452. For admission of supplemental evidence see Cal. Code Regs., tit. 23, § 2050.6.

[15] We note that two documents for which we received requests for official notice are already in the administrative record: USEPA, Memorandum Setting Forth Revisions to the November 22, 2002 Memorandum Establishing Total Maximum Daily Load Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs (Nov. 12, 2010) (Administrative Record, section 10.II, RB-AR23962-23968); USEPA, Chapter 6 of the NPDES Permit Writers' Manual (updated Sept. 2010) (Administrative Record, section 10.IV, RB-AR24905-24932).

[16] County of Los Angeles October 15, 2013 Response, Att. C; also available at <http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/phsii2012_5th/order_final.pdf> (as of Nov. 18, 2014).

[17] Los Angeles Water Board Request for State Water Board to Take Official Notice of Or Accept as Supplemental Evidence Exhibit A through SS (Oct. 15, 2013) (Los Angeles Water Board Request for Official Notice), Exh.'s A, B; also available at <http://www.epa.gov/reg3wapd/pdf/pdf_npdes/stormwater/DCMS4/MS4FinalLimitedModDocument/FinalModifiedPermit_10-25-12.pdf> and <http://www.epa.gov/reg3wapd/pdf/pdf_npdes/stormwater/DCMS4/FinalPermit2011/DCMS4FINALResponsivenessSummary093011.pdf> (as of Nov. 18, 2014).

[18] Los Angeles Water Board Request for Official Notice, Exh.C; also available at <http://www.swrcb.ca.gov/water_issues/programs/npdes/docs/apu_90_004.pdf> (as of Nov.18, 2014).

[19] Chapter 7 of USEPA's NPDES Permit Writers' Manual, EPA-833-K-10-001, September 2010 (NPDES Permit Writers' Manual) was submitted as Exhibit C to Natural Resources Defense Council, Los Angeles Waterkeeper and Heal the Bay Request for Official Notice (Dec. 10, 2012) (Environmental Petitioners' Request for Official Notice). The chapter may additionally be accessed through links at <http://water.epa.gov/polwaste/npdes/basics/NPDES-Permit-Writers-Manual.cfm> (as of Nov.18, 2014).

6. Memorandum to the Water Management Division Directors, Regions I-X, and NPDES State Directors, issued by USEPA, 1989;[21]
7. "Guidance on Implementing the Antidegradation Provisions of 40 C.F.R. 131.12," issued by USEPA, Region 9, June 3, 1987;[22]
8. Order WQ 2014-0077-DWQ, amending NPDES Statewide Storm Water Permit for State of California Department of Transportation, Order 2012-0011-DWQ, adopted by State Water Board, May 20, 2014;[23]
9. Statement from USEPA soliciting comments on the USEPA Memorandum Setting forth Revisions to the November 22, 2002 Memorandum Establishing Total Maximum Daily Load Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs (November 12, 2010), issued March 17, 2011.[24]
10. Memorandum, "Revisions to the November 22, 2002 Memorandum 'Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs,'" issued by USEPA, November 26, 2014.[25]

In addition, we are incorporating the administrative record of the November 20, 2012 workshop on receiving water limitations, including the Receiving Water Limitations Issue Paper and comments by interested persons, into our record for the petitions on the Los Angeles MS4 Order.[26]

(continued from previous page)

[20] Environmental Petitioners' Request for Official Notice, Exh.B, available at <http://www.waterboards.ca.gov/public_notices/petitions/water_quality/docs/a2236/a2236m_rfon.pdf> (as of Nov. 18, 2014).

[21] Environmental Petitioners' Request for Official Notice, Exh.D; also available at <http://www.epa.gov/npdes/pubs/owm0231.pdf> (as of Nov. 18, 2014).

[22] Environmental Petitioners' Request for Official Notice, Exh.E; available at <http://www.waterboards.ca.gov/public_notices/petitions/water_quality/docs/a2236/a2236m_rfon.pdf> (as of Nov. 18, 2014).

[23] Available at <http://www.waterboards.ca.gov/board_decisions/adopted_orders/water_quality/2014/wqo2014_0077_dwq.pdf> (as of Nov. 18, 2014).

[24] Available at <http://water.epa.gov/polwaste/npdes/stormwater/upload/sw_tmdlwla_comments.pdf> (as of Nov. 18, 2014).

[25] Available at <http://water.epa.gov/polwaste/npdes/stormwater/upload/EPA_SW_TMDL_Memo.pdf> (as of March 30, 2015).

[26] The Receiving Water Limitations Issue Paper and comments and workshop presentations by interested person are available at <http://www.waterboards.ca.gov/water_issues/programs/stormwater/rwl.shtml>.

Among other requests, we are not granting the requests to take official notice of or supplement the Administrative Record with the notices of intent, workplans, draft programs, and other documents filed by Permittees toward development of WMPs/EWMPs and associated monitoring programs following adoption of the Los Angeles MS4 Order or comments submitted on those documents, or the conditional approvals of several of the programs. With regard to factual evidence regarding actions taken by Permittees to comply with the Los Angeles MS4 Order after it was adopted, we believe it appropriate to close the record with the adoption of the Los Angeles MS4 Order. However, we are keenly aware that the success of the Los Angeles MS4 Order in addressing water quality issues depends primarily on the careful and effective development and implementation of programs consistent with the requirements of the Order; we speak to that issue later in our discussion.

City of El Monte's Amended Petition

Petitioner City of El Monte (El Monte) timely filed a petition on December 10, 2012, challenging a number of provisions of the Los Angeles MS4 Order. Thereafter, on February 19, 2013, El Monte filed an amended petition, based on information it asserted was not available prior to the deadline for submission of the petition.

Water Code section 13320, subdivision (a) provides that a petition for review of a regional water quality control board (regional water board) action must be filed within 30 days of the regional water board's action.[27] The State Water Board interprets that requirement strictly and petitions filed more than 30 days from regional water board action are rejected as untimely. El Monte asserted that the two additional arguments raised in the amended petition were based on information that was not available prior to the deadline for submitting the petition and were therefore appropriate for State Water Board consideration.

Even if we were required by statute or regulation to accept amended petitions based on new information, here, El Monte's new arguments are not supported by information previously unavailable. First, El Monte argues that the Supreme Court's decision in *Los Angeles County Flood Control District v. Natural Resources Defense Council* (2013) 133 S.Ct. 710 invalidated certain provisions of the Los Angeles MS4 Order that require compliance with water quality standards and total maximum daily load requirements through receiving water monitoring. Contrary to El Monte's assertion, the decision by the Supreme Court did not invalidate any requirements of the Los Angeles MS4 Order and did not result in any changes to

[27] See also Cal. Code Regs., tit. 23, § 2050.

the Order. The Supreme Court decision, to the extent it applies to the legal issues before us in this matter, constitutes precedential case law and must be considered in our review of the Los Angeles MS4 Order, but it does not constitute new information that supports an amended petition.[28]

Second, El Monte argues that the Los Angeles Water Board failed to consider various provisions of the California Watershed Improvement Act of 2009[29] when it adopted the Los Angeles MS4 Order. To the extent El Monte believed that the California Watershed Improvement Act was relevant to adoption of the Los Angeles MS4 Order, El Monte had the opportunity to raise that issue in comments before the Los Angeles Water Board and in its timely petition to the State Water Board. Having failed to raise the issue before the Los Angeles Water Board and in its timely petition, El Monte cannot raise the issue in an amended petition.[30]

We reject El Monte's amended petition as untimely.

Environmental Petitioners' Motion to Strike

Petitioners Natural Resources Defense Council, Los Angeles Waterkeeper, and Heal the Bay (Environmental Petitioners), submitted a motion on November 11, 2013, requesting that the State Water Board strike sections of the October 15, 2013 Responses by six petitioners (Motion to Strike). The relevant sections respond to a collateral estoppel argument made by the Environmental Petitioners in their August 15, 2013 Receiving Water Limitations Submission to the State Water Board. Several parties asserted in their petitions that requiring compliance with water quality standards in MS4 permits violates federal law or conflicts with prior State Water Board precedent. The Environmental Petitioners responded in their August 15, 2013 Receiving Water Limitations Submission that these arguments were barred by collateral estoppel because the claims were settled in prior court cases challenging the 2001 Los Angeles MS4 Order. Six of the October 15, 2013 Responses, namely those by the Cities of

[28] We note that the State Water Board has the option of allowing additional briefing when there are material legal developments concerning issues raised in a petition, but we did not find such briefing would aid review of the petitions in this case.

[29] Wat. Code, § 16100 et seq.

[30] In addition to being untimely, El Monte's argument lacks merit. The California Watershed Improvement Act of 2009 grants authority to local government permittees regulated by an MS4 permit to develop and implement watershed improvement plans, but does not limit the authority of a regional water board to impose terms related to watershed management in an MS4 permit. Further, the terms of the WMPs/EWMPs are largely consistent with the watershed improvement plans authorized by the Act, so a permittee can comply with the Los Angeles MS4 Order while also using the authority provided by the California Watershed Improvement Act of 2009 if it so chooses.

Arcadia, Claremont, Covina, Duarte and Huntington Park, San Marino et al.,[31] and Sierra Madre, incorporated a response to the collateral estoppel argument.

We stated in a July 15, 2013 letter that"[i]nterested persons may not use the [October 15][32] deadline for responses on the remaining petition issues as an opportunity to respond to comments filed on the receiving water limitations approach." We clarified further in a July 29, 2013 letter: "[W]hen submitting subsequent responses to the petitions in accordance with the [October 15] deadline, petitioners and interested persons should not raise new issues related to the specific questions regarding the watershed management program/enhanced watershed management program or respond to any August 15, 2013, submissions; however petitioners and interested persons will not be precluded from responding to specific issues raised in the original petitions on grounds that the issues are related to the receiving water limitations language."

We find that the collateral estoppel responses by the six petitioners are disallowed by the direction we provided in our July 15 and July 29, 2013 letters. However, as will be apparent in our discussion in section II.A, we do not rely on the Environmental Petitioners' collateral estoppel argument in resolving the petitions. Our determination that portions of the October 15, 2013 Responses are disallowed is, therefore, immaterial to the resolution of the issues.[33]

Having resolved the procedural issues, we turn to the merits of the Petitions.

A. Implementation of the Iterative Process as Compliance with Receiving Water Limitations

The Los Angeles MS4 Order includes receiving water limitations provisions that are consistent with our direction in Order WQ 99-05 in Part V.A of the Los Angeles MS4 Order. Part V.A. provides, in part, as follows:

1. Discharges from the MS4 that cause or contribute to the violation of receiving water limitations are prohibited.

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[31] The cities of San Marino, Rancho Palos Verdes, South El Monte, Norwalk, Artesia, Torrance, Beverly Hills, Hidden Hills, Westlake Village, La Mirada, Vernon, Monrovia, Agoura Hills, Commerce, Downey, Inglewood, Culver City, and Redondo Beach submitted a joint October 15, 2013 Response.

[32] The July 15, 2013 letter set a deadline of September 20, 2013, which was subsequently extended to October 15, 2013.

[33] In a November 21, 2013 letter, we indicated that we would consider the Motion to Strike concurrently with drafting of this Order, but that we would not accept any additional submissions in this matter, including any responses to the Motion to Strike. City of San Marino objected to the letter and submitted an opposition to the Motion to Strike. Several petitioners submitted joinders in City of San Marino's motion. For the same reasons articulated above, we are not accepting these submissions; they would not affect our resolution of the issues.

2. Discharges from the MS4 of storm water, or non-storm water, for which a Permittee is responsible [footnote omitted], shall not cause or contribute to a condition of nuisance.

3. The Permittees shall comply with Parts V.A.1 and V.A.2 through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the storm water management program and its components and other requirements of this Order including any modifications. . . .[34]

The petitioners that are permittees (hereinafter referred to as "Permittee Petitioners")[35] argue that the above language either means, or should be read and/or clarified to mean, that good faith engagement in the requirements of Part V.A.3, traditionally referred to as the "iterative process," constitutes compliance with Parts V.A.1. and V.A.2. The position put forth by Permittee Petitioners is one we took up when we initiated a process to re-examine the receiving water limitations and iterative process in MS4 permits statewide with our Receiving Water Limitations Issue Paper and the November 20, 2012 workshop. We summarize the law and policy regarding Permittee Petitioners' position again here and ultimately disagree with Permittee Petitioners that implementation of the iterative process does or should constitute compliance with receiving water limitations.

The Clean Water Act generally requires NPDES permits to include technology-based effluent limitations and any more stringent limitations necessary to meet water quality standards.[36] In the context of NPDES permits for MS4s, however, the Clean Water Act does not explicitly reference the requirement to meet water quality standards. MS4 discharges must meet a technology-based standard of prohibiting non-storm water discharges and reducing pollutants in the discharge to the Maximum Extent Practicable (MEP) in all cases, but requiring strict compliance with water quality standards (e.g., by imposing numeric effluent limitations) is at the discretion of the permitting agency.[37] Specifically the Clean Water Act states as follows:

> Permits for discharges from municipal storm sewers –
>
> . . .
>
> (ii) shall include a requirement to effectively prohibit non-stormwater discharges into the storm sewers; and

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[34] Los Angeles MS4 Order, Part V.A, pp. 38-39.

[35] For ease of reference, where an argument is made by multiple Permittee Petitioners, even if not by all, we attribute that argument to Permittee Petitioners generally, and do not list which of the 37 Permittee Petitioners in fact make the argument. Where only one or two Permittee Petitioners make a particular argument, we have identified the specific Permittee Petitioner(s).

[36] 33 U.S.C. §§ 1311, 1342(a).

[37] 33 U.S.C. § 1342(p)(3)(B); *Defenders of Wildlife v. Browner* (9th Cir. 1999) 191 F.3d 1159.

> (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as . . . the State determines appropriate for the control of such pollutants.[38]

Thus, a permitting agency imposes requirements related to attainment of water quality standards where it determines that those provisions are "appropriate for the control of [relevant] pollutants" pursuant to the Clean Water Act municipal storm water provisions.

Under the Porter-Cologne Act, waste discharge requirements must implement applicable water quality control plans, which include the beneficial uses to be protected for a given water body and the water quality objectives reasonably required for that protection.[39] In this respect, the Porter-Cologne Act treats MS4 dischargers and other dischargers even-handedly and anticipates that all waste discharge requirements will implement the water quality control plans. However, when implementing requirements under the Porter-Cologne Act that are not compelled by federal law, the State Water Board and regional water boards (collectively, "water boards") have some flexibility to consider other factors, such as economics, when establishing the appropriate requirements.[40] Accordingly, since the State Water Board has discretion under federal law to determine whether to require strict compliance with the water quality standards of the water quality control plans for MS4 discharges, the State Water Board may also utilize the flexibility under the Porter-Cologne Act to decline to require strict compliance with water quality standards for MS4 discharges.

We have previously exercised the discretion we have under federal law in favor of requiring compliance with water quality standards, but have required less than strict compliance. We have directed, in precedential orders, that MS4 permits require discharges to be controlled so as not to cause or contribute to exceedances of water quality standards in receiving waters,[41] but have prescribed an iterative process whereby an exceedance of a water quality standard triggers a process of BMP improvements. That iterative process involves reporting of the violation, submission of a report describing proposed improvements to BMPs

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[38] 33 U.S.C. § 1342(p)(3)(B).

[39] Wat. Code, § 13263. The term "water quality standards" encompasses the beneficial uses of the water body and the water quality objectives (or "water quality criteria" under federal terminology) that must be met in the waters of the United States to protect beneficial uses. Water quality standards also include the federal and state antidegradation policy.

[40] Wat. Code, §§ 13241, 13263; *City of Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613.

[41] State Water Board Orders WQ 98-01 (*Environmental Health Coalition*), WQ 99-05 (*Environmental Health Coalition)*, WQ 2001-15 (*Building Industry Association of San Diego*).

expected to better meet water quality standards, and implementation of these new BMPs.[42] The current language of the existing receiving waters limitations provisions was actually developed by USEPA when it vetoed two regional water board MS4 permits that utilized a prior version of the State Water Board's receiving water limitations provisions.[43] In State Water Board Order WQ 99-05, we directed that all regional boards use USEPA's receiving water limitations provisions.

There has been significant confusion within the regulated MS4 community regarding the relationship between the receiving water limitations and the iterative process, in part because the water boards have commonly directed dischargers to achieve compliance with water quality standards by improving control measures through the iterative process. But the iterative process, as established in our precedential orders and as generally written into MS4 permits adopted by the water boards, does not provide a "safe harbor" to MS4 dischargers. When a discharger is shown to be causing or contributing to an exceedance of water quality standards, that discharger is in violation of the permit's receiving water limitations and potentially subject to enforcement by the water boards or through a citizen suit, regardless of whether or not the discharger is actively engaged in the iterative process.[44]

The position that the receiving water limitations are independent from the provisions that establish the iterative process has been judicially upheld on several occasions. The receiving water limitations provisions of the 2001 Los Angeles MS4 Order specifically have been litigated twice, and in both cases, the courts upheld the provisions and the Los Angeles Water Board's interpretation of the provisions. In a decision resolving a challenge to the 2001 Los Angeles MS4 Order, the Los Angeles County Superior Court stated: "[T]he Regional [Water] Board acted within its authority when it included [water quality standards compliance] in

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[42] State Water Board Order WQ 99-05, pp. 2-3; see also State Water Board Order WQ 2001-15, pp. 7-9. Additionally, consistent with federal law, we found it appropriate to require implementation of BMPs in lieu of numeric water quality-based effluent limitations to meet water quality standards. *See* State Water Board Orders WQ 91-03 (*Citizens for a Better Environment)*, WQ 91-04 (*Natural Resources Defense Council*), WQ 98-01, WQ 2001-15. This issue is discussed in greater detail in Section II.C. of this order.

[43] See State Water Board Orders WQ 99-05, WQ 2001-15.

[44] Several Permittee Petitioners have argued that the State Water Board's opinion in State Water Board Order WQ 2001-15 must be read to endorse a safe harbor in the iterative process. We disagree. Regardless, the State Water Board's position that the iterative process of the subject permit did not create a "safe harbor" from compliance with receiving water limitations was clearly established in subsequent litigation on that order. (See *Building Industry Ass'n of San Diego County v. State Water Resources Control Bd.* (Super. Ct. 2003, No. GIC780263), affd. *Building Industry Assn. of San Diego County v. State Water Resources Control Bd.* (2004) 124 Cal.App.4th 866.)

the Permit without a 'safe harbor,' whether or not compliance therewith requires efforts that exceed the 'MEP' standard."[45] The lack of a safe harbor in the iterative process of the 2001 Los Angeles MS4 Order was again acknowledged in 2011 and 2013, this time by the Ninth Circuit Court of Appeal. In these instances, the Ninth Circuit was considering a citizen suit brought by the Natural Resources Defense Council against the County of Los Angeles and the Los Angeles County Flood Control District for alleged violations of the receiving water limitations of that order. The Ninth Circuit held that, as the receiving water limitations of the 2001 Los Angeles MS4 Order (and accordingly as the precedential language in State Water Board Order WQ 99-05) was drafted, engagement in the iterative process does not excuse liability for violations of water quality standards.[46] The California Court of Appeal has come to the same conclusion in interpreting similar receiving water limitations provisions in MS4 Orders issued by the San Diego Regional Water Quality Control Board in 2001 and the Santa Ana Regional Water Quality Control Board in 2002.[47]

While we reiterate that the judicial rulings have been consistent with the water boards' intention and position regarding the relationship between the receiving water limitations and the iterative process, we acknowledge that some in the regulated community perceived the 2011 Ninth Circuit opinion in particular as a re-interpretation of that relationship. Our Receiving Water Limitations Issue Paper and subsequent workshop reflected our desire to re-examine the issue in response to concerns expressed by the regulated community in the aftermath of that ruling.

As stated above, both the Clean Water Act and the Porter-Cologne Act afford some discretion to not require strict compliance with water quality standards for MS4 discharges. In each of the discussed court cases above, the court's decision is based on the specific permit language; thus the cases do not address our authority with regard to requiring compliance with water quality standards in an MS4 permit as a threshold matter, and they do not require us to continue to exercise our discretion as we decided in State Water Board Order

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[45] *In re Los Angeles County Municipal Storm Water Permit Litigation* (L.A. Super. Ct., No. BS 080548, Mar. 24, 2005) Statement of Decision from Phase I Trial on Petitions for Writ of Mandate, pp. 4-5, 7. The decision was affirmed on appeal (*County of Los Angeles v. State Water Resources Control Board* (2006) 143 Cal.App.4th 985); however, this particular issue was not discussed in the court of appeal's decision.

[46] *Natural Resources Defense Council v. County of Los Angeles* (9th Cir. 2011) 673 F.3d. 880, rev'd on other grounds sub nom. *Los Angeles County Flood Control Dist. v. Natural Resources Defense Council* (2013) 133 S.Ct. 710, mod. by *Natural Resources Defense Council v. County of Los Angeles* (9th Cir. 2013) 725 F.3d 1194, cert. den. *Los Angeles County Flood Control Dist. v. Natural Resources Defense Council* (2014) 134 S.Ct. 2135.

[47] *Building Industry Assn. of San Diego County, supra*,124 Cal.App.4th 866; *City of Rancho Cucamonga v. Regional Water Quality Control Bd.* (2006) 135 Cal.App.4th 1377.

WQ 99-05. Although it would be inconsistent with USEPA's general practice of requiring compliance with water quality standards over time through an iterative process,[48] we may even have the flexibility to reverse[49] our own precedent regarding receiving water limitations and receiving water limitations provisions and make a policy determination that, going forward, we will either no longer require compliance with water quality standards in MS4 permits, or will deem good faith engagement in the iterative process to constitute such compliance.[50]

However, with this Order, we now decline to do either. As the storm water management programs of municipalities have matured, an increasing body of monitoring data indicates that many water quality standards are in fact not being met by many MS4s. The iterative process has been underutilized and ineffective to date in bringing MS4 discharges into compliance with water quality standards. Compliance with water quality standards is and should remain the ultimate goal of any MS4 permit. We reiterate and confirm our determination that provisions requiring compliance with receiving water limitations are "appropriate for the control of . . . pollutants" addressed in MS4 permits and that therefore, consistent with our authority under the Clean Water Act, we will continue to require compliance with receiving water limitations.[51]

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[48] See, e.g. Modified NPDES Permit No. DC0000022 for the MS4 for the District of Columbia, *supra*, fn. 17.

[49] Of course any change of direction would be subject to ordinary principles of administrative law. (See Code Civ. Proc., § 1094.5, subd. (b).)

[50] As such, it is not necessary to address the collateral estoppel arguments raised by the Environmental Petitioners and opposed by Permittee Petitioners. We agree that it is settled law that we have the discretion to require compliance with water quality standards in an MS4 permit under federal and state law. We also agree that it is settled law that the receiving water limitations provisions currently spelled out in our MS4 permits do not carve out a safe harbor in the iterative process. But the question for us is whether we should continue to exercise our discretion to utilize the same approach to receiving water limitations established under our prior precedent, or proceed in a new direction.

[51] Several Permittee Petitioners argued in comments submitted on the first draft of this order that, because we find that we have some discretion under Clean Water Act section 402(p)(3) to not require compliance with receiving water limitations, the Los Angeles Water Board's action in requiring such compliance -- and our action in affirming it -- is pursuant to state authority. (See, e.g., Cities of Arcadia, Claremont, and Covina, Comment Letter, Jan. 21, 2015.) The Permittee Petitioners argue that the action is therefore subject to evaluation in light of the factors set out in Water Code section 13263 and 13241 pursuant to *City of Burbank, supra*, 35 Cal.4th 613. Under *City of Burbank,* a regional water board must consider the factors specified in section 13241 when issuing waste discharge requirements under section 13263, subdivision (a), but only to the extent those waste discharge requirements exceed the requirements of the federal Clean Water Act. (35 Cal.4th at 627.) Nowhere in our discussion in this section do we mean to disavow either that the Los Angeles Water Board acted under federal authority to impose "such other provisions as . . .determine[d] appropriate for the control of . . . pollutants" in adopting the receiving water limitations provisions of the Los Angeles MS4 Order in the first instance or that we are acting under federal authority in upholding those provisions. (33 U.S.C. § 1342(p)(3)(B)(iii).) The receiving water limitations provisions do not exceed the requirements of federal law. We nevertheless also point out that the Los Angeles Water Board engaged in an analysis of the factors under section 13241 when adopting the Order. (See Los Angeles MS4 Order, Att. F, Fact Sheet, pp. F-139 to F-155.)

As we explained in 2001, "[u]rban runoff is causing and contributing to impacts on receiving waters throughout the state and impairing their beneficial uses."[52] More than a decade later, this is still true. By definition, many of our urban waterways will never attain water quality standards and fully realize their beneficial uses if municipal runoff is allowed to continue to cause or contribute to exceedances of water quality standards. Further, the efforts of other dischargers who are required to not cause or contribute to exceedances of water quality standards would be largely in vain if we did not regulate MS4 dischargers with a somewhat even hand.

Such an approach is additionally consistent with the Porter-Cologne Act's emphasis on water quality control plans as the cornerstone of water quality planning and regulation and the act's expectation that all waste discharge requirements will implement the water quality control plans. We believe that direct enforcement of water quality standards is necessary to protect water quality, at a minimum as a back-stop where dischargers fail to meet requirements of the Order designed to achieve progress toward meeting the standards. We will not reverse our precedential determination in State Water Board Order WQ 99-05 that established the receiving water limitations provisions for MS4 permits statewide and reiterate that we will continue to read those provisions consistent with how the courts have: engagement in the iterative process does not excuse exceedances of water quality standards. We accordingly also decline to direct any revisions to the receiving water limitations provisions of the Los Angeles MS4 Order, which are consistent with our precedential language.[53]

Yet, we are sympathetic to the assertions made by MS4 dischargers that the receiving water limitations provisions mandated by our Order WQ 99-05 may result in many years of permit noncompliance, because it may take years of technical efforts to achieve compliance with the receiving water limitations, especially for wet weather discharges.

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[52] State Water Board Order WQ 2001-15, p. 7.

[53] We disagree with Permittee Petitioners' argument that the receiving water limitations in Part V.A of the Los Angeles MS4 Order are confusing, unclear, or overbroad, because they prohibit causing or contributing to a violation of a receiving water limitation rather than a violation of water quality standards. The Los Angeles Water Board defines "receiving water" as "[a] 'water of the United States' in to which waste and/or pollutants are or may be discharged." (Los Angeles MS4 Order, Att. A., p. A-16.) The Los Angeles Water Board further defines "receiving water limitations" as "[a]ny applicable numeric or narrative water quality objective or criterion, or limitation to implement the applicable water quality objective or criterion, for the receiving water as contained in Chapter 3 or 7 of the Water Quality Control Plan for the Los Angeles Region (Basin Plan), water quality control plans or policies adopted by the State Water Board, or federal regulations, including but not limited to, 40 CFR §131.38." (*Ibid.*) Receiving water limitations are therefore the water quality standards, including water quality objectives and criteria, that apply to the receiving water as expressed in the water quality control plan for the region, statewide water quality control plans that specify objectives for water bodies in the region, State Water Board policies for water quality control, and federal regulations.

Accordingly, we believe that the MS4 permits should incorporate a well-defined, transparent, and finite alternative path to permit compliance that allows MS4 dischargers that are willing to pursue significant undertakings beyond the iterative process to be deemed in compliance with the receiving water limitations.

With the WMP/EWMP provisions of the Los Angeles MS4 Order, the Los Angeles Water Board is striving to allow one such alternative compliance path. As such, the fundamental issue for review before us in this matter is whether the Los Angeles MS4 Order's WMP/EWMP provisions constitute a legal and technically sound compliance alternative for achieving receiving water limitations. We discuss and resolve this issue in the next section.

B. WMP/EWMP as Alternative Compliance Options for Complying with Receiving Water Limitations

The WMP/EWMP provisions allow Permittees to choose an integrated and collaborative watershed-based approach to meeting the requirements of the Los Angeles MS4 Order, including the receiving water limitations. Permittees develop a plan, either collaboratively or individually, that addresses water quality priorities within a watershed. Permittees first prioritize water quality issues within each watershed. Permittees may use the WMP/EWMP to address water body-pollutant combinations for which a TMDL has been developed, giving highest priority to those with interim and final compliance deadlines within the permit term. Permittees may also address water body-pollutant combinations for which no TMDL has been developed, but where the water body is impaired or shows exceedances of the standards for the relevant pollutant from an MS4 source. Once prioritization is completed, Permittees assess the sources of the pollutants and select watershed strategies that are designed to eliminate non-storm water discharges to the MS4 that are a source of pollutants, that meet all applicable TMDL-derived interim and final water quality-based effluent limitations (WQBELs) and/or limitations to be met in the receiving water (referred to herein as "other TMDL-specific limitations")[54] pursuant to corresponding compliance schedules, and that ensure that discharges from the MS4 do not cause or contribute to exceedances of receiving water limitations. Except as described below for storm water retention projects, Permittees conduct a "reasonable assurance analysis" for each water body-pollutant combination incorporated into the

[54] Some of the TMDL limitations of the Los Angeles MS4 Order are expressed not as WQBELs but as standards to be met in the receiving water. The Los Angeles MS4 Order refers to these limitations as "receiving water limitations;" however, in order to avoid confusion with the general receiving water limitations in Part V.A., we will use the term "other TMDL-specific limitations." Accordingly, while the Los Angeles MS4 Order uses the term "receiving water limitations" to refer to both the receiving water limitations in part V.A and some of the TMDL-based requirements in Attachments L-R, when we use the term we refer only to the receiving water limitations in part V.A.

WMP/EWMP to demonstrate the ability of the program to meet those objectives. Permittees additionally implement an integrated monitoring and assessment program to determine progress, adapting strategies and measures as necessary.[55]

In addition to all the requirements above, for those Permittees that choose to develop and implement an EWMP, the EWMP provisions also require that Permittees collaborate on multi-benefit regional projects and, wherever feasible, retain all non-storm runoff, as well as all storm water runoff from the 85th percentile 24-hour storm event (hereinafter "storm water retention approach") for the drainage areas tributary to the projects.[56]

The primary controversy concerning the WMP/EWMP provisions of the Los Angeles MS4 Order is the manner in which they interact with the receiving water limitations and the WQBELs and other TMDL-specific limitations. Under certain conditions detailed in the Order, Permittees may be deemed in compliance with the receiving water limitations and the WQBELs and other TMDL-specific limitations by fully implementing the WMP/EWMP, rather than by demonstrating that the receiving water limitations and the WQBELs and other TMDL-specific limitations have actually been achieved. Specifically:

1. Permittees that develop and implement a WMP/EWMP and fully comply with all requirements and dates of achievement for the WMP/ EWMP as established in the Los Angeles MS4 Order, are deemed to be in compliance with the receiving water limitations in Part V.A for the water body-pollutant combinations addressed by the WMP/EWMP.[57]

2. Permittees fully in compliance with the requirements and dates of achievement of the WMP/EWMP are deemed in compliance with the *interim* WQBELs and other TMDL-specific limitations in Attachments L-R for the water body-pollutant combinations addressed by the WMP/EWMP.[58]

3. Permittees implementing an EWMP and utilizing the storm water retention approach in a drainage area tributary to the applicable water body are deemed in compliance with the *final* WQBELs and other TMDL-specific limitations in Attachments L-R for the water body-pollutant combinations addressed by the storm water retention approach.[59]

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[55] Los Angeles MS4 Order, Part VI.C., pp. 49-67.

[56] *Id.*, Part VI.C.1.g., pp. 48-49.

[57] *Id.*, Part VI.C.2.b., p. 52.

[58] *Id.*, Parts VI.C.3.a., p. 53, VI.E.2.d.i.4., pp. 143-44. The Los Angeles MS4 Order establishes separate requirements for Trash TMDLs and the WMP/EWMP are not a means of achieving compliance with the Trash TMDL provisions. (See Part VI.E.5, pp. 147-154.) References to TMDLs in this section exclude the Trash TMDLs.

[59] *Id.*, Part VI.E.2.e.i.(4), p. 145. As with Part VI.E.2.d.i.4, this Part does not apply to Trash TMDLs.

4. Because the Order additionally provides that full compliance with the general TMDL requirements in Part VI.E and the WQBELs and other TMDL-specific limitations in Attachments L through R constitutes compliance with the receiving water limitations in V.A for the specific pollutants addressed by the relevant TMDL, [60] provisions 2 and 3 above also constitute compliance with the receiving water limitations for the particular water body-pollutant combinations.

5. Finally, Permittees that have declared their intention to develop a WMP/EWMP may be deemed in compliance with receiving water limitations and with interim WQBELs with compliance deadlines occurring prior to approval of the WMP/EWMP if they meet certain conditions during the development phase.[61]

Both Environmental Petitioners and Permittee Petitioners put forth a number of arguments to the effect that the WMP/EWMP provisions of the Los Angeles MS4 Order are contrary to federal and state law or reflect poor policy. We discuss each argument below.

1. Anti-backsliding

The Environmental Petitioners argue that the inclusion of the WMP/EWMP in the Los Angeles MS4 Order violates the anti-backsliding provisions of the Clean Water Act and of the federal regulations.[62] The Clean Water Act generally prohibits the relaxation of an effluent limitation established in an NPDES permit when that permit is renewed; the federal regulations include similar provisions. The Environmental Petitioners argue that the WMP/EWMP of the Los Angeles MS4 Order, by allowing a discharger to be deemed in compliance with receiving water limitations, even where a discharger may in fact be causing or contributing to an exceedance of a water quality standard, represent a relaxation of the receiving water limitations provisions contained in the 2001 Los Angeles MS4 Order.[63]

We do not agree with the Environmental Petitioners that the WMP/EWMP provisions of the Los Angeles MS4 Order violate the anti-backsliding provisions of either the Clean Water Act or the federal regulations. Anti-backsliding provisions are an important aspect

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[60] *Id.*, Part VI.E.2.c.ii., p. 143. Although this provision reflects a departure from provisions in previous MS4 permits, the provision has not generated controversy and has not been contested in the petitions. The State Water Board supports this provision in MS4 permits, as discussed at section II.B.5.b. of this order.

[61] *Id.*, Parts VI.C. 2.d., pp. 52-53, VI.E.2.d.i.(4)(d), p. 144.

[62] 33 U.S.C. § 1342(o); 40 C.F.R. §122.44(*l*).

[63] The receiving water limitations of the 2001 Los Angeles MS4 Order (like the receiving water limitations in Section V.A. of the Los Angeles MS4 Order) were modeled on the precedential language in State Water Board Order WQ 99-05.

of the Clean Water Act that generally promote continued progress toward clean water, but the provisions do not apply in all circumstances and are subject to certain exceptions. The 2001 Los Angeles MS4 Order required compliance with receiving water limitations, directed Permittees to achieve those limitations through the iterative process, but retained the Los Angeles Water Board's discretion to enforce compliance with the receiving water limitations at any time. The Los Angeles MS4 Order requires compliance with receiving water limitations, but allows implementation of control measures through the WMPs/EWMPs to constitute such compliance, and reserves direct enforcement of the receiving water limitations to situations where a permittee fails to comply with the WMP/EWMP provisions. The approaches under the prior and current orders are designed to achieve the same results – compliance with receiving water limitations – but through distinct paths that are not easily comparable for purposes of the specific, technical anti-backsliding requirements laid out in federal law.[64] We nevertheless discuss the provisions below.

The Clean Water Act contains both statutory anti-backsliding provisions in section 402(o) and regulatory anti-backsliding provisions in 40 C.F.R. section 122.44(*l*). The Clean Water Act's statutory prohibition against backsliding applies under a narrow set of criteria specified in Clean Water Act section 402(o). First, section 402(o) prohibits relaxing effluent limitations originally established based on best professional judgment, when there is a newly revised effluent limitation guideline.[65] The WMP/EWMP is not derived from an effluent limitation guideline, so this first prohibition is inapplicable. Second, section 402(o) prohibits relaxing effluent limitations imposed pursuant to Clean Water Act sections 301(b)(1)(C) or 303(d) or (e).[66] The receiving water limitations provisions in the 2001 Los Angeles MS4 Order were not

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[64] Responding to an argument that NPDES Permit No. DC00000221 for MS4 discharges to the District of Columbia violated anti-backsliding requirements by removing certain numeric limitations in the prior permit, USEPA stated: "The Commenter implies that a Permit that replaces a numeric effluent limit with a non-numeric one is somehow automatically less stringent on that parameter. However, the narrative requirement only violates the anti-backsliding prohibition if the two provisions are comparable. . . . In this case, the two provisions are not comparable: EPA has determined that compliance with the performance standards in the Final Permit will result in more water quality protections for the DC MS4's receiving streams than did the previous aggregate numeric limit." (Responsiveness Summary, p. 84, *supra,* fn.17, citing *Communities for a Better Environment v. State Water Resources Control Bd.* (2005) 132 Cal. App. 4th 1313.)

[65] 33 U.S.C. § 1342(o)(1) ("In the case of effluent limitations established on the basis of subsection (a)(1)(B) of this section, a permit may not be renewed, reissued, or modified on the basis of effluent guidelines promulgated under section 1314 (b) of this title subsequent to the original issuance of such permit, to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit.").

[66] *Ibid.* ("In the case of effluent limitations established on the basis of section 1311 (b)(1)(C) or section 1313 (d) or (e) of this title, a permit may not be renewed, reissued, or modified to contain effluent limitations which are less stringent than the comparable effluent limitations in the previous permit except in compliance with section 1313 (d)(4) of this title.").

established based on either section 301(b)(1)(C) or section 303(d) or (e), so this prohibition on backsliding is inapplicable.[67] The receiving water limitations provisions in MS4 permits are imposed under section 402(p)(3)(B) of the Clean Water Act rather than under section 301(b)(1)(C),[68] and are accordingly not subject to the anti-backsliding requirements of section 402(o).

With respect to the regulatory anti-backsliding provisions in 40 Code of Federal Regulations section 122.44(*l*), the non-applicability is less clear cut. USEPA promulgated 40 Code of Federal Regulations section 122.44(*l*)(1) and its predecessor anti-backsliding regulations prior to the Water Quality Act of 1987, which established the municipal permitting requirements of section 402(p)(3)(B). There is ample regulatory history to demonstrate USEPA's intent in establishing the anti-backsliding policy and regulations with respect to evolving technology standards for traditional point sources.[69] We have found no definitive guidance, however, since that time from USEPA or the courts applying the general provisions of section 122.44(*l*) in the context of municipal storm water permits.[70] Further, we have previously noted that anti-backsliding principles may be difficult to assess in the context of non-

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[67] The Environmental Petitioners do not argue that the Los Angeles MS4 Order is contrary to Clean Water Act section 303(d)(4) (33 U.S.C. § 1313(d)(4)), which also sets out anti-backsliding requirements. Section 303(d)(4) sets out the conditions under which effluent limitations based on TMDL wasteload allocations may be relaxed. Specifically, effluent limitations for a discharge impacting an impaired water body where standards have not yet been attained may only be relaxed if either the cumulative effect of the revisions still assures the attainment of the water quality standards or the designated use that is not being attained is removed. (33 U.S.C. § 1313(d)(4)(A).) Where a water body has attained standards, effluent limitations may only be relaxed consistent with the federal antidegradation policy. (33 U.S.C. § 1313(d)(4)(B).)

[68] *Defenders of Wildlife*, *supra*, 191 F.3d at pp. 1165-1166.

[69] See, e.g., 44 Fed.Reg. 32854, 32864 (Jun. 7, 1979) (describing codification of predecessor regulation codified at 40 C.F.R. 122.15(i).) In the context of municipal storm water, the MEP standard is the technology standard; the record here supports that MEP, as reflected in the permit conditions, has evolved since the issuance of the 2001 Los Angeles MS4 Order to become more stringent. (See, e.g., Los Angeles MS4 Order, Part VI.D.9.h.vii., p.132, compared to 2001 Los Angeles MS4 Order, Part 4.F.5.c., pp.48-49 [trash controls]; Los Angeles MS4 Order, Part VI.D.7.c., pp. 97-109, as compared to 2001 Los Angeles MS4 Order, Part 4.D.3., pp.36-37 [new development/redevelopment project performance criteria]; Los Angeles MS4 Order, Part VI.D.8.d., pp.113-114, as compared to 2001 Los Angeles MS4 Order, Part 4.E., pp.42-45 [requirements for construction sites less than one acre].)

[70] As requested by the Environmental Petitioners, we took official notice of a Letter to the Water Management Administration, Maryland Department of the Environment, issued by USEPA Region III on August 8, 2012. (See fn. 19). We acknowledge that the letter states at page 3 that a provision in the Prince George County, Maryland, Phase I MS4 draft permit allowing for more time to complete tasks that were required under the previous permit constituted backsliding. The letter refers in passing to section 122.44(*l*)(1), but the letter has no regulatory effect and, further, is devoid of any analysis. The Environmental Petitioners have also pointed us to discussion of the regulatory anti-backsliding provisions in the NPDES Permit Writers' Manual. (NPDES Permit Writers' Manual, p. 7-4.) The relevant section of the NPDES Permit Writers' Manual does not explicitly distinguish between municipal storm water permits and traditional NPDES Permits in its discussion of the applicability of regulatory anti-backsliding provisions; however, nor does it specifically direct application of the anti-backsliding regulatory provisions to municipal storm water permits. We do not find this discussion to be to be determinative on the issue.

quantitative, non-numeric requirements such as BMPs and plans.[71] It is unnecessary, however, to resolve the ultimate applicability of the regulatory anti-backsliding provisions, because, assuming for the sake of argument they do apply, the WMP/EWMP provisions would qualify for an exception to backsliding as discussed below.

Even if the receiving water limitations in MS4 permits could be considered subject to the anti-backsliding requirements of the Clean Water Act or the federal regulations, backsliding would be permissible based on the new information available to the Los Angeles Water Board when it developed and adopted the Los Angeles MS4 Order. The Clean Water Act and federal regulations contain exceptions to the anti-backsliding requirements where new information is available to the permitting authority that was not available at the time of the issuance of the prior permit and that would have justified the imposition of less stringent effluent limitations at that time.[72] The Los Angeles Water Board makes a compelling argument in its October 15, 2013 Response that the development of 33 watershed-based TMDLs adopted since 2001, the inclusion and implementation of three of those TMDLs in the 2001 Los Angeles MS4 Order, and the TMDL-specific and general monitoring and analysis during implementation, have made new information available to the Los Angeles Water Board that fundamentally shaped the WMP/EWMP alternative of the Los Angeles MS4 Order. The Los Angeles Water Board states that the new information resulted in a new understanding that "time to plan, design, fund, operate and maintain [best management practices (BMPs)] is necessary to attain water quality improvements, and these BMPs are best implemented on a watershed scale."[73] The Los Angeles Water Board further points out that, in terms of water supply, there has been a paradigm shift in the last decade from viewing storm water as a liability to viewing it as a regional asset, and that the Los Angeles MS4 Order was drafted to incorporate this new paradigm into its structure.

The WMP/EWMP approach represents a comprehensive attempt to implement the Board's new understanding regarding how to make progress toward achieving water quality

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[71] See Order WQ 96-13 (*Save San Francisco Bay Association*) at pp. 8-10. Although the relevant portion of that decision primarily concerned Clean Water Act section 402(o), its analysis is equally instructive with respect to 40 C.F.R. section 122.44(*l*). (In passing, we note that the order appears to assume that the permit's water quality-based requirements for the MS4 permit were derived pursuant to section 301(b)(1)(C); however, that assumption is in error based on the *Defenders of Wildlife* decision and subsequent State Water Board precedent.)

[72] See 33 U.S.C. § 1342(o)(2)(B)(i); 40 C.F.R. § 122.44(*l*)(1) (anti-backsliding does not apply if the circumstances on which the previous permit was based have materially and substantially changed and would constitute cause for permit modification under 40 C.F.R. section 122.62); 40 C.F.R. § 122.62(a)(2) (stating that new information not available at the time the previous permit was issued is cause for modification); see also 40 C.F.R. §122.44(*l*)(2)(i)(B)(1).

[73] Los Angeles Water Board October 15, 2013 Response, p. 51.

standards as well as supporting the development of new water supplies.[74] The anti-backsliding requirements of the Clean Water Act and the federal regulations thus did not foreclose the incorporation of the WMP/EWMP alternatives into the Los Angeles MS4 Order even though the alternatives allow additional time to achieve receiving water limitations as compared to the immediate compliance required under the 2001 Los Angeles MS4 Order.

We shall amend Finding II.N. and Part III.D.4, page F-20, of Attachment F, Fact Sheet, as follows:

Finding II.N:

N. Anti-Backsliding Requirements. Section 402(o)(2) of the CWA and federal regulations at 40 CFR section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous permit. **The Fact Sheet of this Order contains further discussion regarding anti-backsliding.**

Attachment F, Fact Sheet, Part III.D.4:

4. Anti-Backsliding Requirements. Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. ~~All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous permit.~~ **While this Order allows implementation of Watershed Management Plans/EWMPs to constitute compliance with receiving water limitations under certain circumstances, the availability of that alternative and the corresponding availability of additional time to come into compliance with receiving water limitations, does not violate the anti-backsliding provisions. The receiving**

[74] The Environmental Petitioners argue that information relied on to develop the WMP/EWMP approach was available to the Los Angeles Water Board at the time of the issuance of the 2001 Los Angeles MS4 Order, since regional and watershed based strategies and technologies in storm water planning, as well as the potential benefits of storm water for water supply, were considered prior to the last permit cycle. Similarly, the Environmental Petitioners argue that some of the data gathered through TMDL development was through the process of assessing impairments and through preparing drafts of the TMDL and was therefore available to the Los Angeles Water Board in 2001. (Environmental Petitioners, Written Comments, Jan. 21, 2015, pp. 15-17, 23-25.) The Environmental Petitioners have asked us to take official notice of several documents that support these assertions. It is not necessary for us to do so because we do not disagree with the Environmental Petitioners that some of the information that the Los Angeles Water Board has cited in support of an exception to the anti-backsliding requirements was available at the time of the adoption of the 2001 Los Angeles MS4 Order. We nevertheless concur with the Los Angeles Water Board that the more than a decade of implementation of storm water requirements, as well as the development and implementation of TMDL requirements, since 2001, has, as a whole, fundamentally reshaped our understanding of the physical and time scale on which such measures must be implemented to bring MS4s into compliance with receiving water limitations. Further, we find that all regional water boards are informed by the information gained in the Los Angeles region, so that any regional water board that adopts an alternative compliance path in a subsequent Phase I permit would not be in violation of anti-backsliding requirements, regardless of the particular storm water permitting history of that region.

water limitations provisions of this Order are imposed under section 402(p)(3)(B) of the Clean Water Act rather than based on best professional judgment, or based on section 301(b)(1)(C) or sections 303(d) or (e), and are accordingly not subject to the anti-backsliding requirements of section 402(o). Although the non-applicability is less clear with respect to the regulatory anti-backsliding provisions in 40 Code of Federal Regulations section 122.44(*l*), the regulatory history suggests that USEPA's intent was to establish the anti-backsliding regulations with respect to evolving technology standards for traditional point sources. (See, e.g., 44 Fed.Reg. 32854, 32864 (Jun. 7, 1979)). It is unnecessary, however, to resolve the ultimate applicability of the regulatory anti-backsliding provisions, because the WMP/EWMP provisions qualify for an exception to backsliding as based on new information. The Watershed Management Plan/EWMP provisions of this Order were informed by new information available to the Board from experience and knowledge gained through the process of developing 33 watershed-based TMDLs and implementing several of the TMDLs since the adoption of the previous permit. In particular, the Board recognized the significance of allowing time to plan, design, fund, operate and maintain watershed-based BMPs necessary to attain water quality improvements and additionally recognized the potential for municipal storm water to benefit water supply. Thus, even if the receiving water limitations are subject to anti-backsliding requirements, they were revised based on new information that would support an exception to the anti-backsliding provisions. (33 U.S.C. § 1342(o)(2)(B)(i); 40 C.F.R. § 122.44(l)(1); 40 C.F.R. §122.44(l)(2)(i)(B)(1)).

2. Antidegradation

The Environmental Petitioners argue that the WMP/EWMP provisions of the Los Angeles MS4 Order violate the federal and state antidegradation policies.[75] The federal and state antidegradation policies generally require that the existing quality of water bodies be maintained, unless degradation is justified through specific findings. At a minimum, any degradation may not lower the quality of the water below the water quality standards.[76]

The federal and state antidegradation policies are not identical; however, where the federal antidegradation policy is applicable, the State Water Board has interpreted State Water Board Resolution No. 68-16, the state antidegradation policy, to incorporate the federal antidegradation policy.[77] In the context of the Los Angeles MS4 Order, a federal NPDES permit, compliance with the federal antidegradation policy would require consideration of the following: First, the Los Angeles MS4 Order must ensure that "existing instream uses and the level of

[75] 40 C.F.R. § 131.12; State Water Board Resolution No. 68-16, Statement of Policy with Respect to Maintaining High Quality Waters in California (State Water Board Resolution No. 68-16).

[76] *Ibid.*

[77] State Water Board Order WQ 86-17 (*Fay*), pp. 16-19.

water quality necessary to protect the existing uses" is maintained and protected.[78] Second, if the baseline quality of a water body for a given constituent "exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected" through the requirements of the Los Angeles MS4 Order unless the Los Angeles Water Board makes findings that (1) any lowering of the water quality is "necessary to accommodate important economic or social development in the area in which the waters are located;" (2) "water quality adequate to protect existing uses fully" is assured; and (3) "the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control" are achieved.[79]

The Los Angeles MS4 Order must also comply with any requirements of State Water Board Resolution No. 68-16 beyond those imposed through incorporation of the federal antidegradation policy.[80] In particular, the Los Angeles Water Board must find that not only present, but also anticipated future uses of water are protected, and must ensure "best practicable treatment or control" of the discharges."[81] The baseline quality considered in making the appropriate findings is the best quality of the water since 1968, the year of the adoption of Resolution No. 68-16, or a lower level if that lower level was allowed through a permitting action that was consistent with the federal and state antidegradation policies.[82]

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[78] 40 C.F.R. § 131.12(a)(1). This provision has been interpreted to mean that, "[i]f baseline water quality is equal to or less than the quality as defined by the water quality objective, water quality shall be maintained or improved to a level that achieves the objectives." (State Water Board, Administrative Procedures Update, Antidegradation Policy Implementation for NPDES Permitting, 90-004 (APU 90-004), p. 4.) This provision is completely consistent with, and implemented by, the receiving water limitations provisions discussed above.

[79] 40 C.F.R. § 131.12(a)(2); see also State Water Board Resolution No. 68-16, Resolve 2. The federal regulations additionally require strict maintenance of water quality for "outstanding national resources." (40 C.F.R. § 131.12(a)(3).) There are no designated outstanding national resource waters covered by the Los Angeles MS4 Order.

[80] See State Water Board Order WQ 86-17 (*Fay*), p. 23, fn. 11.

[81] State Water Board Resolution No. 68-16, Resolve 2. Best practicable treatment or control is not defined in Resolution No. 68-16; however, the State Water Board has evaluated what level of treatment or control is technically achievable using "best efforts." (See State Water Board Orders WQ 81-5 (*City of Lompoc*), WQ 82-5 (*Chino Basin Municipal Water District)*, WQ 90-6 (*Environmental Resources Protection Council*).) A Questions and Answers document on Resolution No. 68-16 by the State Water Board states as follows: "To evaluate the best practicable treatment or control method, the discharger should compare the proposed method to existing proven technology; evaluate performance data, e.g. through treatability studies; compare alternative methods of treatment or control; and/or consider the method currently used by the discharger or similarly situated dischargers . . .The costs of the treatment or control should also be considered . . . ." (Questions and Answers, Resolution No. 68-16, State Water Board (Feb. 16, 1995), pp. 5-6.)

[82] APU 90-004, p.4. The baseline for application of the federal antidegradation policy is 1975. For state antidegradation requirements, see also *Asociacion de Gente Unida por el Agua v. Central Valley Water Board* (2012) 210 Cal.App.4th 1255,1270. The baseline for the application of the state antidegradation policy is generally the highest water quality achieved since 1968. However, where a water quality objective for a particular constituent was adopted after 1968, the baseline for that constituent is the highest water quality achieved since the adoption of the *(Continued)*

The Los Angeles MS4 Order contains a conclusory antidegradation finding, but the Fact Sheet contains additional discussion.[83] The Fact Sheet discussion essentially conveys that, where there are high quality waters in the region, the antidegradation requirements are met because the Order requires best practicable treatment or control in the form of MEP and water quality standards compliance and, further, where the water quality is already impaired, the Order requires implementation of TMDL requirements to achieve water quality standards over time. The Fact Sheet also finds that the Los Angeles MS4 Order does not authorize an increase in waste discharges. The Los Angeles Water Board argues that it was not required to make more detailed findings because, using its best professional judgment and available data, it concluded that the Los Angeles MS4 Order would prevent any degradation. For this proposition, the Los Angeles Water Board cites to State Water Board guidance from 1990 (APU 90-004).[84] The guidance may be construed to exempt the Los Angeles Water Board from conducting an extensive pollutant by pollutant analysis for each water body in the region, but it does not exempt the Board from clearly stating its basis for finding that its action is consistent with the antidegradation policies.

The Los Angeles Water Board has provided a more extensive analysis of why the Los Angeles MS4 Order complies with the antidegradation policies in its October 15, 2013 Response. The Los Angeles Water Board argues that most of the water bodies impacted by the Los Angeles MS4 Order are already impaired for multiple constituents and that, even if some of these water bodies may have been higher quality in 1968, a scenario largely contradicted by the available data,[85] the appropriate baseline for the quality of such waters is the level of control achieved under the prior permit. The Los Angeles Water Board further argues that the Los Angeles MS4 Order has provisions that are equally or more stringent than those of the

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(continued from previous page)
objective. Resolution 68-16 requires a comparison of the existing quality to "the quality established in policies as of the date on which such policies become effective." (Resolution 68-16, Resolve 1.)

[83] Los Angeles MS4 Order, Finding II.M; Fact Sheet, Att. F, pp. F19-F20.

[84] APU 90-004, p. 2.

[85] We reviewed the Administrative Record, including the 1998 Clean Water Act section 303(d) List (May 12, 1999) (Administrative Record, section 10.VI.E., RB-AR35684-35733), the 2010 Clean Water Act section 303(d) List (Oct.11, 2011) (Administrative Record, section 10.VI.E., RB-AR35734-35785), Santa Monica Bay Restoration Project, An Assessment of Inputs of Fecal Indication Organisms and Human Enteric Viruses from Two Santa Monica Bay Storm Drains (1990) (Administrative Record, section 10.VI.E, RB-AR43363-43413), Toxic Substances Monitoring Program, 10 Year Summary Report 1978-1987 (Administrative Record, Order No. 01-182, R0044602-0045053) and comments submitted by interested persons to the Los Angeles Water Board (Administrative Record RB-AR1006-1038, RB-AR1100-1128, RB-AR1768-2119, RB-AR2653-2847, RB-AR5642-17888). We found no specific evidence presented to the Los Angeles Water Board of high quality waters in the region with regard to pollutants typically associated with storm water discharges; however, we also recognize that in the absence of specific evidence of high quality waters, a blanket statement that there are no high quality water body-pollutant combinations may be overbroad.

2001 Los Angeles MS4 Order and therefore will not allow water quality to degrade below the level of control achieved under the prior permit.

We agree with the Los Angeles Water Board that the Los Angeles MS4 Order maintains and improves the level of control achieved under the 2001 Los Angeles MS4 Order. We expect that the Los Angeles MS4 Order's TMDL requirements and receiving water limitations, which may be implemented through the WMP/EWMP provisions, will be the means for achieving water quality standards for the majority of degraded water bodies in the region. To assert, as the Environmental Petitioners do, that compliance with the receiving water limitations provisions of the 2001 Los Angeles Order is more stringent than establishing specific implementation requirements with clear deadlines for TMDL and receiving water limitations compliance is misguided. We are concerned with the totality of the provisions in the two permits and find that, viewed from that broader perspective, the Los Angeles MS4 Order is at least as stringent in addressing degradation as its predecessor.[86] The Los Angeles MS4 Order improves on past practices that have been inadequate to protect water quality, and includes a monitoring and assessment program that will identify any changes in water quality.[87] In general, under the Los Angeles MS4 Order, we expect to see a trajectory away from any past degradation, even if there may be some continued short-term degradation.

We are not persuaded, however, that the level of control achieved under the 2001 Los Angeles MS4 Order necessarily represents the baseline for purposes of an antidegradation analysis. The 2001 Los Angeles MS4 Order had only minimal findings regarding antidegradation and it is not apparent that any degradation that may have continued under the conditions of the 2001 Los Angeles MS4 Order was anticipated by the Los Angeles Water Board and supported with appropriate analysis regarding economic and social benefits[88] and best practicable treatment or control. We therefore find that the appropriate baseline remains 1968 or the highest quality of receiving waters attained since 1968. We acknowledge

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[86] In making this finding we also recognize that the Permittees may be deemed in compliance with receiving water limitations prior to approval of the WMP/EWMP. (Los Angeles MS4 Order Parts VI.C.2.d., pp. 52-53, VI.E.2.d.i.(4)(d), p. 144.) As discussed further under section II.B.6., we find that the Los Angeles Water Board reasonably exercised its discretion in allowing for compliance during the program development phase and further that the program development phase does not detract from the overall effectiveness of the permit provisions.

[87] *See Asociacion de Gente Unida, supra*, 210 Cal.App.4th at p. 1278.

[88] We note that the administrative record provides evidence that some discharge of storm water is to the maximum benefit of the people of the state because such discharge is necessary for flood control and public safety and helps accommodate development. (See, e.g., Administrative Record, section 10.VI.C, RB-AR30101; RB-AR32557-32558.)

that the evidence in the record indicates that it is unlikely that many water bodies were high quality even as far back as 1968, but we cannot make a blanket statement to that effect.[89]

Despite this conclusion, we will not remand the antidegradation issue to the Los Angeles Water Board for further consideration, but will make the findings ourselves based on the record before us. Our findings are necessarily made at a generalized level. Even if the directive of APU 90-004 to carry out a complete antidegradation analysis for each water body-pollutant combination is applicable here, there is simply insufficient data available (to us or the Los Angeles Water Board) to make such findings. The APU 90-004 contemplates the appropriate antidegradation analysis for a discrete discharge or facility. It has limited value when considering antidegradation in the context of storm water discharges from diffuse sources, conveyed through multiple outfalls, with multiple pollutants impacting multiple water bodies within a municipality, or in this case, region, especially given that reliable data on the baseline water quality from 1968 is not available.[90]

The Environmental Petitioners propose that antidegradation be addressed in subsequent actions of the Los Angeles Water Board by requiring that the reasonable assurance analysis (discussed in greater detail in section II.B.4.c. of this Order) supporting a WMP/EWMP also demonstrate that the proposed control measures will maintain high quality of waters with regard to pollutants for which they are not impaired. We reject this approach for two reasons. First, the Los Angeles Water Board was required under the federal and state antidegradation policies to evaluate whether permit conditions would lead to degradation of high quality waters at the time of permit issuance. Second, requiring Permittees to incorporate an evaluation of all water body-pollutant combinations, including those where there are no impairments or exceedances, would require them to expand the reasonable assurance analysis beyond its useful function and manageable scope.

We shall amend Finding II.M and Part D.3 at pages F-19 to F-20 of Attachment F, the Fact Sheet, as follows:

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[89] See fn. 85.

[90] We note that USEPA did not conduct a detailed antidegradation analysis in issuing NPDES Permit No. DC00000221 for MS4 discharges to the District of Columbia, presumably for similar reasons. The court in *Asociacion de Gente Unida* relied on APU 90-004 in part in rejecting an antidegradation analysis conducted by the Central Valley Regional Water Quality Control Board for discharges of pollutants to groundwater from dairy facilities region-wide, but the court's objection was to the regional water board's reliance on an illusory prohibition of discharge to groundwater in finding that no antidegradation analysis was required, not to the sufficiency of any generalized antidegradation analysis the Board might have conducted in lieu of its reliance on the prohibition. (210 Cal.App.4th at pp. 1271-1273.)

Finding II. M.

M. Antidegradation Policy
40 CFR section 131.12 requires that state water quality standards include an antidegradation policy consistent with the federal antidegradation policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining the Quality of the Waters of the State"). Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing water quality be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the state and federal antidegradation policies. The permitted discharge is consistent with the antidegradation provision of section 131.12 and State Water Board Resolution No. 68-16 **as set out in the Fact Sheet.**

Attachment F, Fact Sheet Part III.D.3.

3. Antidegradation Policy. 40 CFR section 131.12[4] requires that the state water quality standards include an antidegradation policy consistent with the federal antidegradation policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining the Quality of the Waters of the State"). Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. Resolution No. 68-16 and 40 CFR section 131.12 require the Regional Water Board to maintain high quality waters of the State **unless degradation is justified based on specific findings. First, the Board must ensure that "existing instream uses and the level of water quality necessary to protect the existing uses" are maintained and protected. Second, if the baseline quality of a water body for a given constituent exceeds levels necessary to support propagation of fish, shellfish, and wildlife and recreation in and on the water, that quality shall be maintained and protected through the requirements of the Order unless the Board makes findings that (1) any lowering of the water quality is necessary to accommodate important economic or social development in the area in which the waters are located; (2) water quality adequate to protect existing uses fully is assured; and (3) the highest statutory and regulatory requirements for all new and existing point sources and all cost-effective and reasonable best management practices for nonpoint source control are achieved. The Board must also comply with any requirements of State Water Board Resolution No. 68-16 beyond those imposed through incorporation of the federal antidegradation policy. In particular, the Board must find that not only present, but also anticipated future uses of water are protected, and must ensure best practicable treatment or control of the discharges. The baseline quality considered in making the appropriate findings is the best quality of the water since 1968, the year of the adoption of Resolution No. 68-16, or a lower level if that lower level was allowed through a permitting action that was consistent with the federal and state antidegradation policies.** ~~until it is demonstrated that any change in quality will~~

~~be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Regional Water Board's policies. Resolution 68-16 requires that discharges of waste be regulated to meet best practicable treatment or control to assure that pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the State be maintained.~~

The discharges permitted in this Order are consistent with the antidegradation provisions of 40 CFR section 131.12 and Resolution 68-16 **as set out in the Findings below:**~~.~~

1. ~~Many of the water bodies within the area covered by this Order are of high quality. The Order requires the Permittees to meet best practicable treatment or control to meet water quality standards. As required by 40 CFR section 122.44(a), the Permittees must comply with the "maximum extent practicable" technology-based standard set forth in CWA section 402(p).~~ Many of the waters within the area covered by this Order are impaired ~~and~~ **for multiple pollutants discharged through MS4s and are not high quality waters with regard to these pollutants. In most cases, there is insufficient data to determine whether these water bodies were impaired as early as 1968, but the limited available data shows impairment dating back for more than two decades. Many such water bodies are** listed on the State's CWA Section 303(d) List and either the Regional Water Board or USEPA has established TMDLs to address the impairments. **This Order ensures that existing instream (beneficial) water uses and the level of water quality necessary to protect the existing uses is maintained and protected**. This Order requires the Permittees to comply with permit provisions to implement the WLAs set forth in the TMDLs in order to restore the beneficial uses of the impaired water bodies consistent with the assumptions and requirements of the TMDLs. **This Order further requires compliance with receiving water limitations to meet water quality standards in the receiving water either by demonstrating compliance pursuant to Part V.A and the Permittee's monitoring and reporting program pursuant to Part VI.B or by implementing Watershed Management Programs/EWMPs with a compliance schedule.** This Order includes requirements to develop and implement storm water management programs, achieve water quality-based effluent limitations, and effectively prohibit non-storm water discharges through the MS4.

2. To the extent that some of the water bodies within the jurisdiction are high quality waters with regard to some constituents, this Order finds as follows:

a. Allowing limited degradation of high quality water bodies through MS4 discharges is necessary to accommodate important economic or social development in the area and is consistent with the maximum benefit to the people of the state. The discharge of storm water in certain circumstances is to the maximum benefit to the people of the state because it can assist with maintaining instream flows that support beneficial uses, may spur the development of multiple-benefit projects, and may be necessary for flood control, and public safety as well as to accommodate development in the

area. The alternative – capturing all storm water from all storm events – would be an enormous opportunity cost that would preclude MS4 permittees from spending substantial funds on other important social needs. The Order ensures that any limited degradation does not affect existing and anticipated future uses of the water and does not result in water quality less than established standards. The Order requires compliance with receiving water limitations that act as a floor to any limited degradation.

b. The Order requires the highest statutory and regulatory requirements and requires that the Permittees meet best practicable treatment or control. The Order prohibits all non-storm water discharges, with a few enumerated exceptions, through the MS4 to the receiving waters. As required by 40 CFR section 122.44(a), the Permittees must comply with the "maximum extent practicable" technology-based standard set forth in CWA section 402(p), and implement extensive minimum control measures in a storm water management program. Recognizing that best practicable treatment or control may evolve over time, the Order includes new and more specific requirements as compared to Order No. 01-182. The Order incorporates options to implement Watershed Management Programs or EWMPs that must specify concrete and detailed structural and non-structural storm water controls that must be implemented in accordance with an approved time schedule. The Order contains provisions to encourage, wherever feasible, retention of the storm water from the 85th percentile 24-hour storm event.

~~The issuance of this Order does not authorize an increase in the amount of discharge of waste. The Order includes new requirements to implement WLAs assigned to Los Angeles County MS4 discharges that have been established in 33 TMDLs, most of which were not included in the previous Order.~~

3. Compliance Schedules and the Appropriateness of Enforcement Orders

The Environmental Petitioners concede that immediate compliance with receiving water limitations is not achievable in many instances and that some additional time to reach compliance is warranted. They have proposed an alternative to the WMP/EWMP that would incorporate many of the provisions of those programs but require implementation through the mechanism of a time schedule order or other enforcement order rather than as permit conditions. The Los Angeles MS4 Order already provides that Permittees who are out of compliance with final WQBELs and other TMDL-specific limitations may request a time schedule order.[91] Under the alternative proposed by the Environmental Petitioners, all Permittees that are currently out of compliance with receiving water limitations not addressed by a TMDL as well as with interim TMDL requirements with passed compliance deadlines, would be issued a time schedule order or other enforcement order not to exceed the five year term of

[91] Los Angeles MS4 Order, Part VI.E.4., pp.146-147.

the permit. The Permittees would then implement a WMP/EWMP type plan to achieve compliance with the appropriate limitations within the confines of the enforcement order.

In the prior two sections, we found that the WMP/EWMP provisions are not contrary to the anti-backsliding or antidegradation requirements of federal and state law. We therefore disagree with the Environmental Petitioners that the relevant provisions must be stricken from the Order and incorporated instead into an enforcement order for those reasons. We also find that, given that strict compliance with water quality standards is discretionary in MS4 permits, the Los Angeles Water Board was not restricted to limiting the schedule for compliance with receiving water limitations to the term of the Los Angeles MS4 Order.

Further, from a policy perspective, we find that the MS4 Permittees that are developing and implementing a WMP/EWMP should be allowed additional time to come into compliance with receiving water limitations and interim and final TMDLs through provisions built directly into their permit, rather than through enforcement orders. Building a time schedule into the permit itself, as the Los Angeles MS4 Order does, is appropriate because it allows a more efficient regulatory structure compared to having to issue multiple enforcement orders. More importantly, it is appropriate to regulate Permittees in a manner that allows them to strive for compliance with the permit terms, provided no provision of law otherwise precludes including the schedule in the NPDES permit. For example, for traditional point source discharges subject to strict compliance with water quality standards pursuant to section 301(b)(1)(C), the terms of a compliance schedule are dictated by our compliance schedule policy (State Water Board Resolution 2008-0025) and any additional time for compliance could only be under the auspices of an enforcement order outside the permit.[92]

The WMP/EWMP provisions constitute an effort to set ambitious, yet achievable, targets for Permittees; receiving water limitations, on the other hand, while the ultimate goal of MS4 permitting, may not in all cases be achievable within the five-year permit cycle. Generally, permits are best structured so that enforcement actions are employed when a discharger shows some shortcoming in achieving a realistic, even if ambitious, permit condition and not under circumstances where even the most diligent and good faith effort will fail to achieve the required condition. We add that it is our intention to encourage a watershed-based approach to addressing storm water issues going forward and that it would be contrary to that intention to

[92] We also note that the State Water Board's Policy for the Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (2005) (State Implementation Policy) and the CTR itself (40 C.F.R. § 131.38(e)) restrict the scope of compliance schedules for effluent limitations addressing the discharge of toxic pollutants; however the policy does not apply to storm water discharges. (State Implementation Policy, p.3, fn.1.)

structure the watershed-based requirements as an enforcement order. We will not require Permittees that propose and timely implement a WMP/EWMP to request time schedule orders or other enforcement orders as a precondition of being in compliance with the receiving water limitations or interim TMDL requirements of the Los Angeles MS4 Order.

While declining to structure the WMP/EWMP provisions generally as an enforcement order, we acknowledge that time schedule orders are appropriate under some circumstances. We have already noted that the Los Angeles MS4 Order allows a Permittee to request a time schedule order where a final compliance deadline for a state-adopted TMDL has passed and the Permittee believes that additional time to comply with the requirement is necessary.[93] We expect that a Permittee will request a time schedule order also if the Permittee fails to meet a final compliance deadline for a TMDL after the adoption date of the Los Angeles MS4 Order. We will also provide that a Permittee may request a time schedule order if the Permittee fails to meet a final compliance deadline for a receiving water limitation set in the Permittee's WMP/EWMP.

We shall add a new Part VI.C.6.b and revise Part VI.E.4.b as follows:

Part VI.C.6

b. Where a Permittee believes that additional time to comply with a final receiving water limitation compliance deadline set within a WMP/EWMP is necessary, and the Permittee fails to timely request or is not granted an extension by the Executive Officer, a Permittee may, no less than 90 days prior to the final compliance deadline, request a time schedule order pursuant to California Water Code section 13300 for the Regional Water Board's consideration.

Part VI.E.4

b. Where a Permittee believes that additional time to comply with the final water quality-based effluent limitations and/or receiving water limitations is necessary, a Permittee may within 45 days of Order adoption**, or no less than 90 days prior to the final compliance deadline if after adoption of the Order,** request a time schedule order pursuant to California Water Code section 13300 for the Regional Water Board's consideration.

4. Rigor and Accountability in the WMPs/EWMPs

We now turn to a consideration, from a technical as well as policy lens, as to whether the WMPs/EWMPs are structured in a manner that will maximize the likelihood of

[93] *Ibid.*

reaching the ultimate goal of the compliance alternative – achieving receiving water limitations.[94] We can support an alternative approach to compliance with receiving water limitations only to the extent that that approach requires clear and concrete milestones and deadlines toward achievement of receiving water limitations and a rigorous and transparent process to ensure that those milestones and deadlines are in fact met. Conversely, we cannot accept a process that leads to a continuous loop of iterative WMP/EWMP implementation without ultimate achievement of receiving water limitations.

We find below that the WMP/EWMP provisions generally ensure the appropriate rigor, transparency, and accountability, and that, with the few revisions we direct, are designed to lead to achievement of receiving water limitations.[95]

a. Milestones and Compliance Deadlines

We first consider whether the WMP/EWMP provisions require clear, concrete, and finite milestones and deadlines.

For water body-pollutant combinations addressed by TMDLs, the Los Angeles MS4 Order requires the Permittees to incorporate the compliance schedules found in Attachments L through R of the Order, which reflect previously adopted TMDL-based requirements, into the WMP/EWMP, and, as necessary, to develop interim milestones and dates for their achievement.[96] A Permittee that does not thereafter comply with the approved compliance schedule must instead demonstrate compliance with the WQBELs and other TMDL-specific limitations of the Order.[97] For water body-pollutant combinations not addressed by a TMDL, but where the relevant pollutant is one for which the water body is identified as impaired on the Clean Water Act section 303(d) List and the pollutant is in the same class as a TMDL pollutant, the Order requires that the WMP/EWMP incorporate a schedule consistent with the TMDL schedule for the same class pollutant.[98] A Permittee that does not thereafter comply with

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[94] From a legal standpoint, our analysis serves to verify that the Los Angeles MS4 Order's alternative compliance approach through WMPs/EWMPs is supported by the findings and by evidence in the record. (*Topanga Assn. for a Scenic Community v. County of Los Angeles* (1974) 11 Cal.3d 506.)

[95] We do not agree with Permittee Petitioners that the WMP/EWMP provisions are precluded by the program requirements of 40 Code of Federal Regulations section 122.26. Nor do we agree that the requirements are vague or lack definition. The WMP/EWMP provisions of the Order are guidelines for development of a subsequent program with more specificity to be approved by the Los Angeles Water Board or its Executive Officer.

[96] Los Angeles MS4 Order, Part VI.C.5.c., pp.64-65.

[97] *Id.*, Part VI.E.2.d.i(4)(c), p.144.

[98] *Id.*, Part VI.C.2.a.i., pp. 49-50.

the approved compliance schedule must instead demonstrate immediate compliance with the receiving water limitations in Part V.A.[99] We will not disturb these provisions.

With regard to exceedances of receiving water limitations not addressed by a TMDL, and where the pollutant is not in the same class as a pollutant addressed by a TMDL, the Order requires that the WMP/EWMP include milestones based on measurable criteria or indicators and a schedule for achieving the milestones. The WMP/EWMP must also incorporate a final date for achievement of receiving water limitations, but that date is circumscribed simply as "as soon as possible."[100] Parts VI.C.2.a.ii.(4) and VI.C.2.a.iii.(2)(c) help clarify the meaning of "as soon as possible:"

> Permittees shall identify enforceable requirements and milestones and dates for their achievement to control MS4 discharges such that they do not cause or contribute to exceedances of receiving water limitations within a timeframe(s) that is as short as possible, taking into account the technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary. The time between dates shall not exceed one year. Milestones shall relate to a specific water quality endpoint (e.g., x% of the MS4 drainage area is meeting the receiving water limitations) and dates shall relate either to taking a specific action or meeting a milestone.[101]

We will make a revision to the compliance schedule provisions to make it clear that the term "as soon as possible" is to be interpreted consistent with the more specific direction cited above. However, because the WMP/EWMP, and therefore the proposed compliance schedule, is subject to public review and comment and approval by the Los Angeles Water Board or its

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[99] *Id.*, Part VI.C.2.c., p.52.

[100] *Id.*, Part VI.C.5.c.iii.(3), p. 65. If the pollutant is not in the same class as those addressed in a TMDL, but the water body is still identified as impaired for that pollutant, the WMP/EWMP must either have a final compliance deadline within the 5 year permit term or Permittees are expected to initiate development of a stakeholder-proposed TMDL and incorporate a compliance schedule consistent with the TMDL. (*Id.*, Part VI.C.2.a. ii., pp. 50-51) (If the exceedances are in a drainage area implementing the storm water retention approach, there is no requirement to initiate the TMDL development process.) The requirement to address receiving water limitations is ongoing. As exceedances are found through monitoring for water body-pollutant combinations not identified on the 303(d) List, Permittees must either meet receiving water limitations or include the water body-pollutant combination in the WMP/EWMP and set enforceable requirements and milestones and dates for their achievement within a time frame that is as short as possible. (*Id.*, Part VI.C.2.a.iii, pp. 51-52.) Permittees are deemed in compliance with receiving water limitations only for water body-pollutant combinations addressed in the WMP/EWMPs. Thus, as pointed out by several interested parties, for lower priority water body-pollutant combinations not incorporated into a WMP/EWMP for which exceedances are detected, Permittees may be in violation of the receiving water limitations. A Permittee always has the ability to reprioritize a water body-pollutant combination from low priority to high priority and amend its WMP/EWMP to incorporate measures to address that water body-pollutant combination.

[101] *Id.*, Parts VI.C.2.a.ii.4, p. 50, VI.C.2.a.iii.(2)(c), p. 51 (identical language).

Executive Officer,[102] we do not find it necessary to constrain the determination of milestones and dates for the achievement of receiving water limitations any further.

We shall amend Part VI.C.5.c.iii.(3)(b) as follows:

(b) A final date for achieving the receiving water limitations as soon as possible**, consistent with Parts VI.C.2.a.ii.(4) & VI.C.2.a.iii.(2)(c)**.

b. Constraints on Extension of Deadlines

The fact that the Los Angeles MS4 Order requires the establishment of concrete and rigorous deadlines within the WMP/EWMP for the achievement of receiving water limitations is critical to ensuring progress on such achievement; however, the Order also contemplates that the deadlines, with the exception of those compliance deadlines established in a TMDL, may be extended.[103] The WMP/EWMP is subject to an adaptive management process. Based on the results of that process the Permittees may propose modifications, including modifications to compliance deadlines and interim milestones, in the Annual Report.[104]

The potential for multiple extensions is nevertheless ameliorated by the fact that extensions of compliance deadlines and interim milestones require Los Angeles Water Board Executive Officer approval,[105] and are accordingly, subject to a 30-day public comment period.[106] The public comment period will allow all other interested persons to weigh in on the appropriateness of any requested extensions. If thereafter dissatisfied with the determination made by the Executive Officer, interested persons may additionally seek review of the Executive Officer's decision by the Los Angeles Water Board.[107] Of course, in cases where no extension

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[102] *Id.*, Part VI.C.4.c., p.56, Table 9, p. 54, Part VI.A.5.b., p. 42, Att. F, Fact Sheet, p. F-42. Under Part VI.A.5.b, "[a]ll documents submitted to the Regional Water Board Executive Officer for approval shall be made available to the public for a 30-day period to allow for public comment."

[103] *Id.*, Parts VI.C.7, p.66, VI.C.8, pp.66-67.

[104] *Id.*, Part, VI.C.8, p.67. Under another provision of the Order, Permittees may at any time request an extension of deadlines for achievement of interim milestones established to address exceedances of receiving water limitations not otherwise addressed by a TMDL. (*Id.*, Part VI.C.6.a., p.65.) (We note that the cited provision refers to "milestones established pursuant to Part VI.C.4.c.ii.(3)," but the intent appears to have been to reference Part VI.C.5.c.iii.(3).) But as we read the Los Angeles MS4 Order, extensions of not just interim deadlines for achievement of milestones but also final compliance deadlines to achieve receiving water limitations are already allowed under the adaptive management provisions of Part VI.C.8.a.ii.: "Based on the results of the adaptive management process, Permittees shall report any modifications, including where appropriate *new compliance deadlines* and interim milestones, with the exception of those compliance deadlines established in a TMDL, necessary to improve the effectiveness of the Watershed Management Program or EWMP, in the Annual Report . . . ." (Emphasis added.)

[105] *Id.*, Parts VI.C.8, p.67, VI.C.6.a., p.65. We recognize that as currently written the adaptive management provisions in effect deem any modifications to the WMPs/EWMPs approved if the Executive Officer "expresses no objections" within 60 days. (*Id.*, Part VI.C.8.a.iii., p. 67.) With our revisions, any deadline extensions must be affirmatively approved by the Executive Officer.

[106] *Id.*, Part VI.A.5.b, p. 42.

[107] *Id.*, Part VI.A.6, p.42.

is available, as with final deadlines established in TMDLs,[108] or where no extension is requested or granted, failure to meet a deadline means that the Permittee will have to comply from that time forward with the receiving water limitations or WQBELs and other TMDL-specific limitations or request a time schedule order. Therefore, Permittees cannot rely on the certainty of a deadline extension, and Permittees have a strong incentive to implement control measures that will in fact get them to compliance by the established deadline. Given that the Permittees and the Los Angeles Water Board are working with limited data regarding storm water impacts and control measure performance, especially where TMDLs have not been developed, we are hesitant to remove all flexibility for deadline extensions, and find that the Order strikes an appropriate balance.

Permittee Petitioners seek even greater flexibility under the WMP/EWMP provisions for adjusting approved control measures and time lines. They advocate for amendments that would allow a Permittee to propose alternative controls or time lines upon a demonstration that required controls for timely achievement of a limitation are either technically infeasible or otherwise constitute a substantial hardship to the Permittee. We have found above that, in the case of final deadlines set in the WMP/EWMP for achievement of receiving water limitations not otherwise addressed in a TMDL, the Los Angeles MS4 Order already provides for an opportunity to propose new deadlines through the adaptive management process. We will make a clarifying revision below to confirm that Permittees may ask for extensions in meeting receiving water limitations not addressed by a TMDL. Technical infeasibility or substantial hardship may be grounds for such a request. The Los Angeles Water Board Executive Officer, in turn, may, after allowing for public review and comment, choose to (1) extend the deadline, (2) decline the extension but approve any time schedule order requested by the Permittee, or (3) decline the extension and not approve a time schedule order, with the result that the Permittee will be out of compliance with the provision of the WMP/EWMP and therefore the receiving water limitations of Part V.A. As stated previously, interested persons may thereafter ask the Los Angeles Water Board to review the Executive Officer's determination.[109]

With regard to final deadlines for WQBELs and other TMDL-specific limitations, we will not amend the WMP/EWMP provisions to add flexibility for extensions. We find that the only option appropriately available to a Permittee unable to meet final deadlines that are set out in a TMDL and incorporated into the Los Angeles MS4 Order and the WMP/EWMPs, is to

[108] *Id.*, Part VI.C.8.a.ii., p.67.

[109] *Id.*, Part VI.A.6, p.42.

request a time schedule order, consistent with Part VI.E.2.e. of the Order, as that Part was amended in section II.B.3. above.[110]

We shall amend Part VI.C.6.a as follows:

a. Permittees may request an extension of deadlines for achievement of interim milestones **and final compliance deadlines** established pursuant to Part VI.C.4**5**.c.iii.~~(3) only~~**, with the exception of those final compliance deadlines established in a TMDL**. Permittees shall provide requests in writing at least 90 days prior to the deadline and shall include in the request the justification for the extension. Extensions ~~shall be subject to approval by~~ **must be affirmatively approved by** the Regional Water Board Executive Officer, **notwithstanding Part VI.C.8.a.iii.**

c. Rigor and Accountability in the Process

We see three additional components of the WMPs/EWMPs as essential to ensuring that the proposed WMPs/EWMPs are in fact designed to achieve receiving water limitations within the appropriate time frame.

First, as documents to be approved by either the Los Angeles Water Board or its Executive Officer, the WMPs/EWMPs are subject to a public review and comment period.[111] Such review includes consideration of proposed control measures, deadlines for achievement of final limitations, and the reasonable assurance analysis that supports the WMP/EWMP. We expect this public process to vet the proposed WMPs/EWMPs and facilitate revisions to strengthen the programs as needed, thereby providing some assurance that approved WMPs/EWMPs will achieve the water quality targets set out.

Second, the requirement for a reasonable assurance analysis in particular is designed to ensure that Permittees are choosing appropriate controls and milestones for the WMP/EWMP.[112] Competent use of the reasonable assurance analysis should facilitate achievement of final compliance within the specified deadlines.[113]

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[110] Final TMDL deadlines are established and incorporated into the Basin Plans during the TMDL development process. That process invites stakeholder participation and the proposed schedule is subject to public review and comment and approval by the relevant regional water board, the State Water Board, and USEPA. The deadlines are established with consideration of the time needed for compliance for all dischargers contributing to an impairment, including industrial and construction storm water dischargers and traditional NPDES dischargers. Although we recognize that it may not always be feasible for municipal storm water dischargers to meet final TMDL deadlines, short of amending the Basin Plan to modify the deadlines (see *California Association of Sanitation Agencies v. State Water Resources Control Board* (2012) 208 Cal.App.4th 1438), we find it appropriate for the dischargers to request time schedule orders rather than be granted an extension within the provisions of the Los Angeles MS4 Order.

[111] See Los Angeles MS4 Order, Parts VI.C.4.d., p. 57, VI.C.6, p. 65, Table 9, p.54; see also id., Part VI.A.5., p. 42.

[112] *Id.*, Part VI.C.5.b.iv.(5), pp. 63-64.

[113] We note that the Los Angeles Water Board has released guidance on the development of a reasonable assurance analysis. The guidance was released after adoption of the Los Angeles MS4 Order and accordingly is not *(Continued)*

Third, the adaptive management provisions of the Order ensure that the Permittees will evaluate monitoring data and other new information every two years and consider progress up to that point on achieving WQBELs and other TMDL-specific limitations. Permittees are required as part of the adaptive management process to propose modifications to improve the effectiveness of the WMP/EWMP and implement those modifications.[114]

While we are supportive of all of these measures, we find that they should be strengthened. As a preliminary matter, we will require the Permittees to submit specific information, concurrently with the two-year adaptive management process, that will assist the Los Angeles Water Board in determining how effective the WMP/EWMP path is in spurring the completion of on-the-ground structural control measures that lead to measurable water quality improvement. As we discuss further in Section II.B.8 of this Order, we will direct the Los Angeles Water Board to report to the State Water Board periodically on the effectiveness of the WMP/EWMP approach and expect the additional information submitted by the Permittees to inform that report.

More significantly, we will add a provision that requires Permittees to comprehensively update the reasonable assurance analysis and the WMP/EWMP, following an opportunity to implement the adaptive management process. Given the limitations inherent in models, as well as the potential incentive to choose the lowest effort and cost level predicted by the model to achieve receiving water limitations,[115] we are concerned that reliance on one initial reasonable assurance analysis is insufficient to ensure that in the long term WMPs/EWMPs will

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part of the Administrative Record. We nevertheless take this opportunity to state that we expect any revisions and updates to the guidance to be subject to a public process as part of reissuance of the Los Angeles MS4 Order.

[114] Los Angeles MS4 Order, Part VI.C.8., pp. 66-67. We add that the adaptive management process will also allow Permittees to revise their WMPs/EWMPs to take advantage of funding opportunities as they arise in the future, including funding opportunities through Assembly Bill 2403 (approved by Governor, June 28, 2014 (2013-2014 Reg. Sess.)) and Proposition 1 (approved by ballot Nov. 4, 2014). We are cognizant of criticism that the adaptive management process is just another version of the ineffective iterative process of the receiving water limitations. These arguments are misplaced. Unlike the iterative process of the receiving water limitations, the adaptive management process is only one component of a series of actions required under the WMP/EWMP and acts as a periodic check to ensure that all the other requirements are achieving the stated goals of the WMP/EWMP within clearly stated deadlines. As our discussion above makes clear, we would not endorse an alternative compliance path with the sole requirement to adaptively manage implemented control measures. Further, the adaptive management process in the Los Angeles MS4 Order differs from the iterative process in that Permittees must carry out the adaptive management process every two years, limiting any discretionary determination as to when the program must be evaluated. (Los Angeles MS4 Order, Part VI.C.8.a.)

[115] The numerical analysis methods and models approved for use by Permittees for estimating hydrologic conditions and contaminant fate and transport in the watersheds should, in principle, be able to propagate any and all known uncertainty to the outputs and results. It is in the public interest that the Los Angeles Water Board communicate this uncertainty to all stakeholders, as the results in most cases will affect the beneficial uses of California waters. Moreover, it is highly desirable that, to the extent possible, the Los Angeles Water Board define a minimum level of uncertainty (or level of confidence) acceptable for a reasonable assurance analysis to be approved.

achieve relevant water quality goals. . Currently, as stated above, the Permittees are required to implement the adaptive management process every two years from the date of program approval. Under the provision we add, the Permittees will be required to comprehensively update the reasonable assurance analysis (including potentially considering whether the model itself and its assumptions require updating) and the WMP/EWMP after several years of adaptive management, based on previous years' monitoring data and other performance measures. The Permittee will submit a full revised package to the Los Angeles Water Board Executive Officer for approval, following public review.

Given that the WMPs/EWMPs in many cases address water quality targets that are to be achieved a decade or more in the future, a periodic, complete re-consideration and recalibration of the assumptions and predictions that support the proposed control measures and implementation schedule in light of new data, above and beyond the two-year adaptive management requirements of the Los Angeles MS4 Order, is essential, notwithstanding the additional time and effort that Permittees must expend on the update. We also recognize that such review is a staff intensive process for the Los Angeles Water Board, but addressing storm water impacts is a priority for that Board. Although we expect that the update will be necessary in most cases, the new requirements provide that the Executive Officer of the Los Angeles Water Board may waive the requirement for an update if the Permittee demonstrates through water quality monitoring that the WMP/EWMP is meeting appropriate targets. Our direction to require a comprehensive update of the reasonable assurance analyses and the WMPs/EWMPs after several cycles of adaptive management should in no way be construed as limiting the Los Angeles Water Board Executive Officer's discretion to request such updates earlier in the implementation process or the obligation of the Permittees to initiate such updates earlier in the implementation process based on the ongoing adaptive management process.

The second added provision will not be relevant for the permit term of the order before us; however, we anticipate that the next iteration of an MS4 Order for the Los Angeles area will closely track the Los Angeles MS4 Order to allow for continued implementation of the WMP/EWMPs.

We shall amend Part VI.C.8 by adding new subsections a.iv. and b. as follows:

a.

iv. Permittees shall report the following information to the Regional Water Board concurrently with the reporting for the adaptive management process:

(1) On-the-ground structural control measures completed;

(2) Non-structural control measures completed;

(3) Monitoring data that evaluates the effectiveness of implemented control measures in improving water quality;

(4) Comparison of the effectiveness of the control measures to the results projected by the RAA;

(5) Comparison of control measures completed to date with control measures projected to be completed to date pursuant to the Watershed Management Program or EWMP;

(6) Control measures proposed to be completed in the next two years pursuant to the Watershed Management Program or EWMP and the schedule for completion of those control measures;

(7) Status of funding and implementation for control measures proposed to be completed in the next two years.

b. Watershed Management Program Resubmittal Process

i. In addition to adapting the Watershed Management Program or EWMP every two years as described in Part VI.C.8.a., Permittees must submit an updated Watershed Management Program or EWMP with an updated Reasonable Assurance Analysis by June 30, 2021, or sooner as directed by the Regional Water Board Executive Officer or as deemed necessary by Permittees through the Adaptive Management Process, for review and approval by the Regional Water Board Executive Officer. The updated Reasonable Assurance Analysis must incorporate both water quality data and control measure performance data, and any other information informing the two-year adaptive management process, gathered through December 31, 2020. As appropriate, the Permittees must consider any new numeric analyses or other methods developed for the reasonable assurance analysis. The updated Watershed Management Program or EWMP must comply with all provisions in Part VI.C. The Regional Water Board Executive Officer will allow a 60-day public review and comment period with an option to request a hearing. The Regional Water Board Executive Officer must approve or disapprove the updated Watershed Management Program or EWMP by June 30, 2022. The Executive Officer may waive the requirement of this provision, following a 60-day public review and comment period, if a Permittee demonstrates through water quality monitoring data that the approved Watershed Management Program or EWMP is meeting appropriate water quality targets in accordance with established deadlines.

5. Determination of Compliance with Final Requirements

a. Compliance with Final TMDL Requirements[116]

Part VI.E.2.e.i.4. of the Los Angeles MS4 Order provides that Permittees will be deemed in compliance with the final WQBELs and other TMDL-specific limitations if "[i]n drainage areas where Permittees are implementing an EWMP, (i) all non-storm water and (ii) all storm water runoff up to and including the volume equivalent to the 85th percentile, 24 hour event is retained for the drainage area tributary to the applicable receiving water."[117] Part VI.E.2.e.i.4 is one of four options available to the Permittee in Part VI.E.2.e. to be deemed in compliance with WQBELs and other TMDL-specific limitations. The other three options allow a Permittee to establish compliance with a final WQBEL or other TMDL-specific limitation by showing that (1) there are no violations of the final WQBEL; (2) there are no exceedances of the receiving water limitation for the specific pollutant in the receiving water at or downstream of the Permittee's outfall, or (3) there is no direct or indirect discharge from the Permittee's MS4 to the receiving water during any relevant time period.[118] These three options ensure that either the receiving water limitations or WQBELs and other TMDL-specific limitations are in fact being complied with. In contrast, the storm water retention approach assumes compliance with *final* WQBELs and other TMDL-specific limitations, and accordingly, compliance with the receiving water limitations in Part V for the relevant water body-pollutant combinations,[119] even if the final WQBELs and other TMDL-specific limitations are not actually being achieved. The Environmental Petitioners argue that the Los Angeles Water Board has failed to establish through findings and record evidence that the storm water retention approach will in fact achieve compliance with the WQBELs and other TMDL-specific limitations and that the Los Angeles

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[116] The Los Angeles MS4 Order additionally deems compliance with *interim* WQBELs and other TMDL-specific limitations if the "Permittee has submitted and is fully implementing an approved" WMP/EWMP. (Los Angeles MS4 Order, Part VI.E.2.d.i.(4), p. 143; see also *id.*, Part VI.C.3.a., p. 53.) Because Permittees are required to incorporate into the WMP/EWMP compliance schedules "compliance deadlines occurring within the permit term for all applicable interim . . . water quality-based effluent limitations and/or receiving water limitations in Part VI.E and Attachments L through R," we expect that in most cases full implementation of the WMP/EWMP necessarily results in compliance with interim WQBELs and other TMDL-specific limitations. However, to the extent this is not the result reached, we find that requiring implementation of the WMP/EWMP with control measures designed to achieve interim WQBELs and other TMDL-specific limitations, in lieu of showing actual compliance with any *interim* numeric requirements, is consistent with the assumptions and requirements of the wasteload allocations of the relevant TMDLs. (40 C.F.R. § 122.44(d)(1)(vii)(B).)

[117] Los Angeles MS4 Order, Part VI.E.2.e.i.(4), p. 145.

[118] *Id.*, Part VI.E.2.e.i.(1)-(3), pp. 144-45.

[119] We note again that Part VI.E.2.c.i. states that Part VI.E establishes the manner of achieving compliance with the receiving water limitations in Part V.A where the receiving water limitations are associated with water body-pollutant combinations addressed in a TMDL.

MS4 Order's reliance on the storm water retention approach for final compliance determination is therefore contrary to the law.

We are supportive of the EWMP's use of the storm water retention approach as a technical requirement. Retention of storm water is likely to be an effective path to water quality improvement. Furthermore, in addition to preventing pollutants from reaching the receiving water except as a result of high precipitation events (which also generally result in significant dilution in the receiving water), the storm water retention approach has additional benefits including recharge of groundwater, increased water supply, reduced hydromodification effects, and creation of more green space to support recreation and habitat.[120]

We have some concerns, however, with the lack of verification in the Los Angeles MS4 Order that final WQBELs and other TMDL-specific limitations or receiving water limitations will in fact be met as a result of implementation of the storm water retention approach. We acknowledge that, in most cases, the final TMDLs have deadlines outside of the permit term for the Los Angeles MS4 Order and that, therefore, with regard to those, our concerns are more theoretical at this point than immediate. Nevertheless, we agree with the Environmental Petitioners that the evidence in the Administrative Record is not sufficient to establish that the storm water retention approach will in all cases result in achievement of final WQBELs and other TMDL-specific limitations and, more importantly, are concerned that the Order itself does not incorporate clear requirements that would provide for such verification in the process of implementation.

With regard to evidence in the Administrative Record, it is clear that the storm water retention approach is a promising approach for achieving compliance with receiving water limitations, with multiple additional environmental benefits. But the research regarding the storm water retention approach is still in early stages and we cannot say with certainty at this point that implementation will lead to compliance with receiving water limitations in all cases.[121]

With that conclusion in mind, we look to the Los Angeles MS4 Order itself to determine if there are sufficient additional provisions to assure that, in the long run, the storm water retention approach will achieve the ultimate goal of compliance with receiving water limitations. We first note that the Order does not require a reasonable assurance analysis when

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[120] See e.g. Administrative Record, section 10.VI.C, RB-AR29263-29311, RB-AR32318-32350.

[121] We reviewed the citations to the Administrative Record provided in the Los Angeles Water Board October 15, 2013 Response and in the October 15, 2013 Responses of many of the Petitioners. We find that the cited studies show the storm water retention to be a promising approach to meeting water quality standards, but do not establish, at a sufficiently high level of confidence, that the storm water retention approach will definitively achieve compliance with the receiving water limitations.

a Permittee opts for the storm water retention approach. Permittees are required to conduct a reasonable assurance analysis for each water body-pollutant combination addressed by a WMP, with the objective of demonstrating the ability of the controls to ensure that MS4 discharges achieve applicable WQBELs and do not cause or contribute to exceedances of receiving water limitations.[122] The relevant provisions reference EWMPs, but elsewhere the Order states that the reasonable assurance analysis is only required for areas covered by the EWMP where retention of the 85th percentile, 24-hour storm event is not feasible.[123] The Fact Sheet also implies that the requirement for a reasonable assurance analysis is confined to situations where the storm water retention approach is not feasible.[124] In sum, then, Permittees that choose to develop and implement an EWMP are required to conduct a reasonable assurance analysis for each waterbody-pollutant combination addressed by the EWMP, except in the drainage areas that are tributary to the storm water retention projects.

The fact that the storm water retention approach does not require a reasonable assurance analysis prior to implementation to demonstrate the ability of the approach to achieve compliance with the limitations is mitigated in part by required monitoring and adaptive management to verify compliance following implementation. Although the provision could be clearer, we read the language "[i]n drainage areas where Permittees are implementing an EWMP" in Part VI.E.2.e.i.(4) to require Permittees to be in compliance with all aspects of the EWMP, including the monitoring and adaptive management provisions of Parts VI.C.7 and 8, to be deemed in compliance with final limitations through the storm water retention approach. As we read the Order, a Permittee's showing that it has retained all non-storm water and all storm water up to and including the volume equivalent to the 85th percentile, 24-hour event, establishes compliance, but only if the Permittee continues to conduct monitoring and adapt the EWMP in response to the monitoring. The Los Angeles Water Board appears to read the Order the way we do, as it states in its October 15, 2013 Response that "the Permit requires monitoring and adaptive management, which will continue to inform the Los Angeles Water Board regarding the efficacy of this storm water retention approach in conjunction with implementation of the other storm water management program elements and any needed

[122] Los Angeles MS4 Order, Part VI.C.5.b.iv.(5), pp. 63-64.

[123] *Id.*, Part VI.C.1.g., p. 48.

[124] *Id.*, Att. F, Fact Sheet, p. F-39.

modifications to the approach."[125] The Los Angeles Water Board further states in comments submitted on a draft of this order, as follows:

> The Los Angeles MS4 Order does not exclude EWMPs or areas within an EWMP where the stormwater retention standard is achieved from the integrated watershed monitoring, assessment and adaptive management processes. Neither does the Los Angeles MS4 Order specify or contemplate an end to the monitoring, assessment and adaptive management processes in the case of a Watershed Management Program (WMP) or EWMP. These required elements, including receiving water and outfall monitoring, evaluation of these monitoring data, and modification of the EWMP to improve its effectiveness, will be continually conducted throughout the Watershed Management Area addressed by the EWMP. . . . The Los Angeles Water Board understood that these regional multi-benefit projects would take time to implement and that Permittees needed to be afforded this time in the Los Angeles MS4 Order. The Los Angeles Water Board will continually evaluate progress during the implementation period. If, as full implementation nears, some Receiving Water Limitations are still not achieved, the Los Angeles Water Board and State Water Board have a variety of tools that can be used at a regional or statewide level including reconsideration of TMDLs, Basin Planning actions, policy development and permitting, among others.[126]

We will make a revision to Part VI.E.2.e.i. to make it clear that the Permittee must be in compliance with all other requirements of the EWMP in addition to implementation of the storm water retention approach in order to be deemed in compliance with the final WQBELs and other TMDL-specific limitations.

With no definitive evidence in the record establishing that the storm water retention approach will achieve final requirements, no reasonable assurance analysis required at the outset, and reliance only on subsequent monitoring and adaptive management to improve results if final limitations are not in fact achieved, the storm water retention approach does not provide a level of assurance of success that would lead us to conclude that its implementation, with nothing else, is sufficient to constitute compliance with final WQBELs and other TMDL-specific limitations. We understand that there are nevertheless very good reasons to encourage its use. Certainly for all non-storm water and for all storm water generated in storms up to the 85th percentile storm, the storm water retention approach achieves compliance because there is no discharge. And there are significant benefits beyond water quality, including most importantly benefits to water supply. We also believe that public projects requiring investment of this magnitude are unlikely to be carried out without a commitment from the water boards that Permittees will be considered in compliance even if the resulting improvement in water quality

[125] Los Angeles Water Board, October 15, 2013 Response, p. 62.

[126] Los Angeles Water Board, Comment Letter, January 21, 2015, pp. 2-3.

does not rise all the way to complete achievement of the final WQBELs and other TMDL-specific limitations.

We are not willing to go as far as saying that compliance with the storm water retention approach alone constitutes compliance with final WQBELs and other TMDL-specific limitations for all time, regardless of the actual results.[127] Nonetheless, we anticipate that implementation of such projects will bring the drainage area most and, in many cases, all of the way to achievement of water quality standards. Where there is still a gap in required water quality improvement, we expect the Executive Officer of the Los Angeles Water Board to require appropriate actions, consistent with the provisions of the Los Angeles MS4 Order and the Los Angeles Water Board's stated interpretation of those provisions,[128] to close that gap with additional control measures in order for the Permittee to be considered in compliance with the WQBEL or other TMDL-specific limitation. There are various mechanisms to provide assurances that additional control measures will be implemented to achieve the WQBEL or other TMDL-specific limitation, and in some instances, it may be appropriate for the Los Angeles Water Board to issue a time schedule order governing the implementation of further control measures. Further, as acknowledged by the Los Angeles Water Board in its comments, in some circumstances, reconsideration of the underlying TMDLs and the final deadlines within those TMDLs may instead be warranted.[129] We additionally recognize that municipal storm water management is an area of continued development and, with continued research and data evaluation, water quality standards may evolve and become more nuanced or sophisticated over time.

While we decline to interpret the storm water retention approach to, in and of itself, constitute compliance with final WQBELs and other TMDL-specific limitations, we emphasize here that any additional control measures to reach compliance that may be required by the Los Angeles Water Board must not require changes to installed storm water retention projects. Any revisions should be prospective in nature and should not disturb projects that Permittees have already installed in good faith to comply with the provisions of their EWMP.

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[127] Further, Permittees still have substantial incentive to develop and implement an EWMP. If a permittee pursues an EWMP, it will be deemed in compliance with the receiving water limitations during the EWMP development phase, and it may also recognize significant non-water quality benefits.

[128] Los Angeles Water Board, Comment Letter, January 21, 2015, pp. 2-3. As explained in footnote 110, at this time we see limited options available to the Los Angeles Water Board in addressing compliance with final deadlines for WQBELs and other TMDL-specific limitations.

[129] We also acknowledge the need for and commit to supporting state-wide solutions for source reduction as appropriate, similar to the brake pad legislation adopted to address copper discharges. (Senate Bill 346 (approved by the Governor September 27, 2010).)

Ultimately, we must set out to verify through appropriate monitoring that final WQBELs and other TMDL-specific limitations can be achieved through the storm water retention approach, or be willing to revise that approach. However, new or additional measures required at that point should be additive to the storm water retention approach measures already installed.

In sum, despite the uncertainty inherent in allowing the storm water retention approach, we concur in its use in the Los Angeles MS4 Order, with the clarification that ultimate compliance is subject to continued planning, monitoring and adaptive management. We shall amend Part VI.E.2.e.i. as follows:

> i. A Permittee shall be deemed in compliance with an applicable final water quality-based effluent limitation and final receiving water limitation for the pollutant(s) associated with a specific TMDL if any of the following is demonstrated:
>
> . . .
>
> (4) In drainage areas where Permittees are implementing an EWMP, (i) all non-storm water and (ii) all storm water runoff up to and including the volume equivalent to the 85th percentile, 24 hour event is retained for the drainage area tributary to the applicable receiving water**, and the Permittee is implementing all requirements of the EWMP, including, but not limited to, Parts VI.C.7 and VI.C.8 of this Order**. This provision (4) shall not apply to final trash WQBELs.

b. Compliance with Final Receiving Water Limitations

The Los Angeles MS4 Order states that for receiving water limitations associated with water-body pollutant combinations addressed in a TMDL, compliance with the TMDL requirements of the Order in Part VI.E and Attachments L through R constitutes compliance with the receiving water limitations in Part V.A.[130] In other words, if there is an exceedance for a pollutant in a water body that has a TMDL addressing that pollutant, as long as the Permittee is complying with the requirements for the TMDL, the Permittee is deemed in compliance with the receiving water limitation. No petitioner has contested this provision and we find that it constitutes an appropriate approach to compliance with receiving water limitations for water body-pollutant combinations that are addressed by a TMDL.

For exceedances of receiving water limitations for a water body-pollutant combination not addressed by a TMDL, as previously discussed, the Permittee must either incorporate control measures to address the exceedances into the Permittee's WMP/EWMP or comply directly with the receiving water limitations provisions of Part V.A of the Order. For

[130] Los Angeles MS4 Order, Part VI.E.2.c.ii., p. 143.

Permittees that choose the WMP/EWMP approach, the WMP/EWMP must incorporate "a final date for achieving the receiving water limitation."[131] To the extent the Permittee does not achieve the limitation by that final date and does not request and receive an extension, the Permittee has "fail[ed] to meet [a] requirement or date for its achievement in an approved Watershed Management Program or EWMP"[132] and is immediately subject to the receiving water limitations provisions of the Order, with the same result that it is out of compliance. In other words, implementation of non-structural and structural control measures in accordance with the timelines established in the WMP/EWMP constitutes compliance with the receiving water limitations up until the final deadline for achievement of the relevant receiving water limitation; however, at the deadline for final compliance, there must be verification of achievement based on the receiving water limitation itself. While we find that the Order provisions lead to this result as written, for the sake of greater clarity, we will specifically state that final compliance with receiving water limitations must be determined through verification that the receiving water limitation is actually being achieved.

We shall amend Part VI.C.2.c. as follows:

c. If a Permittee fails to meet any requirement or date for its achievement in an approved Watershed Management Program or EWMP, the Permittee shall be subject to the provisions of Part V.A. for the waterbody-pollutant combination(s) that were to be addressed by the requirement. **For water body-pollutant combinations that are not addressed by a TMDL, final compliance with receiving water limitations is determined by verification through monitoring that the receiving water limitation provisions in Part V.A.1 and 2 have been achieved.**

c. Compliance with the Non-Storm Water Discharge Prohibition

The Environmental Petitioners suggest that the Los Angeles MS4 Order is unclear as to whether compliance with the WMP/EWMP may also constitute compliance with the non-storm water discharge prohibition of the Order. We disagree that the Los Angeles MS4 Order is unclear on this issue. The Permittees' obligation to comply with the receiving water limitations and WQBELs and other TMDL-specific limitations in Parts V.A and VI.E is independent of the Permittees' obligation to comply with the effective prohibition of non-storm water discharges in Part III.A. The several provisions stating that Permittees will be deemed to be in compliance with the receiving water limitations of the Los Angeles MS4 Order for implementing the WMP/EWMP specifically reference Parts V.A and VI.E of the Order and not

[131] *Id.*, Part VI.C.5.c.iii.(3)(b), p. 65.

[132] *Id.*, Part VI.C.2.c., p. 52.

III.A.[133] This notwithstanding, Parts VI.C.1.d and VI.C.5.b.iv.(2) require that a Permittee's WMP/EWMP include program elements and control measures to effectively prohibit non-storm water discharges consistent with Part III.A and Part VI.D.4.d or VI.D.10. Therefore, a Permittee's implementation of program elements and control measures consistent with Part III.A and Part VI.D.4.d or VI.D.10, through its approved WMP/EWMP, may provide a mechanism for compliance with Part III.A. Although we accordingly see no need to direct revisions to the Order, we provide this clarification here to respond to the Environmental Petitioners' concern and address any confusion that may exist.

6. "Safe Harbor" During the Planning Phase for the WMP/EWMP

Under the Los Angeles MS4 Order, a Permittee that has declared its intention to develop a WMP/EWMP is deemed in compliance with the receiving water limitations and with interim WQBELs with due dates prior to approval of the WMP/EWMP for the water body-pollutant combinations the WMP/EWMP addresses, provided it meets certain conditions, even though the Permittee is developing, not implementing the WMP/EWMP. Specifically, the Permittee is deemed in compliance if the Permittee (1) provides timely notice of its intent to develop a WMP/EWMP; (2) meets all interim and final deadlines for development of a WMP/EWMP; (3) targets implementation of watershed control measures in the existing program

[133] Los Angeles MS4 Order, Parts VI.C.2.b., p. 52, VI.C.3.a., p. 53, VI.E.2.c.ii., p. 143, VI.C. 2.d., pp. 52-53, VI.E.2.d.i.(4)(d), p. 144. To the extent that a non-storm water discharge authorized by Part III.A may be causing or contributing to an exceedance of receiving water limitations in V.A, compliance with the WMP/EWMP provisions would constitute compliance with the receiving water limitations and any relevant interim WQBELs and other TMDL-specific limitations, as long as the WMP/EWMP addresses the water body-pollutant combination for that water body. However, the discharger would have to additionally comply with requirements in Part III.A. and Part VI.D.4.d or VI.D.10 through its approved WMP/EWMP for conditionally exempt non-storm water discharges that are found to cause or contribute to an exceedance in the receiving water. (See *id.*, Part III.A.4.c.-e., pp. 31-32.) We disagree that every discharge from a Permittee's MS4 to the receiving water of non-storm water that is not specifically authorized under Part III.A will necessarily be subject to enforcement under the Los Angeles MS4 Order. Section 402(p)(3)(B)(ii) of the Clean Water Act imposes a requirement to "effectively prohibit" non-storm water discharges. Part III.A of the Los Angeles MS4 Order effectuates that requirement with a requirement for the Permittee to prohibit non-storm water discharges: "Each Permittee shall, for the portion of the MS4 for which it is an owner or operator, prohibit non-storm water discharges through the MS4 to receiving waters, except where such discharges are . . . [listing exceptions]." (Los Angeles MS4 Order, Part III.A.1, p. 27.) The Los Angeles MS4 Order incorporates a specific and detailed programmatic requirement – the Illicit Connections and Illicit Discharges Elimination Program – for the Permittees to achieve their obligation to effectively prohibit non-storm water discharges. (Los Angeles MS4 Order, Parts VI.D.4.d., pp. 81-86, VI.D.10, pp. 137-141.) We recognize that even the most comprehensive efforts to address unauthorized non-storm water discharges may not eliminate all such discharges. Where a Permittee is fully implementing its Illicit Connections and Illicit Discharges Elimination Program, either pursuant to Parts VI.D.4.d. or VI.D.10, or by incorporation of customized actions into a WMP/EWMP as approved by the Los Angeles Water Board (see Los Angeles MS4 Order Part VI.D.1.a., p. 67), we would expect any enforcement action under Part III.A to be supported by a fact-specific analysis of the nature and source of the unauthorized non-storm water discharge and the efforts of the Permittee to prohibit the discharge.

to address known contributions of pollutants; and (4) receives approval of the WMP/EWMP within the specified time periods.[134]

The Environmental Petitioners object to the availability of a "safe harbor" during the planning phase. We disagree with the Environmental Petitioners that providing a "safe harbor" in the planning phase is disallowed by applicable law -- see our discussion of anti-backsliding requirements in section II.B.1. and antidegradation requirements in section II.B.2. However, we understand that deeming a discharger in compliance with receiving water limitations during the planning phase, not just the implementation phase, could weaken the incentive for Permittees to efficiently and timely seek approval of a WMP/EWMP and to move on to implementation. It is the implementation of the WMP/EWMP that will in fact lead to progress toward compliance with receiving water limitations; the planning phase is essential, but should be only as long as necessary for a well-planned program with carefully analyzed controls to be developed. Given the significance of the water quality issues addressed by the WMP/EWMPs, it is paramount that implementation begin as soon as feasible. Accordingly, the "safe harbor" in the planning phase is appropriate only if it is clearly constrained in a manner that sustains incentives to move on to approval and implementation and is structured with clear, enforceable provisions.

Having reviewed the planning sections of the WMP/EWMP provisions carefully, we find that the Los Angeles MS4 Order does sufficiently constrain the planning phase, so that the "safe harbor" provided is not unreasonable. As already stated, compliance is deemed only if the Permittee is meeting the relevant deadlines for development and approval of the WMP/EWMP.[135] There are no provisions in the Order that allow for extensions to these deadlines. If a Permittee fails to obtain approval within the allowed number of months for the development of a WMP/EWMP, the Order states that the Permittee must then instead demonstrate actual compliance with receiving water limitations and with applicable interim WQBELs.[136] The Los Angeles MS4 Order is also clear that achievement of any TMDL-associated final deadlines occurring prior to the approval deadlines for the WMP/EWMP cannot be excused through commitment to planning for a WMP/EWMP.[137]

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[134] *Id.*, Parts VI.C.2.d., p. 52, VI.C.3.b., p. 53, VI.E.2.d.i.(4)(d), p. 144.

[135] *Id.*, Parts VI.C.2.d., p. 52, VI.C.3.b., p. 53, VI.E.2.d.i.(4)(d), p. 144.

[136] *Id.*, Part VI.C.4.e., p. 58.

[137] *Id.*, Parts VI.C.3.c., p. 53, VI.C.4.d.iii, p. 58. Under Part VI.C.4.d.iii., Permittees must ensure that MS4 discharges achieve compliance with interim, in addition to final, trash WQBELs during the planning phase.

Further, Permittees are subject to a number of conditions during the planning phase that will ensure that progress toward achievement of receiving water limitations is not put on hold pending approval of the plan. These include requirements to put in place Low Impact Development (LID) ordinances and green streets policies[138] and to continue to implement watershed control measures in the existing storm water management programs, including those to eliminate non-storm water discharges,[139] but in a manner that is targeted to address known pollutants.[140]

Given the clear, enforceable requirements limiting the planning phase of the WMP/EWMP provisions, we find that the Los Angeles MS4 Order's inclusion of provisions deeming compliance with the receiving water limitations and with interim WQBELs during development of the programs is reasonable.

In fact, we are concerned that the Los Angeles Water Board has left no room for any deviation from the prescribed development schedule for WMP/EWMPs. A Permittee working in good faith to develop a WMP/EWMP over multiple months may encounter an issue that requires it to ask for a short extension on an interim or final deadline. Under such circumstances, the Los Angeles Water Board should be able to consider the request for the extension, rather than have its hands tied and have to reject a WMP/EWMP based on lack of timeliness. We will add a provision to the Order that provides the Los Angeles Water Board or its Executive Officer discretion in granting such extensions, but the Permittee will not be deemed in compliance with the applicable receiving water limitations and WQBELs during the period of the extension.

We shall add a new Part VI.C.4.g. as follows:

g. Permittees may request an extension of the deadlines for notification of intent to develop a Watershed Management Program or EWMP, submission of a draft plan, and submission of a final plan. The extension is subject to approval by the Regional Water Board or the Executive Officer. Permittees that are granted an extension for any deadlines for development of the WMP/EWMP shall be subject to the baseline requirements in Part VI.D and shall demonstrate compliance with receiving water limitations pursuant to Part V.A. and with applicable interim water quality-based effluent limitations in Part VI.E pursuant to subparts VI.E.2.d.i.(1)-(3) until the Permittee has an approved WMP/EWMP in place.

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[138] *Id.*, Part VI.C.4.c., pp. 56-57.

[139] *Id.*, Part VI.C.4.d.i.-ii., pp. 57-58.

[140] *Id.*, Parts VI.C.2.d.iii., pp. 52-53, VI.C.3.b.iii., p. 53, VI.E.2.d.i.(4)(d)(3), p. 144.

7. Conclusion

In conclusion, we uphold the WMP/EWMP provisions as a reasonable alternative compliance option for meeting receiving water limitations and uphold the WMP/EWMP provisions in all other aspects, except as specifically stated above. We find that the WMP/EWMP approach is a clearly defined, implementable, and enforceable alternative to the receiving water limitations provisions that we mandated in Order WQ 99-05, and that the alternative provides Permittees an ambitious, yet achievable, path forward for steady and efficient progress toward achievement of those limitations while remaining in compliance with the terms of the permit.

We direct all regional water boards to consider the WMP/EWMP approach to receiving water limitations compliance when issuing Phase I MS4 permits going forward.[141] In doing so, we acknowledge that regional differences may dictate a variation on the WMP/EWMP approach, but believe that such variations must nevertheless be guided by a few principles.[142] We expect the regional water boards to follow these principles unless a regional water board makes a specific showing that application of a given principle is not appropriate for region-specific or permit-specific reasons.

1. The receiving water limitations provisions of Phase I MS4 permits should continue to require compliance with water quality standards in the receiving water and should not deem good faith engagement in the iterative process to constitute such compliance. The Phase I MS4 permits should therefore continue to use the receiving water limitations provisions as directed by State Water Board Order WQ 99-05.

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[141] We acknowledge that small MS4s permitted under the statewide General Permit for WDRs for Storm Water Discharges from Small MS4s (Order No. 2013-0001-DWQ) (General Phase II MS4 Permit) have similar practical issues as Phase I permittees in complying with receiving water limitations. Nevertheless, because the General Phase II MS4 Permit is issued by the State Water Board, not the regional water boards, we limit our guidance to regional water boards to the Phase I permits. The State Water Board is committed to working with small MS4s, the regional water boards, and interested persons in developing an alternative compliance option for the General Phase II MS4 Permit.

[142] In considering appropriate guidance for regional water boards drafting alternative compliance paths in municipal storm water permits, we have reviewed the proposed "strategic compliance program" model language that was submitted by the California Stormwater Quality Association (CASQA) and supported in whole or in part by a number of interested persons. (CASQA August 15, 2013 Receiving Water Limitations Submission, Attachment A, Section E.) While we have not in these proceedings adopted the CASQA language, or, for that matter, any specific language, for alternative compliance path provisions, regional water boards remain free to consider and incorporate the CASQA approach into their municipal storm water permits to the extent they determine and document that the approach, including any modifications, satisfies the principles we set out in this section as well as all other direction we have provided in this order.

2. The Phase I MS4 permits should include a provision stating that, for water body-pollutant combinations with a TMDL, full compliance with the requirements of the TMDL constitutes compliance with the receiving water limitations for that water body-pollutant combination.
3. The Phase I MS4 permits should incorporate an ambitious, rigorous, and transparent alternative compliance path that allows permittees appropriate time to come into compliance with receiving water limitations without being in violation of the receiving water limitations during full implementation of the compliance alternative.
4. The alternative compliance path should encourage watershed-based approaches, address multiple contaminants, and incorporate TMDL requirements.
5. The alternative compliance path should encourage the use of green infrastructure and the adoption of low impact development principles.
6. The alternative compliance path should encourage multi-benefit regional projects that capture, infiltrate, and reuse storm water and support a local sustainable water supply.
7. The alternative compliance path should have rigor and accountability. Permittees should be required, through a transparent process, to show that they have analyzed the water quality issues in the watershed, prioritized those issues, and proposed appropriate solutions. Permittees should be further required, again through a transparent process, to monitor the results and return to their analysis to verify assumptions and update the solutions. Permittees should be required to conduct this type of adaptive management on their own initiative without waiting for direction from the regional water board.

8. Direction to the Los Angeles Water Board to Report to the State Water Board on Implementation

We recognize that our review has been limited to the provisions of the Los Angeles MS4 Order. The success of the WMP/EWMP approach depends in large part on the steps that follow adoption of these provisions, i.e., the effort invested by Permittees in developing WMPs/EWMPs that truly address the stringent provisions of the Order, the precision with which the Los Angeles Water Board reviews the draft programs and requires revisions, and, most importantly, the actual implementation and appropriate enforcement of the programs once approved. The work going forward must ensure that the WMPs/EWMPs in fact exhibit the rigor and accountability the provisions of the Los Angeles MS4 Order demand. We expect that the Los Angeles Water Board will make careful oversight and enforcement a priority and that they will be aided in this process by the public review and comment opportunities built into the terms of the Order.

The process of developing the WMPs/EWMPs is currently ongoing -- the Los Angeles Water Board has been reviewing draft and revised draft WMPs and workplans for EWMPs – and, although we have been asked by the Environmental Petitioners to take official notice of some of the submissions and conditional approvals in the process, it is premature for the State Water Board to speak to the sufficiency of the resulting WMPs/EWMPs until the Los Angeles Water Board, with full input from the stakeholders, has had the opportunity to consider, revise, and finally approve the programs. We note again that all documents submitted to the Los Angeles Water Board Executive Officer for approval are subject to a 30-day public comment period[143] and that any formal determination or approval by the Executive Officer may be reviewed by the Los Angeles Water Board upon request by an interested person.[144] And an interested person may petition the State Water Board to review an action or failure to act of the Los Angeles Water Board.[145]

Once the WMPs/EWMPs are approved, ensuring that they are diligently and timely implemented must remain a top priority for the Los Angeles Water Board. We expect that the Los Angeles Water Board will continue to work cooperatively and closely with the Permittees, the Environmental Petitioners, and other interested persons in this process, but that the Board will also use its enforcement authority to ensure that appropriate progress is made toward water quality goals. We intend to remain involved in this process, as we must learn statewide from the successes and shortcomings of the approach we are endorsing with this order. We accordingly direct the Los Angeles Water Board to report to us on progress in implementation of the WMPs/EWMPs, and progress in improving water quality during this and the next permit term by February 28, 2018, by February 29, 2020, and by March 31, 2022. Specifically, we ask that the Los Angeles Water Board report on region-wide data for the following:

- On-the-ground structural control measures completed;
- Non-structural control measures completed;
- Monitoring data that evaluates the effectiveness of implemented control measures in improving water quality;

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[143] Los Angeles MS4 Order, Part V.A.5.b, p. 42.

[144] *Id.*, Part V.A.6, p. 42.

[145] Wat. Code, § 13320. On April 28, 2015, the Executive Officer of the Los Angeles Water Board conditionally approved several submitted WMPs. On May 28, 2015, the Environmental Petitioners filed a petition challenging the conditional approvals and requesting review by the Los Angeles Water Board and by the State Water Board of the Executive Officer's determination.

- Comparison of the effectiveness of the control measures to the results projected by the reasonable assurance analyses;
- Comparison of control measures completed to date with control measures projected to be completed to date pursuant to the WMPs/EWMPs;
- Control measures proposed to be completed in the next two years pursuant to the WMPs/EWMPs and the schedule for completion of those control measures;
- Status of funding and implementation for control measures proposed to be completed in the next two years;
- Trends in receiving water quality related to pollutants typically associated with storm water;
- Available permit compliance data, including requests for compliance extensions;
- Enforcement actions taken and results.

In addition to covering the above information, the third report shall summarize and reflect the comprehensive information gathered through the updates of the reasonable assurance analyses and WMPs/EWMPs conducted by the Permittees in the second permit term.

C. Appropriateness of TMDL Requirements

Section 303(d) of the Clean Water Act requires the water boards to identify impaired water bodies that do not meet water quality standards after applying required technology-based effluent limitations.[146] TMDLs are developed by either the regional water boards or by USEPA in response to section 303(d) listings of impaired water bodies. A TMDL is defined as the sum of the individual wasteload allocations for point sources of pollution, the load allocations for nonpoint sources of pollution, and the contribution from background sources of pollution,[147] and represents the maximum amount of a pollutant that a water body may receive and still achieve water quality standards. TMDLs developed by regional water boards include implementation provisions[148] and are typically incorporated into the regional water board's water quality control plan.[149] TMDLs developed by USEPA typically contain the total load and load allocations required by section 303(d), but do not set out comprehensive implementation provisions.[150] Most TMDLs are not self-executing, but instead rely upon subsequently-issued permits to impose requirements on discharges that implement the TMDLs' wasteload

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[146] 33 U.S.C. § 1313(d).

[147] 40 C.F.R. § 130.2(i).

[148] Wat. Code, §§ 13050, subd. (j), 13242.

[149] See 40 C.F.R. §§ 130.6(c)(1).

[150] *Am. Farm Bureau Fed'n v. U.S. E.P.A.* (M.D. Pa. 2013) 984 F. Supp. 2d 289, 314.

allocations.[151] The Los Angeles MS4 Order includes TMDL-specific requirements that implement 33 TMDLs (twenty-five adopted by the Los Angeles Water Board, seven established by USEPA, and one adopted by the Santa Ana Regional Water Quality Control Board that assigned requirements to two Permittees of the Los Angeles MS4 Order) in Part VI.E and in Attachments L-R.

Petitioners raise a number of challenges to the TMDL-based requirements of the Los Angeles MS4 Order. We take up several of those arguments in this section.[152]

1. Inclusion of Numeric WQBELs

Permittee Petitioners argue that the numeric WQBELs incorporated into the Los Angeles MS4 Order as TMDL-based limitations are contrary to the Clean Water Act and to state law and policy. We disagree.

Under the federal regulations implementing the Clean Water Act, effluent limitations in NPDES permits developed to achieve water quality standards must be consistent with the assumptions and requirements of any available wasteload allocation for the discharge.[153] In addition, the Porter-Cologne Act requires that waste discharge requirements implement any relevant water quality control plans,[154] including TMDL requirements that have been incorporated into the water quality control plans. The Los Angeles MS4 Order incorporates numeric WQBELs and other limitations that the Los Angeles Water Board found are consistent with the TMDL requirements applicable to the Permittees.

Permittee Petitioners argue that there is no requirement under federal law for incorporation of TMDL requirements into an MS4 permit and that the inclusion of the requirements in Part VI.E and in Attachments L-R was therefore at the discretion of the Los Angeles Water Board. They point out, as we acknowledged in section II.A, that MS4 discharges must meet a technology-based standard of prohibiting non-storm water discharges and reducing pollutants in the discharge to the MEP, but that requirements to strictly meet water quality standards are at the discretion of the permitting agency.[155] Because TMDL requirements are a path to achieving water quality standards, the Permittee Petitioners argue, the Los Angeles Water Board had the discretion not to include them in the Los Angeles MS4 Order.

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[151] *City of Arcadia v. EPA* (N.D. Cal. 2013) 265 F.Supp.2d 1142, 1144-1145.

[152] We note that we do not take up any arguments that challenge the terms of the TMDLs. Those arguments should have been made during the public process when the TMDLs were adopted. They are untimely now.

[153] 40 C.F.R. § 122.44(d)(1)(vii)(B).

[154] Wat. Code, § 13263, subd. (a).

[155] 33 U.S.C. § 1342(p); *Defenders of Wildlife*, *supra*, 191 F.3d 1159.

Answering the question of whether the Los Angeles Water Board was required under federal law to strictly effectuate TMDL compliance through the Los Angeles MS4 Order is a largely irrelevant exercise because we have already reaffirmed in this order that we will continue to require water quality standards compliance in MS4 permits. Further, given the back-stop nature of TMDLs, and the fact that each set of dischargers must meet their share of the allocation to reach the total reductions set out, a regime in which municipal storm water dischargers were given a pass on TMDL obligations would render the promise of water quality standards achievement through TMDLs illusory. This is especially true in a large urbanized area where pollutants in storm water constitute a significant share of the impairment and where other dischargers would be disproportionately burdened if MS4s were not held to their allocations. Although not dispositive, we also note that USEPA has assumed in guidance (discussed in more detail below) issued on storm water and TMDL implementation that MS4 permits must incorporate effluent limitations consistent with the assumptions and requirements of relevant wasteload allocations.[156] To the extent the TMDL provisions of the Clean Water Act and the federal regulations could be read to preclude mandatory incorporation of wasteload allocations into an MS4 permit, effluent limitations consistent with those load allocations should nevertheless be required under Clean Water Act section 402, subsection (p)'s direction that the MS4 permit shall require "such other controls" as the permitting authority determines "appropriate for the control of such pollutants."[157] Finally, for TMDLs incorporated into water quality control plans, the implementation plan associated with the TMDL applies to all dischargers named, including MS4 permittees, and the MS4 permits must be consistent with the direction in the water quality control plan.[158]

Having found that the Los Angeles Water Board acted in a manner consistent with federal and state law when it developed WQBELs to address applicable TMDLs, we next turn to whether *numeric* WQBELs were appropriate. We find that the Los Angeles Water Board

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[156] USEPA, Memorandum, "Establishing Total Maximum Daily Load Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs," (Nov. 22, 2002) (2002 USEPA Memorandum); see also USEPA, Memorandum, "Revisions to the November 22, 2002 Memorandum 'Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs,' " (Nov. 26, 2014) (2014 USEPA Memorandum). The 2014 USEPA Memorandum replaced a memorandum with the same title issued on November 12, 2010, which was subsequently opened to public comment. (USEPA Statement (March 17, 2011), available at <http://water.epa.gov/polwaste/npdes/stormwater/upload/sw_tmdlwla_comments.pdf> (as of Nov. 18, 2014).)

[157] 33 U.S.C. § 1342(p)(3)(B)(iii). See, e.g., State Water Board Orders WQ 91-03, WQ 91-04, WQ 98-01, WQ 99-05, WQ 2001-15.

[158] Wat. Code, § 13263, subd. (a); see also *State Water Res. Control Bd. Cases* (2006) 136 Cal. App. 4th 674, 730 (noting the obligation of the water boards to follow the program of implementation included in a water quality control plan).

acted within its legal authority when establishing numeric WQBELs, and further that its choice of numeric WQBELs was a reasonable exercise of its policy discretion.

In the context of MS4 discharges, effluent limitations in NPDES permits may be expressed in the form of either numeric limitations or best management practices (BMPs). The federal regulations specifically state that BMP-based effluent limitations may be used to control pollutants for storm water discharges.[159] USEPA has issued two memoranda, on November 22, 2002 (2002 USEPA Memorandum), and on November 26, 2014 (2014 USEPA Memorandum), providing guidance to the states on translating wasteload allocations for storm water into effluent limitations in NPDES Permits.[160] The 2002 USEPA Memorandum contemplated that "the NPDES permitting authority will review the information provided by the TMDL . . . and determine whether the effluent limit is appropriately expressed using a BMP approach (including an iterative BMP approach) or a numeric limit."[161] The 2002 USEPA Memorandum further stated that "EPA expects that most WQBELs for NPDES-regulated municipal . . . storm water discharges will be in the form of BMPs, and that numeric limits will be used only in rare instances."[162] The 2014 USEPA Memorandum, after noting the increased information available to the permitting agencies after more than a decade of experience with setting wasteload allocations and effluent limitations, explained that:

> Where the TMDL includes WLAs for stormwater sources that provide numeric pollutant loads, the WLA should, where feasible, be translated into effective, measurable WQBELs that will achieve this objective. This could take the form of a numeric limit, or of a measurable, objective BMP-based limit that is projected to achieve the WLA. . . . The permitting authority's decision as to how to express the WQBEL(s), either as numeric effluent limitations or as BMPs, with clear, specific, and measurable elements, should be based on an analysis of the specific facts and circumstances surrounding the permit, and/or the underlying

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[159] 40 C.F.R. § 122.44(k)(2); see also 33 U.S.C. § 1342(p)(3)(B)(iii). 40 Code of Federal Regulations section 122.44(k)(3) further contemplates that BMP-based effluent limitations are appropriate where it is infeasible to develop a numeric effluent limitation.

[160] 2002 USEPA Memorandum; 2014 USEPA Memorandum. In addition to the two memoranda, USEPA published guidance titled "Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits" ((Sept. 1996) 61 Federal Register 57425), which recommended inclusion of BMPs in first-round permits, and expanded or better-tailored BMPs in subsequent permits. In 2005, the State Water Board assembled a blue ribbon panel to address the feasibility of including numeric effluent limits as part of NPDES municipal, industrial, and construction storm water permits. The panel issued a report dated June 19, 2006, which included recommendations as to the feasibility of including numeric limitations in storm water permits. The report concluded that it was not feasible, at that time, to set enforceable numeric effluent limitations for municipal storm water discharges.

[161] 2002 USEPA Memorandum, p. 5.

[162] *Id*., p. 2.

WLA, including the nature of the stormwater discharge, available data, modeling results, and other relevant information.[163]

Both options – to choose BMP-based WQBELs or to choose numeric WQBELs – were legally available to the Los Angeles Water Board. In adopting numeric WQBELs, the Los Angeles Water Board analyzed the specific facts and circumstances surrounding storm water discharges in the region and reasonably concluded that numeric WQBELs were warranted because storm water discharges constituted a significant contributor to the water quality standards exceedances in the area and the exceedances had not been to date resolved through BMP-based requirements. Moreover, the Los Angeles Water Board concluded that it could feasibly develop numeric WQBELs following the extensive work already conducted to develop the TMDLs, which involved analyzing pollutant sources and allocating loads using empirical relationships or quantitative models. We will not second-guess the determination of the Los Angeles Water Board, given its extensive and unique role in developing the TMDLs and the permit to implement the TMDLs, that numeric WQBELs were appropriate for the Los Angeles MS4 Order.[164]

We emphasize, however, that we are not taking the position that numeric WQBELs are appropriate in all MS4 permits or even with respect to certain TMDLs within an MS4 permit. In a recent amendment to State Water Board Order 2011-0011-DWQ, NPDES Statewide Storm Water Permit for State of California Department of Transportation (Caltrans),[165] we found BMP-based TMDL requirements to be "consistent with the assumptions and requirements of the WLAs" of the TMDLs applicable to Caltrans. That determination was based on a number of factors including the fact that Caltrans, a single discharger, was named in over 80 TMDLs statewide, the fact that Caltrans had relatively little contribution to the exceedances in each of those TMDLs, and the consideration that there was significant efficiency to be gained by streamlining and standardizing control measure implementation throughout Caltrans' statewide storm water program. Similarly, regional water boards may find BMP-based requirements to be appropriate based on TMDL-specific, region-specific, or permittee-specific

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[163] 2014 USEPA Memorandum, p. 6.

[164] The Los Angeles Water Board incorporated a discussion in the Fact Sheet of how the TMDL wasteload allocations were translated into numeric WQBELs in order to implement the TMDLs in the Los Angeles MS4 Order. (Los Angeles MS4 Order, Att.F, Fact Sheet, pp. F-89-F-100). See 40 C.F.R. § 124.8. We are not independently reviewing the calculations and analyses underlying the specific numeric limitations arrived at by the Los Angeles Water Board; rather, our review has been limited to a determination of whether the choice of numeric rather than BMP-based limitations was reasonable. To the extent any petitioners asked us to independently review the issue in their petitions seeking review of the Order, the issue is dismissed. See fn. 11.

[165] State Water Board Order WQ 2014-0077-DWQ.

considerations. In many ways, the Los Angeles MS4 Order was uniquely positioned to incorporate numeric WQBELs because of the extensive TMDL development in the region in the past decade and the documented role of MS4 discharges in contributing to the impairments addressed by those TMDLs. Thus, while we decline to remove the numeric WQBELs from the Los Angeles MS4 Order, we also decline to urge the regional water boards to use numeric WQBELs in all MS4 permits.[166]

2. Requirement for Reasonable Potential Analysis

The federal regulations implementing NPDES permitting require the permitting authority to establish WQBELs for point source discharges when those discharges cause, have the "reasonable potential" to cause, or contribute to an excursion above water quality standards.[167] Permittee Petitioners argue that the Los Angeles Water Board did not conduct an appropriate reasonable potential analysis prior to imposing numeric WQBELs. The argument is misguided. The Los Angeles Water Board established that the MS4 discharges can cause or contribute to exceedances of water quality standards through the process of developing TMDLs and assigning wasteload allocations. At the permitting stage, the Los Angeles Water Board's legal obligation was to develop WQBELs "consistent with the assumptions and requirements of any wasteload allocation" in the TMDLs,[168] and not to reconsider reasonable potential.[169]

3. USEPA-Established TMDLs

USEPA has established seven TMDLs that include wasteload allocations for MS4 discharges covered by the Los Angeles MS4 Order. In contrast to state-adopted TMDLs, USEPA-established TMDLs do not contain an implementation plan or schedule for achievement of the wasteload allocations,[170] with the effect that Permittees must comply with wasteload allocations immediately. To avoid this result, the regional water board may either adopt a

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[166] Relying on the 2014 USEPA Memorandum, Permittee Petitioners also argue that the Los Angeles Water Board was required to disaggregate storm water sources within applicable TMDLs. The 2014 USEPA Memorandum only encourages permit writers to assign specific shares of the wasteload allocation to specific permittees during the permitting process, reasoning that permit writers may have more detailed information than the TMDL writers to assign reductions for specific sources. (2014 USEPA Memorandum, p.8.) In an MS4 system as complex and interconnected as that covered under the Los Angeles MS4 Order, we do not expect the permitting authority to be able to disaggregate wasteload allocations by discharger. Further, as discussed in section II.F. on joint responsibility, the Los Angeles MS4 Order has provided a means for Permittees with commingled discharges to demonstrate that they are not responsible for any given exceedance of a limitation.

[167] 40 C.F.R. § 122.44(d)(1)(iii).

[168] 40 C.F.R. § 122.44(d)(1)(vii)(B).

[169] See USEPA, NPDES Permit Writers Manual (updated September 2010), Chapter 6, section 6.3.3.

[170] See, e.g., *Am. Farm Bureau Fed'n v. U.S. E.P.A., supra,* 984 F. Supp. 2d at p. 314.

separate implementation plan as a water quality control plan amendment[171] or issue the Permittee a compliance order with a compliance schedule.[172] For the seven USEPA-established TMDLs applicable to the Permittees, the Los Angeles Water Board authorizes Permittees subject to a wasteload allocation in a USEPA-established TMDL to propose control measures that will be effective in meeting the wasteload allocation, and a schedule for their implementation that is as short as possible, as part of a WMP/EWMP.[173] Permittees that do not submit an adequate WMP/EWMP are required to demonstrate compliance with the wasteload allocations immediately.[174]

Permittee Petitioners argue that the Los Angeles Water Board has acted inconsistently in requiring BMP-based compliance with the USEPA-established TMDLs but requiring numeric WQBELs for the state-established TMDLs. We have already stated above in section C.1 that the permitting authority has discretion to choose between BMP-based and numeric effluent limitations depending on fact-specific considerations. The Los Angeles Water Board was not restricted to choosing one single uniform approach to implementing all 33 TMDLs in the Los Angeles MS4 Order. In fact, straight-jacketing NPDES permit writers to choose one approach to the exclusion of another, even within the confines of a single MS4 permit, would run afoul of USEPA's expectations in the 2014 USEPA Memorandum for a fact-specific, documented justification for the permit requirements included to implement a wasteload allocation.

The Environmental Petitioners argue that the provisions are contrary to law because they excuse Permittees from complying with final numeric wasteload allocations as long as they are implementing the BMPs proposed in the WMP/EWMP. The approach taken by the Los Angeles MS4 Order to compliance here is similar to the provisions for compliance with receiving water limitations that are not otherwise addressed by a TMDL: The Permittee proposes control measures and a timeline that is as short as possible and is considered in compliance with the final numeric limitations while implementing the control measures consistent with the schedule. We find that, given the absence of an implementation plan with final compliance deadlines specified in the Los Angeles Water Board's water quality control

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[171] Wat. Code, § 13242.

[172] *Id.*, See, e.g., § 13300.

[173] The Los Angeles MS4 Order's Fact Sheet states that the Los Angeles Water Board may choose to adopt implementation plans or issue enforcement orders in the future. (Los Angeles MS4 Order, Att. F, Fact Sheet, p. F-111.)

[174] Los Angeles MS4 Order, Part VI.E.3., pp. 145-146.

plan, this approach is consistent with the assumptions and requirements of the relevant wasteload allocations. We will not revise the provisions.

D. Non-Storm Water Discharge Provisions

Permittee Petitioners argue that the non-storm water discharge provisions of the Los Angeles MS4 Order are contrary to the Clean Water Act. Specifically, Permittee Petitioners assert that the Los Angeles MS4 Order improperly regulates non-storm water discharges from the MS4 to the receiving waters by imposing the prohibition of discharge "through the MS4 to the receiving waters" and by imposing WQBELs and other numeric limitations, rather than the MEP standard, on dry weather discharges.

The Los Angeles MS4 Order states that "[e]ach Permittee shall, for the portion of the MS4 for which it is an owner or operator, prohibit non-storm water discharges through the MS4 to receiving waters" with certain exceptions including discharges separately regulated under an NPDES permit and discharges conditionally exempt from the prohibition consistent with the federal regulations.[175] Permittee Petitioners take issue with the imposition of the prohibition "through the MS4 to receiving waters" because the language does not track the specific requirement of the Clean Water Act that the MS4 permit "include a requirement to effectively prohibit non-stormwater discharges *into the storm sewer.*" (Emphasis added.)[176]

We find the variation in language to be a distinction without a difference. Whether the Los Angeles MS4 Order prohibits non-storm water discharges *into* the MS4 or *through* the MS4 to receiving waters, the intent and effect of the prohibition is to prevent non-exempt non-storm water discharges from reaching the receiving waters.[177] The legal standard governing non-storm water – effective prohibition -- is not altered because the Los Angeles MS4 Order imposes the prohibition at the point of entry into the receiving water rather than the point of entry into the MS4 itself. Instructively, USEPA has used the terms "into," "from," and "through" interchangeably when describing the prohibition.[178]

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[175] *Id.*, Part III.A, pp 27-33.

[176] 33 U.S.C. § 1342(p)(3)(B)(ii).

[177] The Los Angeles Water Board notes that the language in the Los Angeles MS4 Order is not significantly changed from the version in the 2001 Los Angeles MS4 Order, which prohibited non-storm water discharges "into the MS4 and watercourses." The Board additionally asserts that phrasing the prohibition as "through the MS4 to receiving waters" provides Permittees with greater flexibility to use measures that control non-storm water after it enters the MS4, including regional solutions such as low-flow diversions and catch-basin inserts.

[178] See, e.g., 55 Fed. Reg. 47990, 47995-47996 ("Section 402(p)(B)(3) of the CWA requires that permits for discharges *from municipal separate storm sewer systems* require the municipality to 'effectively prohibit' non-storm water discharges *from the municipal separate storm sewer*...Ultimately, such non-storm water discharges *through a municipal separate storm sewer* must either be removed from the system or become subject to an NPDES permit. . . . *(Continued)*

Permittee Petitioners' objection to the phrasing of the prohibition in the Los Angeles MS4 Order appears to be based largely on the assumption that prohibiting non-storm water discharges at the point of entry into the receiving water rather than at the point of entry into the MS4 allows the Los Angeles Water Board to impose requirements on those discharges that would otherwise not be available under the Clean Water Act and federal regulations. We disagree.

As a preliminary matter, regardless of the phrasing of the non-storm water discharge prohibition, MEP is not the standard that governs non-storm water discharges. Permittee Petitioners have asserted that, for non-storm water discharges that enter the MS4, MEP is the governing standard just as it is for storm water discharges. This assertion misinterprets the statute. The Clean Water Act imposes two separate standards for regulation of non-storm water and storm water in an MS4 permit: The MS4 permit "shall include a requirement to effectively prohibit non-stormwater discharges" into the MS4, and "shall require controls to reduce the discharge of pollutants to the maximum extent practicable. . . ."[179] Although the statute imposes the MEP standard to control of "pollutants" rather than specifically to "pollutants in storm water," any reading of section 402(p)(3)(B)(iii) to apply generally to both non-storm water and storm water would render the effective prohibition of non-storm water in section 402(p)(3)(B)(ii) meaningless. The federal regulations confirm the distinction between the treatment of storm water and non-storm water by establishing requirements to prevent illicit discharges from entering the MS4.[180] While the regulations have no definition for "non-storm water discharges," illicit discharges most closely represent the statutory term and are defined as "any discharge to a municipal separate storm sewer that is not composed entirely of storm water except discharges pursuant to a NPDES permit . . . and discharges resulting from firefighting activities."[181] Further, contrary to assertions by Permittee Petitioners, the definition of storm water in the federal regulations is not inclusive of dry weather discharges. The federal regulations define storm water as "storm water runoff, snow melt runoff, and surface runoff and

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The CWA prohibits the point source discharge of non-storm water not subject to an NPDES permit *through municipal separate storm sewers to waters of the United States*." (Emphasis added.))

[179] 33 U.S.C. § 1342(p)(3)(b)(iii).

[180] 40 C.F.R. § 122.26(d)(2)(iv)(B).

[181] *Id.*, § 122.26(b)(2). The preamble to the regulations states: "Today's rule defines the term 'illicit discharge' to describe any discharge through a municipal separate storm sewer system that is not composed entirely of storm water and that is not covered by an NPDES permit." (55 Fed. Reg. 47990, 47995 (Nov. 16, 1990).)

drainage."[182] Surface runoff and drainage cannot be understood to refer to dry weather discharges where USEPA has specifically stated in the preamble to the relevant regulations that it would not expand the definition of storm water to include "a number of classes of discharges which are not in any way related to precipitation events."[183] Accordingly, dry weather discharges are not a component of storm water discharges subject to the MEP standard.[184]

Second, the Los Angeles Water Board's legal authority to impose TMDL-based WQBELs and other limitations on dry weather discharges is derived not from the phrasing of the discharge prohibition in the statute but from the TMDLs themselves, as well as the Clean Water Act direction to require "such other provisions" as the permitting authority "determines appropriate for the control of such pollutants." We have already found that the Los Angeles MS4 Order reasonably (and legally) incorporated numeric WQBELs and other limitations to implement the TMDLs. The Los Angeles Water Board's authority to impose the limitations for dry weather conditions is accordingly independent of the provisions establishing the non-storm water effective prohibition.

Permittee Petitioners also assert that requiring compliance with the non-storm water discharge prohibition through and from the MS4 would frustrate enforcement of the illicit connection and illicit discharge elimination programs of the Los Angeles MS4 Order, which continue to require the Permittee to prohibit illicit discharges and connections *to* the MS4.[185] On this point, we agree with the Los Angeles Water Board that the illicit connection and illicit discharge elimination program is a means to implement the non-storm water prohibition and independently implementable and enforceable. We are more sympathetic to the argument by Permittee Petitioners that, in the context of a complex MS4 system with commingled discharges, the prohibition of discharges through the MS4 to the receiving waters poses greater compliance challenges than a prohibition of discharges into the MS4; however, the Los Angeles MS4 Order's Monitoring and Reporting Program contains a procedure by which a Permittee will notify the Board and the upstream jurisdiction when non-exempted, non-storm water discharges pose an issue in commingled discharges.[186] Further, the Los Angeles Water Board states in its

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[182] 40 C.F.R. § 122.26(b)(13).

[183] 55 Fed. Reg. 47990, 47995 (Nov. 16, 1990).

[184] We disagree that the phrasing of the non-storm water discharge prohibition in the Los Angeles MS4 Order means that *any* dry weather discharges from the MS4 could be construed as a violation of the Clean Water Act for the same reasons articulated in footnote 133 of this order.

[185] Los Angeles MS4 Order, Parts VI.A.2.a.iii, p. 40, VI.D.4.d., p. 81-86, VI.D.10, p. 137-141.

[186] Los Angeles MS4 Order, Att. E, Monitoring and Reporting Program, Part IX.F.6, p. E-27.

October 15, 2013 Response that the upstream jurisdiction would then have the responsibility to further investigate and address the discharge.[187] The challenge of addressing compliance and enforcement in the context of interconnected MS4s and commingled discharges is a challenge pervasive in the MS4 regulatory structure and not unique to non-storm water discharges. We are not sufficiently persuaded by Permittee Petitioners' arguments regarding compliance to disturb the non-storm water prohibitions as currently established in the Los Angeles MS4 Order.

E. Monitoring Provisions

Relying on Water Code sections 13165, 13225, and 13267, Permittee Petitioners argue that the Los Angeles Water Board was required to conduct a cost-benefit analysis to support the monitoring and reporting requirements of the Los Angeles MS4 Order. Because the monitoring and reporting provisions of the Los Angeles MS4 Order are incorporated pursuant to federal law, the cited provisions are inapplicable here. The monitoring and reporting provisions of the Los Angeles MS4 Order were established under the Clean Water Act and USEPA's regulations.[188] Further, under state law, Water Code section 13383, rather than Water Code section 13267, controls monitoring and reporting requirements in the context of NPDES permitting, and that provision does not include a requirement to ensure that the burden, including costs of the report, bear a reasonable relationship to the need for the report.[189]

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[187] Los Angeles Water Board, October 15, 2013 Response, p. 33 & fn. 116.

[188] See 33 U.S.C. §§ 1318, 1342(a)(2); 40 C.F.R. §§ 122.26(d)(2)(i)(F), 122.26(d)(2)(iii)D), 122.41(h), 122.41(j), 122.41(*l*), 122.42(c),122.44(i), 122.48.

[189] Permittee Petitioners argue that the cost considerations of Water Code sections 13225 and 13267 are relevant to the Los Angeles MS4 Order notwithstanding the fact that it was issued under federal authority because the requirements of those section are not inconsistent with the requirements of section 13383. (See Water Code, §13372, subd. (a) ("To the extent other provisions of this division are consistent with the requirements for state programs . . . those provisions apply . . . ").) This exact assertion was taken up by the trial court in litigation challenging the 2001 Los Angeles MS4 Order and decided in favor of the Los Angeles Water Board. The trial court stated: "As noted in *Silkwood v. Kerr-McGee Corp*. (1984) 464 U.S. 238, the Court held, in part: 'state law is still preempted. . . where the state law stands as an obstacle to the accomplishment of the full purposes and objectives of Congress.' (464 U.S. at p. 248.) Applying Water Code sections 13225 and 13267 would stand, in the words of *Silkwood* as: 'an obstacle to the accomplishment of the full purposes and objectives of [the federal law].' (Ibid)." (*In re Los Angeles County Municipal Storm Water Permit Litigation* (L.A. Super. Ct., No. BS 080548, Mar. 24, 2005) Statement of Decision from Phase II Trial on Petitions for Writ of Mandate, at pp.19-20 (Administrative Record, section 10.II., RB-AR23197-23198.). Further, we note that Water Code section 13383, subdivision (c) specifically references subdivision (c) of section 13267 when establishing facility inspection requirements; in contrast, section 13383, subdivision (a) does not reference subdivision (b) of section 13267, which incorporates the requirement that "[t]he burden, including costs, of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports." Water Code section 13383, subdivision (a), was therefore arguably intended to stand in place of the requirements in section 13267(b). Finally, even where authority to impose a monitoring and reporting requirement is clearly derived from Water Code section 13267, the provision requires consideration of the costs and benefits of monitoring and reporting, but not a full cost-benefit analysis. We therefore find that the Los Angeles Water Board did not fail to meet its legal obligations by not carrying out a full cost-benefit analysis specific to the monitoring and reporting requirements of the Los Angeles MS4 Order. However, in making this finding, in no way do we mean to disavow the significance of cost consideration in permitting actions, even where not specifically required by law. We note again that the Los Angeles Water Board carefully considered the costs of *(Continued)*

Moreover, the monitoring and reporting requirements of the Los Angeles MS4 Order do not exceed the requirements of the Clean Water Act and the federal regulations.[190] In particular, we find that the receiving water monitoring requirements of the Order are reasonable in light of the need to identify water quality exceedances and evaluate progress in compliance with water quality standards. The argument made by several Permittee Petitioners that the federal regulations allow only two types of monitoring – effluent and ambient – for compliance is without support in the relevant regulations. The relevant law is clear that the permitting authority is required to incorporate monitoring and reporting requirements sufficient to determine compliance with the permit conditions.[191] In contrast, nothing in the Clean Water Act or the regulations states that requiring wet weather receiving water monitoring is beyond the authority of the permitting agency.[192] Further, accepting such a constrained interpretation of the Clean Water Act's monitoring requirements would undermine storm water permitting assessment. Excluding wet weather receiving water monitoring would preclude storm water dischargers from assessing the impacts of their discharges on waters of the United States during the events for which they are primarily being permitted—storm events. We find nothing in the text or preamble of the federal regulations to support a narrow interpretation of monitoring to exclude wet weather receiving monitoring.

To the extent Permittee Petitioners are arguing that the MEP standard, applied at the outfall, constrains the permitting authority's discretion to require monitoring beyond the outfall, we also find no support in the law for that proposition. We have already stated that we will continue to require compliance with water quality standards in MS4 permits. Wet weather receiving water monitoring is fundamental to assessing the effects of storm water discharges on water quality and determining the trends in water quality as Permittees implement control

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compliance with the Los Angeles MS4 Order generally as summarized in the Fact Sheet. (See Los Angeles MS4 Order, Att. F, Fact Sheet, pp. F-144-F-149.) Further, the Los Angeles Water Board considered monitoring costs-related comments on earlier drafts of the Los Angeles MS4 Order, and, in a number of cases, where presented with an argument that a cost related to a particular monitoring requirement was not commensurate with the benefits to be received from that requirement, made revisions to the requirement. (See, e.g., Administrative Record, section 8, RB-AR19653-19654, RB-AR19666, RB-AR19674, RB-AR19681.)

[190] The Los Angeles Water Board provided its rationale for the receiving water monitoring requirements in the Fact Sheet of the Los Angeles MS4 Order. (Los Angeles MS4 Order, Att. F, Fact Sheet, F-113-F-137.)

[191] See 33 U.S.C. § 1318(a)(2); 40 C.F.R. § 122.26(d)(2)(i)(F). While we do not interpret these requirements to mean that each and every permit condition must have a corresponding monitoring and reporting requirement, neither do we see any constraints on the water boards' authority to establish monitoring and reporting requirements.

[192] Permittee Petitioners reference language in the federal regulations concerning "effluent and ambient monitoring" (40 C.F.R. § 122.44(d)(1)(vi)(C)(3)) and appear to be using the phrase as support for their argument. That section is inapposite as it applies to situations where a State has not established a water quality objective for a pollutant present in the effluent and instead establishes effluent limitations on an indicator parameter for the pollutant of concern.

measures. Compliance may be determined at the outfall – for example, where a permittee determines that the discharge does not exceed an applicable WQBEL or receiving water limitation – but outfall monitoring alone cannot provide the broader data related to trends in storm water discharge impacts on the receiving water. Accordingly, receiving water monitoring is a legal and reasonable component of the monitoring and reporting program. Further, because Permittees are responsible for impacts to the receiving waters resulting from their MS4 discharges, Permittees may be required to participate in monitoring not only in receiving waters within their jurisdiction but also in monitoring all receiving waters that their discharges impact.

We will make no revisions to the Monitoring and Reporting provisions of the Order.

F. Joint Responsibility

In the extensive and interconnected system regulated by the Los Angeles MS4 Order, discharges originating from one Permittee's MS4 frequently commingle with discharges from other Permittees' MS4s within or outside of the Permittee's jurisdiction. Permittee Petitioners argue that the Los Angeles MS4 Order improperly ascribes responsibility to all Permittees with commingled discharges where those commingled discharges exceed a WQBEL or cause or contribute to exceedances of receiving water limitations. Specifically, Permittee Petitioners take issue with the fact that the Los Angeles MS4 Order ascribes "joint responsibility"[193] to the co-Permittees without a showing that a particular Permittee has in fact discharged the pollutant causing or contributing to the exceedance.

The Los Angeles Water Board counters that the joint responsibility regime is consistent with the intent of the Clean Water Act and further that it does not compel a Permittee to clean up the discharge of another Permittee. The Los Angeles Water Board points to two provisions for this latter proposition. First, even with joint responsibility, Permittees that have commingled MS4 discharges need only comply with permit conditions relating to discharges from the MS4 for which they are owners or operators.[194] Second, even where joint responsibility is presumed, a Permittee may subsequently counter the presumption of joint responsibility by

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[193] "Joint responsibility" is the term used in the Los Angeles MS4 Order. (See Los Angeles MS4 Order, Part II.K.1, p. 23 ("'Joint responsibility' means that the Permitttees that have commingled MS4 discharges are responsible for implementing programs in their respective jurisdictions, or within the MS4 for which they are an owner and/or operator, to meet the water quality-based effluent limitations and/or receiving water limitations assigned to such commingled MS4 discharges.") As defined by the Los Angeles Water Board and as discussed below, this term does not have the same meaning and scope as the legal doctrine of "joint liability."

[194] Los Angeles MS4 Order, Parts II.K.1, pp. 23-24, VI.A.4.a., p. 41; 40 C.F.R. § 122.26(a)(3)(vi); see also, *id.*, Part VI.E.2.b.ii., p. 142 (stating in the context of TMDL requirements that, where discharges are commingled and assigned a joint WLA, "each Permittee is only responsible for discharges from the MS4 for which they are owners and/or operators.")

affirmatively demonstrating that its MS4 discharge did not cause or contribute to the relevant exceedances.[195]

Given the size and complexity of the MS4s regulated under the Los Angeles MS4 Order and the challenges inherent in designing a monitoring program that could parse out responsibility for each individual Permittee, we find that a joint responsibility regime is a reasonable approach to assigning initial responsibility for an exceedance. The Los Angeles MS4 Order provisions addressing TMDLs also appropriately take a joint responsibility approach, given that the wasteload allocations from which the WQBELs and other TMDL-specific limitations are derived are most frequently expressed as joint allocations shared by all MS4 dischargers in the watershed. We further agree with the Los Angeles Water Board that the regime is one that is permissible under applicable law. The Clean Water Act contemplates that MS4 permits may be issued on a system-wide or jurisdiction-wide basis[196] and the federal regulations anticipate the need for inter-governmental cooperation.[197] Further, the United States Court of Appeal, Ninth Circuit, recently stated in *Natural Resources Defense Council v. County of Los Angeles* (2013) 725 F.3d 1194 that the permitting authority has wide discretion concerning the terms of a permit, including the manner in which permittees share liability.[198]

Yet, we also find that joint responsibility in an MS4 Order is only appropriate if the ultimate responsibility for addressing an exceedance rests with those permittees that actually cause or contribute to the exceedance in question. The re-issued Los Angeles MS4 Order contains additional specificity and monitoring, beyond that contained in the 2001 Los Angeles MS4 Order, to document compliance and the presence or absence of an individual municipality's contribution of pollutants to the storm water. For this reason, the general reasoning of the Ninth Circuit's 2013 *Natural Resources Defense Council v. County of Los Angeles* decision finding liability based solely on the presence of pollutants above water quality standards in the receiving waters is of limited forward-looking importance. Generally, in the context of MS4 permits, we do not sanction joint responsibility to the extent that that joint

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[195] *Id.*, Part VI.E.2., pp.141-42; see also id., Part II.K.1, pp. 23-24.

[196] 33 U.S.C. § 1342(p)(3)(B)(i).

[197] See 40 C.F.R. §§ 122.26(d)(2)(i)(D), 122.26(d)(2)(iv), 122.26(d)(2)(vii).

[198] *Natural Resources Defense Council v. County of Los Angeles* (9th Cir. 2013) 725 F.3d 1194, 1205, fn. 16, cert. den. *Los Angeles County Flood Control Dist. v. Natural Resources Defense Council* (2014) 134 S.Ct. 2135. The Ninth Circuit went on to find that, based on the specific language of the 2001 Los Angeles MS4 Order, the Permittees were jointly liable for exceedances detected by mass emissions monitoring.

responsibility would require each Permittee to take full responsibility for addressing violations, regardless of whether, and to what extent, each permittee contributed to the violation.[199]

The Los Angeles MS4 Order does not impose such a joint responsibility regime where each Permittee must take full responsibility for addressing other Permittees' violations. In addition to clearly stating that permittees are responsible only for their contribution to the commingled discharges, the Los Angeles MS4 Order provides that Permittees may affirmatively show that their discharge did not cause or contribute to an exceedance. Joint responsibility, as applied by the Los Angeles MS4 Order, is thus consistent with our expectation that ultimate responsibility for addressing an exceedance rests with those Permittees that actually cause or contribute to the exceedance and consistent with the regulatory direction that co-permittees need only comply with permit conditions relating to discharges from the MS4 for which they are owners or operators.

While the result is that the burden rests on the Permittee to demonstrate that its commingled discharge is not the source of an exceedance, rather than on the Los Angeles Water Board to demonstrate that a Permittee's commingled discharge is causing or contributing to the exceedance, the result is not contrary to law. The Los Angeles Water Board has the initial burden to show that a violation of the Los Angeles MS4 Order has occurred,[200] but the Board can do so by establishing an exceedance of a limitation by jointly responsible Permittees and need not identify the exact source of the exceedance. This scheme represents a reasonable policy approach to a complicated compliance question where the Permittees are more closely familiar than the Los Angeles Water Board with their outfalls and their discharges in the extensive and interconnected MS4 network.

We are, however, concerned that the Los Angeles MS4 Order's treatment of the joint responsibility issue is too narrow. The Los Angeles Water Board addresses the issue of joint responsibility primarily in the context of compliance with the TMDL requirements of the Order. Commingled discharges pose the same questions of assigning responsibility where receiving water limitations are exceeded in water bodies receiving MS4 discharges from multiple jurisdictions, but where the pollutant is not addressed by a TMDL. A similar approach to

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[199] In a "joint and several liability" scheme, a plaintiff may collect his or her entire damages from any one defendant, and the defendants must then rely on principles of indemnity or contribution to apportion ultimate liability amongst themselves. (See *American Motorcycle Assn. v. Superior Court of Los Angeles County* (1978) 20 Cal. 3d 578, 586-590.) Because the Los Angeles MS4 Order's joint responsibility scheme does not equate to joint liability, and because we do not find such liability appropriate from a policy perspective, we do not address Petitioners' legal arguments as to whether joint or joint and several liability in the storm water context would be consistent with applicable law.

[200] See e.g. *Sackett v. E.P.A.* (9th Cir. 2010) 622 F.3d 1139 rev'd on other grounds *Sackett v. E.P.A.* (2012) 132 S. Ct. 1367.

assigning responsibility for addressing the exceedances is appropriate there. We will add new language to the Los Angeles MS4 Order mirroring Part VI.E.2.b., but applying the principles more generally.

We also take this opportunity to emphasize that all MS4 permits should be drafted to avoid one potential, but likely unintended, result arising from *Natural Resources Defense Council v. County of Los Angeles*. The broadest reading of the Ninth Circuit's holding following remand from the U.S. Supreme Court would assign joint liability to all Permittees for any exceedance at a monitoring location designated for the purpose of compliance determination, even if the particular pollutant is not typically found in storm water and has a likely alternative source such as an industrial discharger or waste water treatment plan. Providing municipalities an opportunity to demonstrate that they did not contribute to a pollutant present in receiving waters above standards will prevent this outcome.

We shall amend Part VI.B. as follows:

B. Monitoring and Reporting Program (MRP) Requirements

1. Dischargers shall comply with the MRP and future revisions thereto, in Attachment E of this Order or may, in coordination with an approved Watershed Management Program per Part VI.C, implement a customized monitoring program that achieves the five Primary Objectives set forth in Part II.A. of Attachment E and includes the elements set forth in Part II.E. of Attachment E.

2. Compliance Determination for Commingled Discharges

a. For commingled discharges addressed by a TMDL, a Permittee shall demonstrate compliance with the requirements of Part E as specified at Part E.2.b.

b. For commingled discharges not addressed by a TMDL, a Permittee shall demonstrate compliance with the requirements of Part V.A as follows:

i. Pursuant to 40 CFR section 122.26(a)(3)(vi), each Permittee is only responsible for discharges from the MS4 for which they are owners and/or operators.

ii. Where Permittees have commingled discharges to the receiving water, or where Permittees' discharges commingle in the receiving water, compliance in the receiving water shall be determined for the group of Permittees as a whole unless an individual Permittee demonstrates that its discharge did not cause or contribute to the exceedance, pursuant to subpart iv. below.

iii. For purposes of compliance determination, each Permittee is responsible for demonstrating that its discharge did not cause or contribute to an exceedance of the receiving water limitation in the target receiving water.

iv. A Permittee may demonstrate that its discharge did not cause or contribute to an exceedance of a receiving water limitation in one of the following ways:

(1) Demonstrate that there was no discharge from the Permittee's MS4 into the applicable receiving water during the relevant time period;

(2) Demonstrate that the discharge from the Permittee's MS4 was controlled to a level that did not cause or contribute to the exceedance in the receiving water;

(3) Demonstrate that there is an alternative source of the pollutant that caused the exceedance, that the pollutant is not typically associated with MS4 discharges, and that the pollutant was not discharged from the Permittee's MS4; or

(4) Demonstrate that the Permittee is in compliance with the Watershed Management Programs provisions under VI.C.

G. Separation of Functions in Advising the Los Angeles Water Board

Petitioners Cities of Duarte and Huntington Park (Duarte and Huntington Park) argue that their rights to due process of law were violated when the same attorneys advised both the Los Angeles Water Board staff and the Board itself in the course of the proceedings to adopt the Los Angeles MS4 Order. We disagree and reaffirm our position that permitting actions do not require the water boards to separate functions when assigning counsel to advise in development and adoption of a permit.

A water board proceeding to adopt a permit, including an NPDES permit, waste discharge requirements, or a waiver of waste discharge requirements, is an adjudicative proceeding subject to the Administrative Procedure Act's administrative adjudication statutes in Government Code section 11400 et seq.[201] Section 11425.10, part of the "Administrative Adjudication Bill of Rights," provides that "[t]he adjudicative function shall be separated from the investigative, prosecutorial, and advocacy functions with the agency . . . ."[202] In accordance with

[201] See Cal. Code Regs., tit. 23, § 648, subd. (b).

[202] Gov. Code, § 11425.10, subd. (a)(4). Subdivision (a)(4) references section 11425.30, which addresses disqualification of a presiding officer that has served as "investigator, prosecutor, or advocate" in the proceeding or its preadjudicative stage or is subject to "the authority, direction, or discretion" of a person who has served in such roles.

this directive, the water boards separate functions in all enforcement cases, assigning counsel and staff to prosecute the case, and separate counsel and staff to advise the board.

In a permitting action, water board counsel have an advisory role, not an investigative, prosecutorial, or advocacy role. Permitting actions are not investigative in nature and there is no consideration of liability or penalties that would make the action prosecutorial in nature. Further, while both counsel and staff are expected to develop recommendations for their boards, the role of counsel and staff is not to act as an advocate for one particular position or party concerning the permitting action, but to advise the board as neutrals, with consideration of the legal, technical, and policy implications of all options before the board. In the case of counsel, such consideration and advice includes not just legal evaluation of the substantive options for permitting but also of procedural issues such as admissibility of the evidence, conduct of the hearing, and avoidance of board member conflicts. Because counsel and staff are advisors to the board rather than advocates for a particular position, the same counsel may advise staff in the course of development of the permit and the board in the adoption proceedings.

A primary purpose of separation of functions in adjudicatory proceedings is the need to prevent improper ex parte communications.[203] The exceptions to the ex parte communications rules further support the position that counsel advising board staff may also advise the board itself. While section 11430.10 of the Government Code generally prohibits communications concerning issues in a pending administrative proceeding between the presiding officer and an employee of the agency that is a party,[204] one exception provides that a communication "for the purpose of assistance and advice to the presiding officer," in this case the board, "from a person who has not served as investigator, prosecutor, or advocate in the proceeding or its preadjudicative stage" is permissible. Even if board counsel could be considered an advocate in the proceeding, another provision (specifically referencing the water boards) excepts the communication from the general ex parte communications rules. A communication is not an ex parte communication if:

> (c) The communication is for the purpose of advising the presiding officer concerning any of the following matters in an adjudicative hearing that is nonprosecutorial in character:

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[203] See *Dept. of Alcoholic Beverage Control v. Alcoholic Beverage Control Appeals Bd.* (2006) 40 Cal.4th 1, 9-10.

[204] Government Code section 11430.10 prohibits communications between an employee that is a "party" to a pending proceeding and the presiding officer. We disagree that Los Angeles Water Board staff, as an advisor to the Board, was a "party" to the proceedings for adoption of the Los Angeles MS4 Order, but, even if staff could be considered a party, the cited exceptions to the ex parte communications rules would apply.

. . .

(2) The advice involves an issue in a proceeding of the San Francisco Bay Conservation and Development Commission, California Tahoe Regional Planning Agency, Delta Protection Commission, Water Resources Control Board, or a regional water quality control board.[205]

The fact that communications that would otherwise be considered prohibited ex parte communications are specifically permitted in non-prosecutorial adjudicative proceedings of the water boards further supports the position that the water boards are not obligated by law to separate functions in permitting actions.

We acknowledge that there may be some unique factual circumstances under which a permitting proceeding could violate due process or the Administrative Procedure Act because board counsel either acted or gave the appearance of acting as a prosecutor or advocate. Duarte and Huntington Park point to a writ of mandate issued by the Los Angeles Superior Court in 2010,[206] holding that a 2006 proceeding to incorporate provisions of the Santa Monica Bay Beaches TMDL into the 2001 Los Angeles MS4 Order was not fairly conducted because Los Angeles Water Board counsel had acted as an advocate for Board staff, directly examining Board staff witnesses, cross-examining witnesses called by permittees, objecting to questions asked by permittees, and making a closing argument on behalf of Board staff, while simultaneously advising the Board. The proceedings to adopt the Los Angeles MS4 Order did not follow the type of adversarial structure that led the Superior Court to find a violation of separation of functions in the 2006 proceedings.[207] Further, nothing in the conduct of the Los Angeles Water Board attorneys in the Los Angeles MS4 Order proceedings leads us to find that they acted as advocates for a particular position or party, rather than as advisors to the Board.

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[205] Gov. Code, § 11430.30. We note that the Law Revision Commission comments on section 11430.30, subdivision (c), state that "[s]ubdivision (c) applies to nonprosecutorial types of administrative adjudications, such as . . . proceedings . . . setting *water quality protection…requirements.*" (Emphasis added.) The notes further state that "[t]he provision recognizes that the length and complexity of many cases of this type may as a practical matter make it impossible for any agency to adhere to the restrictions of [ex parte communications], given limited staffing and personnel." (25 Cal.L.Rev.Comm. Reports 711 (1995).) We agree that the lengthy and complex nature of permitting proceedings, and the limited staffing resources of the water boards, caution against an expansive interpretation of separation of functions in non-prosecutorial adjudications.

[206] *County of Los Angeles v. State Water Resources Control Board* (Super. Ct., Los Angeles Co. (June 2, 2010, Minute Order) No. BS122724) (Administrative Record, section 10.II, RB-AR23665-23667.)

[207] We also note that, although the writ directed that petitioners were entitled to a new hearing "in which the same person does not act as both an advocate before the Board and an advisor to the Board," the writ had no direct bearing on the separate proceedings to adopt the Los Angeles MS4 Order. In any case, as discussed, Board attorneys did not act as advocates in the proceedings to adopt the Los Angeles MS4 Order.

The two specific cases pointed to by Duarte and Huntington Park – advice by Board counsel to Board member Mary Ann Lutz regarding recusal due to ex parte communications and advice to the Board generally on the lack of a cost-benefit analysis requirement in federal law – may be contrary to the legal position held by Duarte and Huntington Park, but there is nothing in the record to suggest that the advice was driven by biased advocacy for a Board staff position.[208] In the absence of such evidence, we find no reason to depart from the general rule that separation of functions is not required in a permitting proceeding[209] and find that Los Angeles Water Board counsel acted in accordance with applicable laws in advising Board staff and the Board itself.

H. Signal Hill's Inclusion in the Order

The City of Signal Hill (Signal Hill) argues that the Los Angeles Water Board acted contrary to relevant law when it issued the system-wide Los Angeles MS4 Order that included Signal Hill, even though Signal Hill had submitted an application for an individual permit.[210] We disagree.

Signal Hill points out that the federal regulations allow an operator of an MS4 to choose between submitting an application jointly with one or more other operators for a joint permit or individually for a distinct permit.[211] However, the choice of application does not necessarily dictate the type of permit that the permitting authority ultimately deems appropriate. The permitting authority in turn has discretion to determine if the permit should be issued on a

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[208] See Administrative Record, section 7, RB-AR18309-18316, RB-AR18397-18400 (Transcript of Proceedings on Oct. 4, 2012), section 7, RB-AR18892-18894 (Transcript of Proceedings on Oct. 5, 2012).

[209] Although *Morongo Band of Mission Indians v. State Water Resources Control Board* (2009) 45 Cal.4th 731 concerned an enforcement proceeding and therefore is not on point for our legal determination above, we take note of the direction by the California Supreme Court that separation of functions in an administrative tribunal should not be expanded beyond its appropriate scope: "In construing the constitutional due process right to an impartial tribunal, we take a more practical and less pessimistic view of human nature in general and of state administrative agency adjudicators in particular . . . [and where proper procedure is followed and in the absence of a specific demonstration of bias or unacceptable risk of bias] we remain confident that state administrative agency adjudicators will evaluate factual and legal arguments on their merits, applying the law to the evidence in the record to reach fair and reasonable decisions." (*Morongo Band of Mission Indians, supra*, at pp. 741-742.)

[210] Signal Hill was one of several permittees under the 2001 Los Angeles MS4 Order that elected not to submit an application jointly with the other permittees for the renewed permit. The other parties have not challenged their inclusion under the Los Angeles MS4 Order. The Los Angeles Water Board rejected Signal Hill's application as incomplete; however, our determination that the Los Angeles Water Board had the discretion to issue the system-wide Los Angeles MS4 Order is not dependent on that fact.

[211] 40 C.F.R. § 122.26(a)(3)(iii). Signal Hill has also cited regulations applicable to Small MS4s at 40 Code of Federal Regulations sections 122.30 through 122.37. These regulations are not applicable here because the Los Angeles Water Board has designated the Greater Los Angeles County MS4, which includes the incorporated cities and the unincorporated areas of Los Angeles County within coastal watersheds, as a large MS4 pursuant to 40 Code of Federal Regulations section 122.26(b)(4).

jurisdictional or system-wide basis.[212] While the federal regulations do not specifically state that, in exercising that discretion, the permitting authority may override the permit applicant's preference for an individual permit, nothing in the regulations constrains its authority to do so. Section 122.26(a)(3)(iii) of 40 Code of Federal Regulations does not require the permitting authority to take any specific action in response to the submission of an individual application. And sections 122.26(a)(3)(ii) and 122.26(a)(3)(iv) provide that the permitting authority "may issue" system-wide or distinct permits. The preamble to the regulations similarly contemplates wide discretion for the permitting authority to choose system-wide permits, including a permit that would allow an entire system in a geographical region to be designated under one permit.[213] Particularly because the option of a system-wide permit would be significantly frustrated if MS4 operators were allowed to opt out at their discretion, the most reasonable reading of the regulations is that the permitting authority, not the applicant, makes the ultimate decision as to the scope of the permit that will be issued. Accordingly, we find that the Los Angeles Water Board had the discretion under the relevant law to issue the Los Angeles MS4 Order with Signal Hill as a permittee.

We also find that the Los Angeles Water Board's decision regarding Signal Hill was appropriately supported by findings in the Order and in the Fact Sheet.[214] Finding C of the Los Angeles MS4 Order, as well as discussion in the Fact Sheet,[215] establishes that the Los Angeles Water Board found a system-wide permit to be appropriate for a number of reasons, including that Permittees' MS4s comprise a large interconnected system with frequently commingled discharges, that the TMDLs to be implemented apply to the jurisdictional areas of multiple Permittees, that the passage of Assembly Bill 2554[216] in 2010 provided a potential means for funding collaborative water quality improvement plans among Permittees, and that the results of an online survey conducted by Los Angeles Water Board staff showed that the

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[212] 33 U.S.C. § 1342(p)(3)(B)(i); 40 C.F.R. § 122.26(a)(1)(v), (a)(3)(ii), (a)(3)(iv).

[213] See 55 Fed. Reg. 47990, 48039-48043 (preamble to the Phase I regulations noting that section 122.26(a)(3)(iv) would allow an entire system in a geographical region to be designated under one permit and further discussing that sections 122.26(a)(1)(v) and (a)(3)(ii) allow the permitting authority broad discretion in issuing system-wide permits).

[214] *Topanga Assn.*, *supra*, 11 Cal.3d at 515.

[215] Los Angeles MS4 Order, Part II.C., pp. 14-15; id., Att. F, Fact Sheet, pp. F-15-F-18.

[216] Assembly Bill No. 2554, Chapter 602, an act to amend sections 2 and 16 of the Los Angeles County Flood Control Act (Chapter 755 of the Statutes of 1915), relating to the Los Angeles County Flood Control District, Sept. 30, 2010 (Administrative Record, section 10.VI.C., RB-AR29172-29179). The Bill allows the Los Angeles County Flood Control District to assess a property-related fee or charge, subject to voter approval in accordance with proposition 218, for storm water and clean water programs.

majority of Permittees favored either a single MS4 permit for Los Angeles County or several watershed-based permits.

Signal Hill points out that the reasons enumerated by the Los Angeles Water Board as grounds for issuance of a system-wide permit did not preclude the Los Angeles Water Board from issuing an individual permit to the City of Long Beach (Long Beach).[217] The Los Angeles Water Board has provided the rationale for distinguishing Signal Hill and Long Beach in its October 15, 2013 Response. The Los Angeles Water Board explains that Long Beach has had an individual permit for more than a decade and that, unlike Signal Hill, it was not permitted under the 2001 Los Angeles MS4 Order. The Board's decision to issue a separate permit to Long Beach was originally the result of a settlement agreement that resolved litigation on the MS4 permit issued by the Los Angeles Water Board in 1996, and Long Beach has a proven track record in implementing the individual permit while cooperating with Permittees under the Los Angeles MS4 Order.[218] We find that the Los Angeles Water Board reasonably distinguished between Long Beach and the Permittees under the Los Angeles MS4 Order in making determinations as to individual permitting. We will not reverse its determination but we will add a brief statement reflecting that reasoning to the Fact Sheet.

We shall amend section III.D.1.a. at page F-18, Attachment F, Fact Sheet, as follows:

> The Regional Water Board determined that the cities of Signal Hill and Downey, the five upper San Gabriel River cities, and the LACFCD are included as Permittees in this Order. **In making that determination, the Regional Water Board distinguished between the permitting status of those cities and the permitting status of the City of Long Beach at this time because the City of Long Beach has a proven track record in implementing an individual permit and developing a robust monitoring program under that individual permit, as well as in cooperation with other MS4 dischargers on watershed based implementation. While all other incorporated cities with discharges within the coastal watersheds of Los Angeles County, as well as Los Angeles County and the Los Angeles County Flood Control District, are permitted under this Order,** ~~I~~individually tailored permittee requirements are provided in this Order, where appropriate.

[217] Signal Hill is located in the geographical middle of Long Beach and is entirely surrounded by that city.

[218] Los Angeles Water Board, October 15, 2013 Response, p. 25, fn. 78.

III. CONCLUSION

Based on the above discussion, we conclude as follows:

1. Although we are not bound by federal law or state law to require compliance with water quality standards in municipal storm water permits, we will not depart from our prior precedent regarding compliance with water quality standards. The regional water boards shall continue to require compliance with receiving water limitations in municipal storm water permits through incorporation of receiving water limitations provisions consistent with State Water Board Order WQ 99-05.

2. However, we find that municipal storm water dischargers may not be able to achieve water quality standards in the near term and therefore that it is appropriate for municipal storm water permits to incorporate a well-defined, transparent, and finite alternative path to permit compliance that allows MS4 dischargers that are willing to pursue significant undertakings beyond the iterative process to be deemed in compliance with the receiving water limitations.

3. We find that the WMP/EWMP provisions of the Los Angeles MS4 Order, with minor revisions that we incorporate herein, are an appropriate alternative to immediate compliance with receiving water limitations. The WMP/EWMP provisions are ambitious, yet achievable, and include clear and enforceable deadlines for the achievement of receiving water limitations and a rigorous and transparent process for development and implementation of the WMPs/EWMPs.

4. We find that the WMP/EWMP provisions do not violate anti-backsliding requirements.

5. We find that the WMP/EWMP provisions do not violate antidegradation requirements; however, we find that the antidegradation findings made by the Los Angeles Water Board are too cursory and revise those findings consistent with the federal and state antidegradation policies.

6. We find that issuance of time schedule orders is appropriate where a final receiving water limitations deadline set in the WMP/EWMP or a final TMDL-related deadline is not met; however we find that the WMP/EWMP compliance schedule need not otherwise be structured as an enforcement order.

7. We clarify the WMP/EWMP provisions to make it clear that final compliance with receiving water limitations and final WQBELs and other TMDL-specific limitations must be verified through monitoring.

8. We clarify the WMP/EWMP provisions to make it clear that Permittees may request extensions of deadlines incorporated into the WMPs/EWMPs except those final deadlines established in a TMDL. However, any deadline extensions must be approved by the Executive Officer after public review and comment.

9. In order to add greater rigor and accountability to the process of achieving receiving water limitations, we revise the WMP/EWMP provisions to add that the Permittees must comprehensively evaluate new data and information and revise the WMPs/EWMPs, including the supporting reasonable assurance analysis, by June 30, 2021, for approval by the Executive Officer.

10. We find that the storm water retention approach is a promising approach to achieving receiving water limitations, but also find that the Administrative Record does not support a finding that the approach will necessarily lead to achievement of water quality standards in all cases. We revise the WMP/EWMP provisions to clarify that, in the case of implementation of an EWMP with the storm water retention approach, if compliance with a final WQBEL or other TMDL-specific limitation is not in fact achieved in the drainage area, a Permittee will be considered in compliance with the relevant limitation only if the Permittee continues to adaptively manage the EWMP to achieve ultimate compliance with the WQBEL or other TMDL limitation.

11. We find reasonable the WMP/EWMP provisions that allow permittees to be deemed in compliance with receiving water limitations during the planning and development phase of the WMP/EWMP. We revise the WMP/EWMP provisions to state that, if a Permittee fails to meet one of the deadlines, the Permittee may still develop a WMP/EWMP for approval by the Los Angeles Water Board or its Executive Officer; however, the Permittee will not be deemed in compliance with receiving water limitations or WQBELs and other TMDL-specific limitations during the subsequent WMP/EWMP development period.

12. We recognize that the Los Angeles MS4 Order WMP/EWMP compliance path alternative may not be appropriate in all MS4 permits. In order to provide guidance to regional water boards preparing Phase I MS4 permits, we lay out several principles to be followed in drafting receiving water limitations compliance alternatives: Phase I MS4 permits should (1) continue to require compliance with water quality standards in accordance with our Order WQ 99-05; (2) allow compliance with TMDL requirements to constitute compliance with receiving water limitations; (3) provide for a compliance

alternative that allows permittees to achieve compliance with receiving water limitations over a period of time as described above; (4) encourage watershed-based approaches, address multiple contaminants, and incorporate TMDL requirements; (5) encourage the use of green infrastructure and the adoption of low impact development principles; (6) encourage the use of multi-benefit regional projects that capture, infiltrate, and reuse storm water; and (7) require rigor, accountability, and transparency in identification and prioritization of issues in the watershed, in proposal and implementation of control measures, in monitoring of water quality, and in adaptive management of the program. We expect the regional water boards to follow these principles unless the regional water board makes a specific showing that application of a given principle is not appropriate for region-specific or permit-specific reasons.

13. We recognize that the success of the WMP/EWMP approach depends in large part on the steps that follow adoption of the provisions, including the development and approval of rigorous WMPs/EWMPs and the implementation and appropriate enforcement of the programs once approved. We direct the Los Angeles Water Board to periodically report specific information to the State Water Board regarding implementation of the WMPs/EWMPs, including on-the-ground structural control measures completed, monitoring data evaluating the effectiveness of such measures, control measures proposed to be completed and proposed funding and schedule, trends in receiving water quality related to storm water discharges, and compliance and enforcement data.

14. We find that the Los Angeles Water Board acted in a manner consistent with the law when establishing numeric WQBELs. We further find that the development of numeric WQBELs was a reasonable exercise of the Los Angeles Water Board's policy discretion, given its experience in developing the relevant TMDLs and the significance of storm water impacts in the region. However, we find that numeric WQBELs are not necessarily appropriate in all MS4 permits or for all parameters in any single MS4 permit.

15. We find that the Los Angeles Water Board's choice of BMP-based WQBELs, to be proposed by the Permittee in the WMP/EWMP to address USEPA-established TMDLs was reasonable.

16. We find that the Los Angeles Water Board did not act contrary to federal law when it prohibited the discharge of non-storm water "through the MS4 to receiving water" instead of "into" the MS4. Regardless of the exact wording of the prohibition, the standard that applies to non-storm water is the requirement of "effective prohibition." However, the Los Angeles Water Board also has authority to regulate any dry weather discharges from the MS4s under the applicable TMDLs.

17. We find that the monitoring and reporting provisions of the Los Angeles MS4 Order are consistent with applicable law and reasonable.

18. We find that assigning joint responsibility for commingled discharges that cause exceedances is not contrary to applicable law. Given the size and complexity of the MS4s regulated under the Los Angeles MS4 Order, the joint responsibility regime also constitutes a reasonable policy choice. The Los Angeles MS4 Order specifically allows a permittee to avoid joint responsibility by demonstrating that its commingled discharge is not the source of an exceedance.

19. We find that representation of the Los Angeles Water Board and the Los Angeles Water Board staff by the same attorneys in the proceedings to adopt the Los Angeles MS4 Order was lawful and reasonable.

20. We find that the Los Angeles Water Board acted in a manner consistent with applicable law and reasonably when it issued a system-wide permit that included Signal Hill.

Addressing the water quality impacts of municipal storm water is a complex and difficult undertaking, requiring innovative approaches and significant investment of resources. We recognize and appreciate the commendable effort of the Los Angeles Water Board to come up with a workable and collaborative solution to the difficult technical, policy, and legal issues, as well as the demonstrated commitment of many of the area's MS4 dischargers and of the environmental community to work with the Los Angeles Water Board in the development and implementation of the proposed solution. We also recognize the extensive work that interested persons from across the state, including CASQA, have invested in assisting us in understanding how the watershed-based alternative compliance approach developed by the Los Angeles Water Board may inform statewide approaches to addressing achievement of water quality requirements. While storm water poses an immediate water quality problem, we believe that a rigorous and transparent watershed-based approach that emphasizes low impact development, green infrastructure, multi-benefit projects, and capture, infiltration, and reuse of storm water is

a promising long-term approach to addressing the complex issues involved. We must balance requirements for and enforcement of immediate, but often incomplete, solutions with allowing enough time and leeway for dischargers to invest in infrastructure that will provide for a more reliable trajectory away from storm water-caused pollution and degradation. We believe that the Los Angeles MS4 Order, with the revisions we have made, strikes that balance at this stage in our storm water programs, but expect that we will continue to revisit the question of the appropriate balance as the water boards' experience in implementing watershed-based solutions to storm water grows.

IV. ORDER

IT IS HEREBY ORDERED that the Los Angeles MS4 Order is amended as described above in this order. The Los Angeles Water Board is directed to prepare a complete version of the Los Angeles MS4 Order (including any necessary non-substantive conforming corrections), post the conformed Los Angeles MS4 Order on its website, and distribute it as appropriate.

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of the State Water Resources Control Board held June 16, 2015.

AYE:	Chair Felicia Marcus Vice Chair Frances Spivy-Weber Board Member Tam M. Doduc Board Member Steven Moore Board Member Dorene D'Adamo
NAY:	None
ABSENT:	None
ABSTAIN:	None

Jeanine Townsend
Clerk to the Board

Alameda County Unincorporated Area

CLEAN WATER PROTECTION FEE

ANNUAL REPORT
FISCAL YEAR 2022/2023

399 Elmhurst Street
Hayward, CA 94544-1395
(510) 670-6547
www.acfloodcontrol.org
April 2022

Public Works Agency
Alameda County

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I. INTRODUCTION

The Alameda County Unincorporated Area Clean Water Protection Fee Annual Report (Report) is presented to the Alameda County Board of Supervisors (Board) annually for review and public hearing in compliance with Ordinance O-94-36.

This Report describes the Clean Water Protection Fee's background, objectives, proposed fee rates, and explains how the fees are calculated for fiscal year 2022/2023 (July 1, 2022 through June 30, 2023).

For more information and to view this report online, visit the Document Library/Annual Report page of the Alameda County Public Works Agency website, www.acpwa.org or click here 2022-2023 Annual Clean Water Protection Fee Report

A hard copy of the Report may be reviewed and/or purchased at the following location: Alameda County Public Works Agency, 399 Elmhurst Street, Room 113, Hayward, CA, 94544. Please contact the Alameda County Public Works Agency receptionist at 510-670-5480 to make arrangements.

II. BACKGROUND

Stormwater runoff has been identified as one of the largest sources of pollutants reaching San Francisco Bay and many other water bodies throughout the nation. Because stormwater runoff flows in volumes that are orders of magnitude larger than sanitary sewage, it is prohibitively costly to remove pollutants by using the kinds of technologies that are applied to sanitary sewage.

The most cost-effective means to improve the quality of stormwater runoff is to take actions that prevent it from becoming polluted in the first place. This is the approach taken by the County of Alameda through its Unincorporated Area Clean Water Program.

Regulatory Requirements

Pursuant to the Federal Clean Water Act of 1972, as amended in 1987, the US Environmental Protection Agency (USEPA) finalized regulations in November 1990 requiring municipalities with storm drainage systems to apply for a National Pollutant Discharge Elimination System (NPDES) permit to discharge stormwater. The California Regional Water Quality Control Board (RWQCB) administers the NPDES stormwater permits in California. The NPDES permit requires that permittees effectively prohibit the discharge of non-stormwater into storm drain systems and watercourses, prohibit any type of solid wastes into surface water that would eventually drain to surface waters, and adhere to the receiving water limitations set forth in the permit.

The County of Alameda, together with 16 other co-permittees (all of the cities within Alameda County, the Alameda County Flood Control and Water Conservation District (District), and Zone 7 of the District), was issued its first five-year NPDES stormwater permit by the RWQCB on October 16, 1991. Beginning with the 2009 5-year NPDES permit, the RWQCB combined the individual NPDES permits into one single Municipal Regional Stormwater NPDES Permit (MRP) for all of the 76 Phase 1 municipalities and local agencies within the San Francisco Bay Region, RWQCB Region 2. The current Municipal Regional Stormwater NPDES Permit No. CAS612008 ("MRP") was adopted by the RWQCB at their hearing on October 16, 2015. The County along with other Bay Area municipalities have been taking part

in negotiation with the RWQCB for the next 5-year MRP. Adoption by the RWQCB is expected in early FY2022/2023.

The Alameda County Unincorporated Area Clean Water Protection Fee provides funding that enables the County of Alameda to fulfill its requirements of the MRP for the unincorporated area of Alameda County. Following public hearings on May 24, 1994 and June 14, 1994, the Board adopted Ordinance O-94-36 which provided for an annual fee, levied against property owners in the unincorporated area of Alameda County, to fund those activities associated with NPDES permit requirements. The Alameda County Public Works Agency administers these funds and manages the Alameda County Unincorporated Area Clean Water Program.

Objectives of the Unincorporated Area Clean Water Program

The Alameda County Unincorporated Area Clean Water Program is designed to efficiently satisfy the NPDES permit requirements. Program tasks follow the outline of the NPDES permit and include the following components:

- Municipal operations
- New develop and redevelopment
- Industrial and commercial site controls
- Illicit discharge detection and elimination
- Construction site control
- Public information and outreach
- Water quality monitoring
- Specific pollutant control for pesticide toxicity, trash, mercury, PCBs, copper, legacy pesticides, Selenium, PDBEs, and bacteria

While a major portion of the activities to comply with NPDES permit requirements are implemented at a local level, the County of Alameda works collaboratively through the Alameda Countywide Clean Water Program to identify and implement tasks that can most effectively be accomplished jointly, with other NPDES co-permittees.

The Alameda Countywide Clean Water Program (ACCWP) is a consortium of the 17 co-permittees of the NPDES permit within Alameda County and was formed under a

memorandum of agreement approved by your Board of Supervisors on May 7, 1991. A portion of the Alameda County Unincorporated Area Clean Water Protection Fee is used to fund the County's cost allocation for collaborative efforts implemented through the ACCWP (10.77%). The ACCWP Management Committee, comprised of representatives from each of the 17 co-permittees, has oversight of the activities and administration of the ACCWP.

III. BASIS OF FEES CHARGED TO PROPERTY OWNERS

Alameda County Ordinance O-94-36 stipulates the way fees are levied for the Alameda County Unincorporated Area Clean Water Program. Authorization for the fee is California Government Code Sections 25825, 25830, 54309, 54344 and other appropriate sections.

The fee is based on the benefit received by each parcel. Benefits relate directly to the amount of stormwater that runs off each parcel, and are based on the assumption that the pollution each property contributes to the storm drainage system is directly related to human activity (as represented by land use) and the size of the property generating the stormwater runoff.

The Board established four categories of land use for purposes of the Clean Water Protection Fee (Table 1).

TABLE 1: Land Use Categories

GROUP A	Commercial and Industrial
GROUP B	Institutions (churches, schools, colleges, hospitals, etc.) and Multiple Residential Units of five or more units (apartments, condos, townhomes, mobile home parks)
GROUP C	Single Family and Small Multiple Residential Units (apartments, condos, townhomes, mobile homes) two to four units
GROUP D	Vacant Land (used for agriculture, farming, vineyards, crops, parks, open space, etc.)

Because vacant land is considered to contribute few pollutants to stormwater, no per-acre charge is levied for that category; rather, a minimum fee is applied. Similarly, large (greater than 0.25 acre) single family residences are levied a minimum fee and no per-acre charge.

Benefit assessments are levied and collected concurrently with County property taxes. They are subject to the same fines, penalties and forfeitures. A similar fee structure is used by the majority of cities in Alameda County to fund their NPDES permit obligations.

IV. PROPOSED FEES

Fees are based on land use and land area. Land use categories are assigned by the County Assessor's Office. Land area is the size of the parcel measured in acres. One acre is 43,560 square feet.

The runoff factors used by Alameda County to establish the Clean Water Protection Fee are nationally accepted by the civil engineering profession. They are consistently used on hydrology and watershed studies as an accurate measure of stormwater runoff.

Table 2 lists the recommended Clean Water Protection Fees for parcels in the unincorporated areas of Alameda County. These rates have remained the same since fiscal year 1994, when the fee was originally established.

Table 2: Clean Water Protection Fee Rates, Fiscal Year 2022/2023

Land Use		Minimum Yearly Charge: Parcels 0.25 Acre or Smaller	Yearly Per-acre Charge: Parcels Larger than 0.25 Acre
GROUP A	Commercial and Industrial	$14.20	$56.80 per acre
GROUP B	Institutions	$10.66	$42.60 per acre
GROUP C	Single Family Residential	$7.10	None

GROUP D	Undeveloped	$3.56	None

Table 3: Sample Fee Calculations

Group/Land Use Category		Parcel Area	Clean Water Protection Fee	Notes
A	Industrial property	0.23 acre	$14.20	Less than 0.25 acres; use minimum yearly charge
A	Commercial property	3.5 acres	$198.80	3.5 acres x $56.80/acre
B	Six-unit apartment building	1.28 acres	$54.60	1.28 acres x $42.66/acre
B	Assisted living facility	0.23 acres	$10.66	Less than 0.25 acres; use minimum yearly charge
C	Single family home	1.3 acres	$7.10	Use minimum yearly charge
C	Single-family home	0.18 acres	$7.10	Use minimum yearly charge
D	Horse ranch	4.7 acres	$3.56	Use minimum yearly charge

0000107805

ATTACHMENT 12

Sewer and Storm Water Fees

The charts below provide information on Sewer Fees and Storm Water Fees in the City of Alameda.

SEWER SERVICE FEE, CITY OF ALAMEDA

	FY2016	FY2017 % Increase 3.0%	FY2018 % Increase 3.0%	FY2019 % Increase 3.0%	FY2020 % Increase 3.0%
Single Family ($/month)	$23.93	$24.65	$25.39	$26.15	$26.93
Multi-Family ($/month)	$21.54	$22.19	$22.86	$23.55	$24.26
Commercial Fixed Charge ($/month) (includes first 730 cubic feet)	$21.54	$22.19	$22.86	$23.55	$24.26
Flow-Based Rate ($ per Hundred cubic feet)	$2.96	$3.05	$3.14	$3.23	$3.33

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STORM WATER FEE, CITY OF ALAMEDA

The Fee is based on the amount of pollution that the City estimates enters the municipal storm water system as a result of the installation or maintenance of impervious surfaces.
2,000 square feet of impervious surface = 1 Impervious Surface Unit (ISU)

The Fee is calculated according to the following formula:
Number of Impervious Surface Units **(ISU)**
multiplied by
Fee per Equivalent Residential Unit **(ERU)**

	Storm Water Fee
Typical Single Family Residential Parcel A typical residential parcel has 5,000 square feet of surface area. 40 percent, or 2,000 square feet, is comprised of impervious surface (1 ISU).	**$56.15** (1 Equivalent Residential Unit fee)
Condominium (per unit) A typical condo unit has 600 square feet of impervious surface area (0.3 ISU).	**$16.85** (0.3 x 1 ERU)

Other parcels with Impervious Surfaces are subject to the Fee based upon stated formula Fee: Number of ISUs **multiplied by** Fee per ERU.

STORM SEWER SERVICE CHARGE RATES

The Storm Sewer Service Charge rate structure charges users of the storm sewerage system in San José based on the relative quality and quantity of stormwater runoff contributed by residential, commercial, institutional, and industrial properties. The rate structure apportions the costs of storm sewer service to properties in proportion to their relative contribution of flow and pollution to the storm sewer system.

Rates are computed to recover projected costs of the following:

- Stormwater pollution control and permit compliance
- Management, operation, maintenance, and rehabilitation of the storm sewer system
- Improvements to the storm sewer system
- Street sweeping
- Administrative services

Storm Sewer Service Charge rates are reviewed and adjusted annually, as cost and service demand levels change. The current rate structure for storm sewerage services described below became effective July 1, 2011, with San José City Council adoption of Resolution No. 75857 on June 14, 2011. The rates are structured for the estimated cost recovery requirements and the service demand levels of Fiscal Year 2011-12.

For Fiscal Years 2013-14, 2014-15, 2015-16, 2016-17, 2017-18, 2018-19, 2019-20, 2020-22, 2021-22, 2022-23 and 2023-24 no rate increases were adopted. Rates maintain at the same level as Fiscal Year 2011-12.

If you have questions regarding rates for storm sewage service, please call us at (408) 535-7055.

RESIDENTIAL RATES

Residential Storm Service Charge rates for Fiscal year 2023-24 are as follows:

RESIDENCE TYPE	PER MONTH*	PER YEAR
Single-Family Residence and Duplex	$7.87	$94.44
Large Multiple-Family Residence (5 or more units), Per Unit	$4.30	$51.60
Small Multiple-Family Residence (3-4 Units)	$14.95	$179.40
Residential Condominium, Per Unit	$4.30	$51.60
Mobile Home	$3.94	$47.28
*Monthly charge is used for prorating a partial year charge.		

Residential service charges are placed on the property tax roll and are collected by the Santa Clara County tax collector's office.

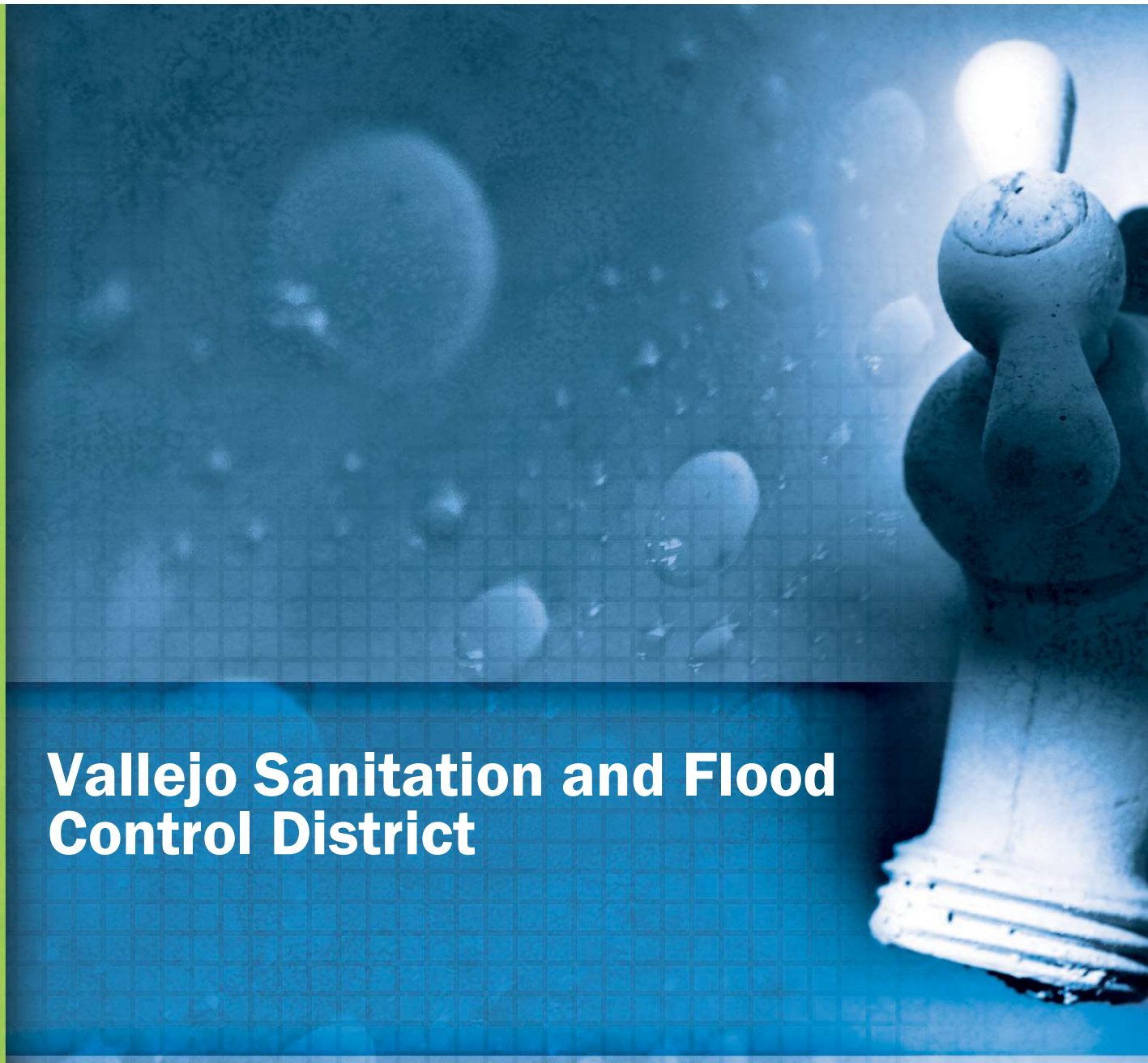
How may I help you?

COMMERCIAL, INSTITUTIONAL & INDUSTRIAL RATES

Commercial, institutional, and industrial classes of rates are for non-residential dischargers to the storm sewerage system, including commercial and light industrial, heavy industrial, parking lots, schools, churches, and colleges, and are calculated individually. Rates for these parcels include a charge based on acreage, reflecting runoff volume, plus a flat charge, reflecting runoff characteristics (pollutants) for that type of discharger. An annual charge is computed for non-residential users using the following unit rates and placed on the property tax rolls for collection by the Santa Clara County Tax Collector's Office.

Commercial, institutional, and industrial Storm Sewer Service rates for Fiscal Year 2023-24 are as follows:

SERVICE TYPE	PER MONTH*		PER YEAR	
	FLAT CHARGE	ACREAGE CHARGE	FLAT CHARGE	ACREAGE CHARGE
Open Space	$13.86 plus	$7.67 / acre	$166.32 plus	$92.04 / acre
School	$13.86 plus	$3.81 / acre	$166.32 plus	$45.72 / acre
Church	$27.73 plus	$7.67 / acre	$332.76 plus	$92.04 / acre
College / University	$27.73 plus	$7.67 / acre	$322.76 plus	$92.04 / acre
Commercial, Light Industrial, and Misc. Premises	$55.45 plus	$13.04 / acre	$665.40 plus	$156.48 / acre
Small Commercial, Light Industrial, and Misc. Premises under .2 acres	$27.73 plus	13.04 / acre	$322.76 plus	$156.48 / acre
Heavy Industrial Premises	$69.32 plus	$13.04 / acre	$831.84 plus	$156.48 / acre
Parking Facility	$55.45 plus	$13.81 / acre	$665.40 plus	$165.72 / acre
*Monthly charge is used for prorating a partial year charge.				



Vallejo Sanitation and Flood Control District

Stormwater Rate Equity Study Final Report

April 3, 2013

Hoag Consulting, LLC

Vallejo Sanitation and Flood Control District

Stormwater Rate Equity Study
Final Report

April 3, 2013

Prepared for:

Vallejo Sanitation and Flood Control District
450 Ryder Street
Vallejo, California 94590

Prepared by:

Hoag Consulting, LLC
Irvine, California

MANAGEMENT CONSULTING FOR MUNICIPAL UTILITIES

HOAG CONSULTING, LLC

37 SILKBERRY, IRVINE, CA 92614
949-923-8293 | HOAGGE@GMAIL.COM

April 3, 2013

Kenneth Spray
Finance Director and Treasurer
Vallejo Sanitation and Flood Control District
450 Ryder Street
Vallejo, CA 94590

Dear Mr. Spray:

Subject: Stormwater Rate Equity Study -- Final Report

In accordance with our agreement dated December 4, 2012 for a Stormwater Rate Equity Study, I am pleased to submit this Final Report. The results of this study are intended to update the current District drainage fee with a fair and equitable fee structure based on the District's costs of service to its customers. The level of these fee-based revenues is targeted at the long-term costs of the District's stormwater services to the Vallejo community.

The current drainage fees are a flat rate of $1.97 per month to each District wastewater account. Our cost of service analysis has indicated that these fees are unfair to many of the stormwater customers. The main source of the inequity stems from the proportionality of the District's costs of service with the land areas of the individual customer parcels (lots), despite the flat rate currently billed to all stormwater discharger regardless of their lot size.

We have evaluated five alternative fee structures to equitably and proportionally recover stormwater service costs. Each alternative is fair and has a legal nexus between the fee and the runoff and pollutant load from the different customers. The five alternatives vary in addressing community needs, especially with respect to level of detail versus ease of understanding and billing for services.

Based on the findings and conclusions discussed in the study, we recommend that the District maintain the current drainage fee of $1.97 per month for single-family residential customers on standard-sized lots, while adjusting the fee for all other customers depending on their estimated stormwater loads. The proposed fee structure uses Equivalent Residential Billing Units (ERBUs) based on the area and type of lot discharging stormwater. While most District customers will not see any change to their fees, or may see modest fee reductions, some will have increases. An in-depth discussion of these recommendations is provided in Chapter 5 of the report.

Thank you very much for the opportunity to deliver this interesting and challenging study. Please contact us if you have any questions or need additional information, and we look forward to meeting with you to discuss the results.

Very truly yours,
HOAG CONSULTING, LLC



Grant Hoag, P.E.
Principal

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List of Acronyms

APN -Assessor Parcel Number

Avg - Average

BMP - Best Management Practice

BC - Brown and Caldwell

Ccf - Hundred cubic feet (748.05 gallons)

CIP - Capital Improvement Program

City – City of Vallejo

Comm – Commercial

CPI - Consumer Price Index

District - Vallejo Sanitation and Flood Control District

DSC - Debt Service Coverage

ENRCCI - Engineering News Record (Magazine) Construction Cost Index

ERBU - Equivalent Residential Billing Unit

excd – excluding

FY - Fiscal Year (July 1 to June 30)

GIS - Geographic Information System

gpd - Gallons per day

HFC - Hundred cubic feet (748 gallons, see also Ccf)

Ind – Industrial

KSF - Thousand Square Feet

mgd - Million gallons per day

NPDES - National Pollutant Discharge Elimination System

O & M - Operation and Maintenance

RWQCB - Regional Water Quality Control Board (Santa Ana Regional Board)

SDMP - Storm Drainage Master Plan

SF - Square Feet or Square Foot

SWRCB - State Water Resources Control Board

TMDL - Total Mass Discharge Limit

USEPA – United States Environmental Protection Agency

VSFCD - Vallejo Sanitation and Flood Control District

ACKNOWLEDGEMENTS

The consultant gratefully acknowledges the assistance of the following District staff:

Ron Matheson, General Manager

Kenneth Spray, Finance Director and Treasurer

Rolf Ohlemutz, Director of Engineering

Dan Tafolla, Environmental Manager

Section 1
Introduction and Background

This report documents the Stormwater Rate Equity Study for the Vallejo Sanitation and Flood Control District (District). The purpose of this study is to identify fair and equitable stormwater drainage fees updating the current fees, and is based on the District's costs of service to each lot discharging stormwater runoff.

The District has identified the costs of capital projects and ongoing operations required to channel and discharge stormwater hydraulic loads from the community, and to prevent and to remediate stormwater-borne pollutants. The costs of the capital projects and budgeted activities are based on the District's required pollutant remediation and control activities under the current State Water Resources Control Board (SWRCB) Regional Board Stormwater Permit.

The current District rate structure is based on a flat monthly fee of $1.97 billed to every City of Vallejo (City) utility customer receiving District wastewater services. This fee takes into account neither the volume of stormwater from each discharger, nor the pollutant loads carried by their runoff. To address this issue, the District has directed this analysis updating the 2004 storm drainage rate equity study with current information on each lot discharging stormwater. The following describes the methodology and criteria for developing the fees.

1.1 Fee Development Criteria

Stormwater fees should allocate costs to each stormwater discharge in proportion to its burden on the utility. As such, the following calculation criteria apply to the development of stormwater fees:

- **Sufficient** – Fees should generate the rate-based revenues needed to recover operation and maintenance (O&M) expenses and capital costs of the program.
- **Equitable** – The fee structure should fairly apportion the costs of providing service among different dischargers (i.e., single-family, residential high density, commercial, and others), such that each discharger class pays a fee proportional to their burden on the utility.
- **Implementable** – Data is available for calculating the charges, and billing does not impose an unreasonable administrative workload.
- **Practical** – The fee structure is easy to understand and acceptable to customers.
- **Compliant** – Fees are developed, authorized and implemented in compliance with applicable state and local regulations and permits, as interpreted by legal authorities.

1.2 Study Organization

This analysis is organized into five sections. This Section provides a general introduction of the District's drainage activities, fee calculation methodology, and a discussion of Proposition 218 issues. Section 2 develops several years of the fee-based revenue requirements based on the projected budget. Section 3 describes the cost of service analysis, development of unit rates, and cost allocations to each discharger class. In Section 4, fee and billing alternatives are described, and in Section 5 the optimum fee structure for billing stormwater services is recommended. Appendix A is an evaluation of the issues and the rate impacts of providing stormwater services without revenues from the tax-exempt parcels serving the community's public schools and parks. Appendix B contains general financial assumptions, plus a summary of the 2010 Census. Appendix C provides an evaluation and summary of the pollutant loading factors for each land use type in the District service area. Appendix D is a summary of the depreciation-related costs of the stormwater facilities. The technical analyses of this report are displayed with rounding to the appropriate figures, while the background technical calculations are without rounding and are interlinked among all tables in the analyses.

1.3 Calculating Stormwater Fees

The calculation steps required in developing stormwater fees are identifying program costs, characterizing dischargers that benefit from stormwater system use, allocating program costs to dischargers, developing a rate structure, and billing and collection. These steps are described below.

Program Costs

Costs are usually divided into two main categories: O&M and capital projects. O&M costs are divided into administration and support, engineering, field operations, environmental and regulatory permitting and enforcement, and facility operations. For development of stormwater fees, both the O&M and capital project costs are functionally categorized as either runoff (flow) or pollutant (quality) related. For example, flood control activities in the O&M budget are allocated solely based on flow-related loads. Capital projects are projects related to rehabilitating, replacing, and expanding infrastructure and do not recur annually.

Customer Characterization

Customers should be classified only enough to support the rational allocation of program costs, and to facilitate billing mechanisms. Discharger customers are usually classified as residential, commercial, industrial, agricultural, landscaped, institutional or undisturbed. Residential categories may be further subdivided into single and high density multi-family subclasses. Typical runoff and pollutant-related loading characteristics are developed for each discharger classification to a level of accuracy sufficient for regulatory defense.

Cost Allocations

O&M and capital-related costs that are allocated to runoff load and quality-related pollutants can then be spread to the dischargers on the basis of the loads estimated to be discharged by each class. In doing so, the costs will be allocated in proportion to the level of stormwater pollutant remediation services the District provides to each class.

Rate Structure

A rate structure refers to the various unit charges that, when billed to the users of the system, equals the total rate-based revenues. The rate structure complexity usually reflects the level of detail in the allocation of costs, which in turn is based on the level of equity desired. This desire for equity must be balanced by the need for fee simplicity.

Billing and Collection

A rate structure should be straightforward, and must not require more data attributes than the billing system can handle. As such, fee equity is limited by the available billing system and usable data attributes. A popular billing option for stormwater programs is fee-based charges on a County Assessor's parcel rolls, another common practice is direct billing of charges on water, sewer and trash utility billing statements.

1.4 General Assumptions

The general financial planning assumptions used in this projection are provided in Appendix B. For the projected study period the inflationary effects on operating costs is based on the San Francisco area Consumer Price Index. Inflationary effects on project costs are based on the multi-year historical average Engineering News Record construction cost index. These general background inflation rates are used to project the future system costs. Finally, medium term interest earning rates are used on year-end fund balances. In order to distribute the costs of funding urgently needed improvements to the drainage system, bond-funding of the capital improvement program is recommended. The District's bonding terms are described in Appendix B.

1.5 Proposition 218

Proposition 218, approved by the state's voters in November 1996, added California State Constitution Articles XIII C and D to the California Constitution. The most important sections to the development of stormwater fees are the definitions of certain words and requirements that limit the implementation of new fees.

The definitions of "fee" or "charge," "property ownership," and "property-related service," found in Article XIII D, Section 2, clarify what a fee is (in contrast to a tax or assessment) and who may be charged a fee. The definitions for these three terms are shown below.

- Section 2(e) "Fee" or "charge" means any levy other than an ad valorem tax, a special tax or an assessment, imposed by an agency upon a lot or upon a person as

an incident of property ownership, including user fees or charges for a property-related service.

- Section 2(g) "Property ownership" shall be deemed to include tenancies of real property where tenants are directly liable to pay the assessment, fee, or charge in question.

- Section 2(h) "Property-related service" means a public service having a direct relationship to property ownership.

Article XIII D, Section 6(c) provides that some fees need to be submitted for voter approval after July 1, 1997. This section states that "Except for fees or charges for sewer, water, and refuse collection services, no property related fee or charge shall be imposed or increased unless and until such fee or charge is submitted and approved by a majority vote of the property owners of the property subject to the fee or charge or, at the option of the agency, by a two-thirds vote of the electorate residing in the affected area."

Note that there is no specific reference to full voter approval when part but not all of a fee structure is modified, thus affecting some but not all rate payers. This would occur if the District left unchanged the current fees for single-family lot accounts, but modified all other fee classes. In this case, only those customers affected by a fee change might receive a ballot. Thus, there is a legal question as to the requirement that all stormwater dischargers have the opportunity to vote, when existing fees are altered for only a few.

Another section, Article XIII D, Section 6(b), Requirements for Existing, New or Increased Fees and Charges, requires that a fee or charge shall not be extended, imposed, or increased unless it meets all of the following requirements:

- Revenues derived from the fee or charge shall not exceed the funds required to provide the property-related service.

- Revenues derived from the fee or charge shall not be used for any purpose other than that for which the fee or charge was imposed.

- The amount of a fee or charge imposed upon any lot or person as an incident of property ownership shall not exceed the proportional cost of the service attributable to the lot.

This section has significant applicability to this study, as it is reasonable to assume that stormwater fees based on the proportional cost of the service should be based on volume of stormwater runoff, and should also take into account the pollutant loads carried by the runoff. Moreover, these requirements may have an effect on the legality of implementing stormwater fee subsidies developed in Appendix A.

1.6 Legal Applicability of this Report

This report includes general summaries of the laws, regulations or court decisions of certain jurisdictions. However, it is not intended as a precise or thorough summary of pertinent legal issues. It should be noted that this report was not prepared or reviewed by an attorney, and it is not intended, and should not be relied upon, as legal advice. Its purpose is to assist in the recognition and analysis of public and financial policy issues. Questions concerning the interpretation or applicability of the legal authorities referenced herein should be referred to the District's legal counsel.

Section 2
Revenue Requirements

This section develops a multi-year projection of the District's stormwater-related costs and fee-based revenue requirements. Also presented are the assumptions used in the development of the annual revenue requirements, and the projected cash flows from the revenues and expenditures, and resulting fund balances. The operating budget for Fiscal Years (FY) 2012-13 and 2013-14, and capital improvement plan for FY 2012-13 through 2014-15 are provided by District staff, while the projected study period through FY 2016-17 is based on inflationary escalations of the operating costs, projected interest earnings on fund balances, and project expenditures in the storm drainage master plan.

2.1 Capital Improvement Program

Table 2-1 presents the expected capital improvement plan for the stormwater program. Projected annual capital expenditures vary from $1.6 million to $3.3 million, and average $2.0 million per year. The largest expenditure is for the White Slough Project budgeted at $4.8 million in FY 15-16. For this analysis that project is presumed to require multiple years for construction, with the first two years at $1.4 million annually.

2.2 Fund Targets

The current capital program is to be funded from cash reserves, reducing the existing fund levels significantly over the projection period. Municipal utility financial policies call for cash reserves for working capital and project expenditure contingencies; the District has targeted a minimum reserve level of $3 million. Other reserves may be required for operating contingencies, self-insurance, and asset rehabilitation and repair funds. This financial plan has been structured for revenue neutrality, to avoid any change in the current reserve levels over the projection period.

2.3 Operating Costs

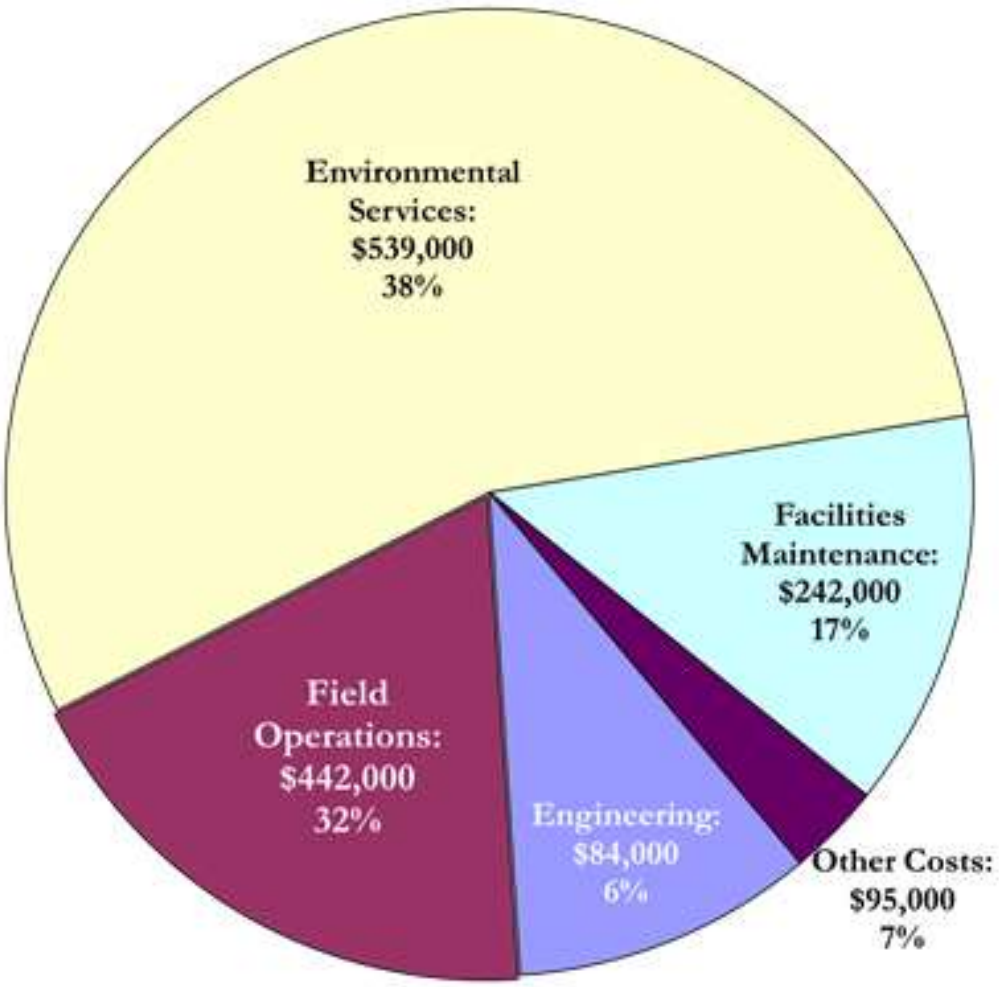
Table 2-2 provides the District's operating budget. As shown, this table includes the current bi-annual (two year) budget ending in FY 2012-13, and the projection through FY 2016-17. The expenditure details include the District's eight main stormwater accounting classifications, with administration and finance activities combined. Also provided is the capital expenditure program developed in the prior table.

As illustrated in Figure 2-1 on the following page, the operating activities include:

- Other costs such as administration, finance and funds for City street sweeping services;
- engineering;
- field operations;

- environmental services; and
- facilities maintenance

Figure 2-1 Operating Cost Allocations



Environmental services are in large part defined by the District's National Pollutant Discharge Elimination System (NPDES) requirement, and include monitoring, permitting, inspection and enforcement. The budget detail is used to categorize the District's stormwater activities and costs. Salaries and benefits and materials and services cost categories have been separated in Table 2-2 to support the anticipated inflationary escalations for the projected years. As provided in Appendix B-1, all inflationary escalations are set at one percent annually. The District's management,

administration and overhead labor cost is split between the wastewater and stormwater utilities on a 90/10 percent ratio.

As shown in the table, inflationary escalations lift the annual operating budget over five years from $1.1 million in FY 2011-12 to $1.2 million in FY 2016-17. Including capital expenditures, the total annual expenditures average $2.9 million per year. Note that depreciation, which is not shown in the operating costs, is a non-cash expense, and is used in this analysis not for cash flow calculations or fee estimates, but rather for determination of cost of service analysis in the following section.

2.4 Fee Based Revenue Requirements

As shown in Table 2-3, the current fee-based revenues of $1.1 million per year are based on a unit rate of $1.97 per month, and a customer base consisting of 48,300 billing units (accounts). The current fee has been in place since 1997, and is, in part, a result of the District's previous reliance on the City's utility billing services for District service charges.

As provided in Table 2-3, the number of billable customers and billing units will be significantly higher in the future. Specifically, when the District implements an in-house billing system capable of identifying and equitably billing all stormwater dischargers, then the number of billing units is projected to increase from 48,300 to approximately 84,000. A single billing unit is defined herein as the burden placed on the District from the stormwater runoff volume and pollutant load from a standard single-family residential lot. This analysis uses an Equivalent Residential Billing Unit (ERBU) to represent this burden.

As a result of the increase in billing units, the annual fee-based revenues are projected to increase from the current $1.1 million to $1.8 million, effective the first full year of updated billing in FY 2013-14. With the new, more equitable billing system, the ERBU rate is left unchanged at $1.97 per month. Also, a conservative safety factor is used on the new billing system, and is set at 20 percent of the calculated ERBUs (8,400 billing units). With this safety factor, an estimated 8,200 calculated billing units will not generate fee revenues during the projection period of this study.

The projected FY 2013-14 increase in revenues is developed in the following section. The increase is due to the new (unsewered) lots to be billed for the first time and the additional ERBUs charged too many of the larger dischargers of stormwater who currently are charged $1.97 per month. The increase in the number of customers is based on adding stormwater discharge lots to the District's customer base, which supplements the City's current customer database of wastewater dischargers. Moreover, the fee structures described in the following sections are based on charges calculated from estimates of the runoff volume and pollutant loads from each lot. For some current customers this will result in higher fees, while for most customers the fee will remain unchanged or even drop.

Table 2-4 provides a projection of annual revenues, expenditures and fund balances based on the findings of the prior tables. It is based on a multi-year calculation of the sources and uses of funds. Non-operating revenues, including interest earnings on annual fund balances at an earnings rate of two percent, connections fees, and contracted service revenues are also incorporated into the projection.

FY 2012-13 is used as the base year for development of cost of service findings, including the unit rates of service. The base year stormwater utility capital improvement program costs are being funded solely from the stormwater utility fund balance, which as of the beginning of FY 2011-12 were $24 million. By the end of the projection period the fund level is projected to decline slightly to $23 million. By that time, the stormwater enterprise will be operating on an essentially revenue neutral basis, with net operating expenditures after operating expenses, interest earnings and contractual service revenues equal to the annual capital project expenditures.

Table 2-1
Project Capital Improvement Program

Project	Total Project Expenditures	Budget FY 2011-12	Budget FY 2012-13	Projection FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17
Budgeted Recurring Capital Projects							
Recurring Replacements	$157,493	$59,743	$19,550	$19,550	$19,550	$19,550	$19,550
Recurring Minor Projects	$699,000	$154,000	$109,000	$109,000	$109,000	$109,000	$109,000
Capital Improvement Plan Projects							
White Slough Project (b)	$3,000,000	$50,000	$50,000	$50,000	$50,000	$1,400,000	$1,400,000
Fairgrounds Channel Phase 2	$450,000			$450,000			
Fairgrounds Drive storm drain	$75,000	$75,000					
Rindler Creek erosion	$500,000			$500,000			
Donner Pass Road phase I	$500,000				$500,000		
Amador / Florida sd improvements	$2,600,000			$1,600,000	$1,000,000		
Skibbereen / Monteith	$500,000			$500,000			
Lake Dalwigk flood control	$1,500,000	$1,500,000					
Twin 54" sd access manhole	$10,000	$10,000					
BW Williams access road	$75,000	$75,000					
Total Program (2012 dollars)		$1,923,743	$178,550	$3,228,550	$1,678,550	$1,528,550	$1,528,550
Plus Inflationary Escalation to Determine "then-current" CIP expenditures				1%	2%	3%	4%
Total Capital Project Cost (then-current dollars)		**$1,923,743**	**$178,550**	**$3,260,836**	**$1,712,289**	**$1,574,867**	**$1,590,615**

Source: Adopted Bi-Annual Budget for FY 12 and beyond. CIP: Capital Improvement Program

b. The White Slough Project CIP cost of $4.8 million in FY 15-16 is reduced to $1.4 million per year for the first two years.

Table 2-2
Operating Budget

Description	Annual Escalation	Budget FY 2011-12	Budget FY 2012-13	Projection FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17
Administration & Finance (3101 & 3103)							
1. Salaries & Benefits	1.0%	$0	$0	$0	$0	$0	$0
2a Matls & Svcs (Street Sweeping, a)	1.0%	$135,000	$135,000	$136,350	$137,714	$139,091	$140,482
2b Materials & Services (Bank svcs)	1.0%	$76,100	$76,900	$77,669	$78,446	$79,230	$80,022
Subtotal		$211,100	$211,900	$214,019	$216,159	$218,321	$220,504
Engineering (3104)							
1. Salaries & Benefits	1.0%	$90,554	$93,749	$94,686	$95,633	$96,590	$97,556
2. Materials & Services	1.0%	$0	$0	$0	$0	$0	$0
Subtotal		$90,554	$93,749	$94,686	$95,633	$96,590	$97,556
Field Operations (3105)							
1. Salaries & Benefits	1.0%	$79,020	$81,792	$82,610	$83,436	$84,270	$85,113
2. Materials & Services (b)	1.0%	$91,000	$91,000	$91,910	$92,829	$93,757	$94,695
Subtotal		$170,020	$172,792	$174,520	$176,265	$178,028	$179,808
Environmental Services (3108)							
1. Salaries & Benefits	1.0%	$249,986	$258,814	$261,402	$264,016	$266,656	$269,323
2. Materials & Services	1.0%	$248,467	$251,776	$254,294	$256,837	$259,405	$261,999
Subtotal		$498,453	$510,590	$515,696	$520,853	$526,061	$531,322
Facilities Maintenance (3109, pump stations)							
1. Salaries & Benefits	1.0%	$57,425	$60,500	$61,105	$61,716	$62,333	$62,957
2. Materials & Services	1.0%	$63,500	$63,500	$64,135	$64,776	$65,424	$66,078
Subtotal		$120,925	$124,000	$125,240	$126,492	$127,757	$129,035
Subtotal Operating Budget		$1,091,052	$1,113,031	$1,124,161	$1,135,403	$1,146,757	$1,158,225
Insurance	1.0%	$24,443	$29,153	$29,445	$29,739	$30,036	$30,337
CIP Project Cash Expenditures		$1,923,743	$178,550	$3,260,836	$1,712,289	$1,574,867	$1,590,615
Total Stormwater Expenditures		$3,039,238	$1,320,734	$4,414,441	$2,877,431	$2,751,660	$2,779,177
Non-capital Expenditure Categories							
1. Salaries & Benefits (a)		$476,985	$494,855	$499,804	$504,802	$509,850	$514,948
2. Materials & Services		$614,067	$618,176	$624,358	$630,601	$636,907	$643,276
8. Insurance		$24,443	$29,153	$29,445	$29,739	$30,036	$30,337
		$1,115,495	$1,142,184	$1,153,606	$1,165,142	$1,176,793	$1,188,561

Source: District Adopted Bi-Annual Budget

a. The Administration & Finance services budget includes $135,000 for transfers to the City for street sweeping.

b. Weed control is 100 percent dedicated to storm water. All other allocations are 90 percent wastewater and 10 percent stormwater, as shown here.

Table 2-3
Fee-based Revenues

Description		Budget FY 2011-12	Budget FY 2012-13	Projection FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17
Current Fee Structure							
Current Monthly Fee ($/month-billing unit)		**$1.97**	**$1.97**				
Current Annual Fee ($/year-billing unit)		$23.64	$23.64				
Current Customers (Accounts)							
Residential Dwelling Billing Units		45,876	45,876				
Commercial Billing Units		2,523	2,523				
Total Billing Units		48,399	48,399				
Adjustment in Billing Units		-75	-370				
Total Budgeted (active) Billing Units		48,324	48,029				
Annual Fee-based Service Charges		**$1,142,380**	**$1,135,406**				
Projected Equitable Fee Structure							
Monthly Projected Fee ($/month-ERBU)				$1.97	$1.97	$1.97	$1.97
Total Annual Fee ($/year-ERBU)				$23.64	$23.64	$23.64	$23.64
Change in Annual Fee				**0%**	**0%**	**0%**	**0%**
Projected Billable Discharge Units							
Residential ERBUs				40,038	40,038	40,038	40,038
Non-residential ERBUs				44,426	44,426	44,426	44,426
Total				84,465	84,465	84,465	84,465
Less Unbillable New Units (a)	Unbillable Rate:		20%	-8,381	-8,381	-8,381	-8,381
Total Billable ERBUs				76,084	76,084	76,084	76,084
Annual Fee-based revenues				**$1,798,623**	**$1,798,623**	**$1,798,623**	**$1,798,623**
Change in Total Rate-based Revenues				**58%**	**0%**	**0%**	**0%**

ERBU: Equivalent Residential Billing Unit represents the drainage loads (flow and pollutants) from a single family residential lot.
a. The unbillable new discharge units represent adjustments to estimated drainage loads from unique dischargers and reductions for unbillable accounts.

Table 2-4
Revenues and Expenditures

Description	Budget FY 2011-12	Base Year (Budget) FY 2012-13	Projection FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17
Budget Expenditures						
O&M Budget Projection						
Administration & Finance	$211,100	$211,900	$214,019	$216,159	$218,321	$220,504
Engineering	$90,554	$93,749	$94,686	$95,633	$96,590	$97,556
Field Operations	$170,020	$172,792	$174,520	$176,265	$178,028	$179,808
Environmental Services	$498,453	$510,590	$515,696	$520,853	$526,061	$531,322
Facilities Maintenance	$120,925	$124,000	$125,240	$126,492	$127,757	$129,035
Insurance	$24,443	$29,153	$29,445	$29,739	$30,036	$30,337
Transfers to Cap Program (d)	$1,923,743	$178,550	$3,260,836	$1,712,289	$1,574,867	$1,590,615
Total Budget	$3,039,238	$1,320,734	$4,414,441	$2,877,431	$2,751,660	$2,779,177
Op Budget Excd CIP & Net of Int & Other Revenues	$149,689	$189,999	$181,084	$220,486	$229,820	$236,710
Fee-based Revenues	$1,142,380	$1,135,406	$1,798,623	$1,798,623	$1,798,623	$1,798,623
Drainage Program Funding Sources (a)						
Beginning fund balance	$24,040,287	$23,359,235	$24,376,091	$22,982,795	$23,098,643	$23,342,579
Receipts from revenues						
Connection Fees (b)	$250,000	$250,000	$250,000	$250,000	$250,000	$250,000
Other revenues	$485,000	$485,000	$485,000	$485,000	$485,000	$485,000
Int earnings on funds (c)	$480,806	$467,185	$487,522	$459,656	$461,973	$466,852
Fee-based revenues	$1,142,380	$1,135,406	$1,798,623	$1,798,623	$1,798,623	$1,798,623
Subtotal	$2,358,186	$2,337,590	$3,021,145	$2,993,279	$2,995,596	$3,000,475
Less expenditures	($3,039,238)	($1,320,734)	($4,414,441)	($2,877,431)	($2,751,660)	($2,779,177)
Ending Fund Balance	$23,359,235	$24,376,091	$22,982,795	$23,098,643	$23,342,579	$23,563,877
Change in fund balance	($681,052)	$1,016,856	($1,393,297)	$115,848	$243,936	$221,298

a. Source: District budget summary for FY 2011-12 & 2012-13, except where noted. Following year interest earnings and service charges are calculated independently.

b. Connection fees in the projection years are based on budget year levels, for stormwater.

c. FY12 and 13 show budgeted values, subsequent years are calculated using 2%.

d. Transfers to (receipt from) the capital program include net revenues, unrestricted and restricted reserves. Receipts from the capital program are held in a restricted reserve and transferred back to the capital program in the following year.

Section 3
Cost of Service Analysis

The purpose of this section is to develop an equitable means of allocating the stormwater utility costs among the different dischargers. This is done by determining the stormwater pollutant and runoff burden placed on the District by the different land usages, and then allocating the stormwater costs associated with that burden to the different land types. Unlike the fee-based revenue calculations of Section 2, the costs in Section 3 are based on long-term average cost of utility service based on using non-cash based depreciation expenses to represent average annual capital costs.

3.1 Calculation of Loads

The stormwater load discharged by a lot represents its proportionate share of the burden on the stormwater system. This load is a tangible measure of the burden from each lot on the stormwater utility's service costs. Estimates of loads from each land use classification (discharge type) are required to equitably bill for services. The total billable stormwater volume is based on the sum of the runoff from each lot within the District's service area. Calculating this runoff uses a basic water resource planning concept: Q = CIA. Specifically, the runoff volume (Q) from a lot equals the runoff coefficient (C) times standard rainfall intensity (I) across the drainage area (A). To estimate the relative load from a single lot, this concept can be used by multiplying the total area of the lot type by the runoff coefficients. Moreover, the concept also can be expanded for use with pollutant loads.

Runoff Loadings

As described above, hydraulic (volumetric) runoff burdens can be estimated using lot size and the coefficients cross-referenced to land use. Alternatively, the use of impermeable area for each lot is used to estimate runoff. Many stormwater utilities develop impermeability estimates for different land use types using statistically significant sampling. This sampling is typically from aerial photography, an expensive process that measures the actual roofline, drive and walkway areas of specific lots. Since development of impermeable characteristics can be difficult and expensive for every lot in a drainage area, this method might be best applied only to very large commercial/industrial lots requiring special attention in line with their higher discharges. For the remainder of the lots, the use of runoff coefficients is recommended to estimate discharger-specific runoff loads for utility billing purposes.

Pollutant Loadings

The steps used to estimate pollutants discharged from different lot types are as follows:

- Identify the pollutants of concern in the stormwater program, based on pollutant remediation activities as specified in the NPDES stormwater permit. Typical programs address stormwater-borne sediments, trash, toxics and hydrocarbons.

- Develop pollutant coefficients for each land use based on the quantity of pollutant discharged per unit of area.

- Allocate pollutant loads to each lot, based on the lot's total area and the applicable pollutant coefficient.

Unit Costs of Service

To allocate program costs among the user classifications, it is also necessary to estimate the unit costs of service. To do this, the stormwater activity costs associated with hydraulic runoff and pollutant loadings are divided by the total runoff and pollutant loads from all dischargers, resulting in the unit costs of the stormwater service for use in developing a fee structure. In the development of unit costs, the actual volume of runoff and pounds of pollutants are less important than the proportion discharged from each land use classification. In this study, estimated runoff and pollutant loads for development of unit costs are defined not in gallons or pounds, but rather in the average discharges from a standard single-family residential lot, and in a thousand square feet (KSF) of land area.

Customer Classifications

The different discharger types for stormwater utility services have been identified using the land use classifications from the County Assessor's Office data. As such, this section assigns stormwater-related pollutant quality and runoff coefficients to different land use classes grouped together into similar classifications for the purposes of equitable utility billing. Moreover, due to the diverse range of single-family lots sizes, that land use type has been divided into two groups, representing standard and large single-family lots.

3.2 Cost Allocations

Table 3-1 allocates the District's stormwater base year budget for FY 2012-13 between runoff (hydrologic) and pollutant (quality-related) activities. As shown, 43 percent of costs are pollutant-related, while the remaining costs are associated with runoff-related stormwater characteristics. While the full O&M budget is used in the analysis, the projected Capital Improvement Program (CIP) expenditures in the base year are replaced with the estimated depreciation for that year. This substitution better represents the average level of annual capital-related costs of the utility for the purposes of the cost of service analysis.

Table 3-1 also identifies program activities directly applicable to residential versus commercial and industrial land use classes, as opposed to those activities generally applicable to all land uses. This information is used in allocating specific costs directly to these classes. This direct allocation is based on the portion of the stormwater activities serving only residential dischargers, such as the residential hazardous waste roundup services, or inspection activities focused on commercial/industrial dischargers. As shown, 72 percent of costs fund general stormwater program activities applicable to all the lots, while 8 percent of the costs are solely applicable to

residential dischargers, and 20 percent are solely applicable to commercial and industrial dischargers.

3.3 Parcel-based Customers

For purposes of developing stormwater discharger classes based on the land uses, the District prepared information on parcel characteristics within the service area boundaries, as defined in the Secured Parcel Rolls as the District's tax rate area. The County records, totaling approximately 41,000 records within the District's tax rate area, contained an Assessor's parcel number, ownership, site address, land use, area and other parcel level information useful to the development of a property-related stormwater fee. This data was cross-referenced by the District's records in the Sungard customer information system. Ninety three percent of the data from both sources were consistent, and the minor differences were used to estimate the correct land uses. Updated stormwater charges must ultimately be based on County or customer-provided data attributes for each individual District account to be used for billing. Table 3-2 provides a tabulated summary of the data. The data used for this analysis is evaluated by customer classification, and is defensible for calculation of charges but does not provide account-level customer attributes required for individual account billings.

3.4 Lot Classifications and Characteristics

The Assessor's land use codes and other parcel characteristics were analyzed by the District in an effort to aggregate land uses with similar stormwater characteristics. The results of the consolidation are shown in Table 3-2. In addition, the single-family parcels were divided into two classes, based on lot area.

The analysis identified approximately 40,100 lots totaling 11,700 acres with 45,900 dwelling units. An additional 873 parcels with 5,003 acres were identified in the District service area, but are not billable. These unbillable areas include city streets and any CalTrans properties, tidal areas, lots without data on ownership or type, and certain governmental parcels.

The single-family residential lots are divided between lots up to 0.24 acres (10,450 square feet (SF), representing a 50 foot by 209 foot area), and lots larger than 0.24 acres. The shift point between a "standard" and large single-family residential lot size is selected to segregate the typical and homogeneous residential lots within the District from the larger single-family lots. The range of single-family residential lot sizes is shown in Figure 3-1 on the following page.

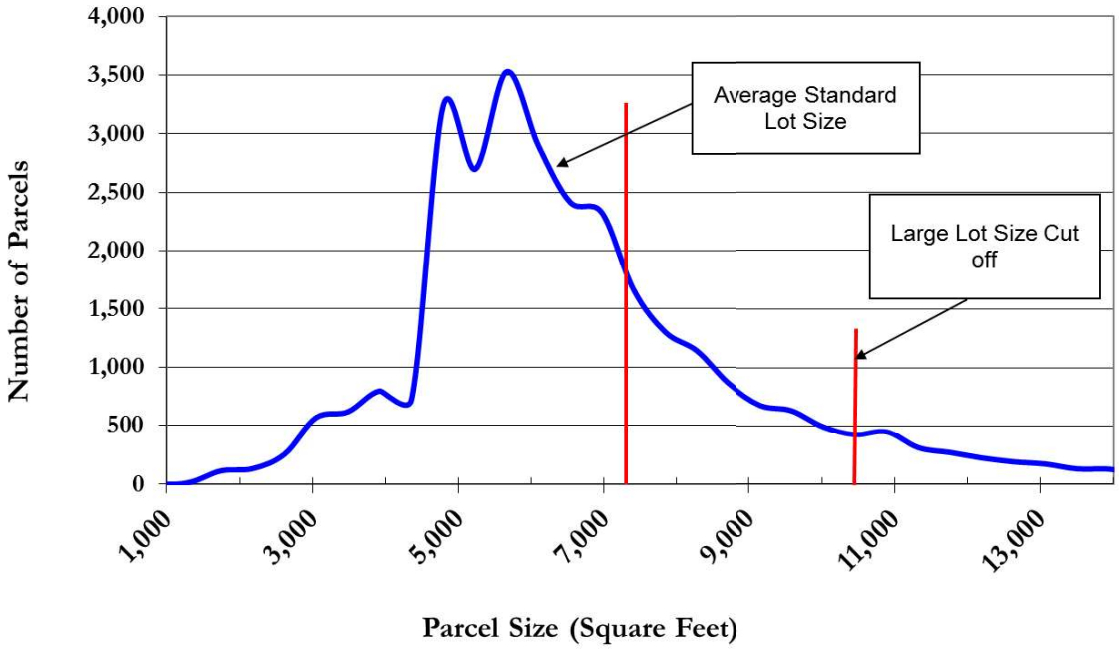


Figure 3-1 Single-family Lot Sizes

Table 3-2 also provides the distribution of the District's lots based on land use. For the purpose of analyzing land use-based customers, the 26 different billable land uses are consolidated into 10 billing classifications. These are:

1. Single-family Standard
2. Single-family Large
3. Residential High Density
4. Mobile homes
5. Commercial
6. Industrial
7. Agricultural
8. Institutional
9. Undisturbed
10. Landscaped

As shown, placing land uses and lot sizes into consolidated classifications simplifies the development of a cost of service analysis. For example, non-residential land use types are consolidated into six classes representing land uses with similar stormwater loading coefficients. In contrast, the existing single-family residential class has been divided into two subclasses. This division is necessitated by the broad range of large residential lot sizes and the differing proportions of impermeable, landscaped, and unimproved areas on each large lot. The residential high density classification includes multi-family dwelling apartment buildings and condominium complexes. Other non-residential parcel classes with complete ownership information are commercial, industrial, agricultural, undisturbed lands and landscaped. The numbers of lots and land areas by these classifications is illustrated in Figure 3-2 on the following page.

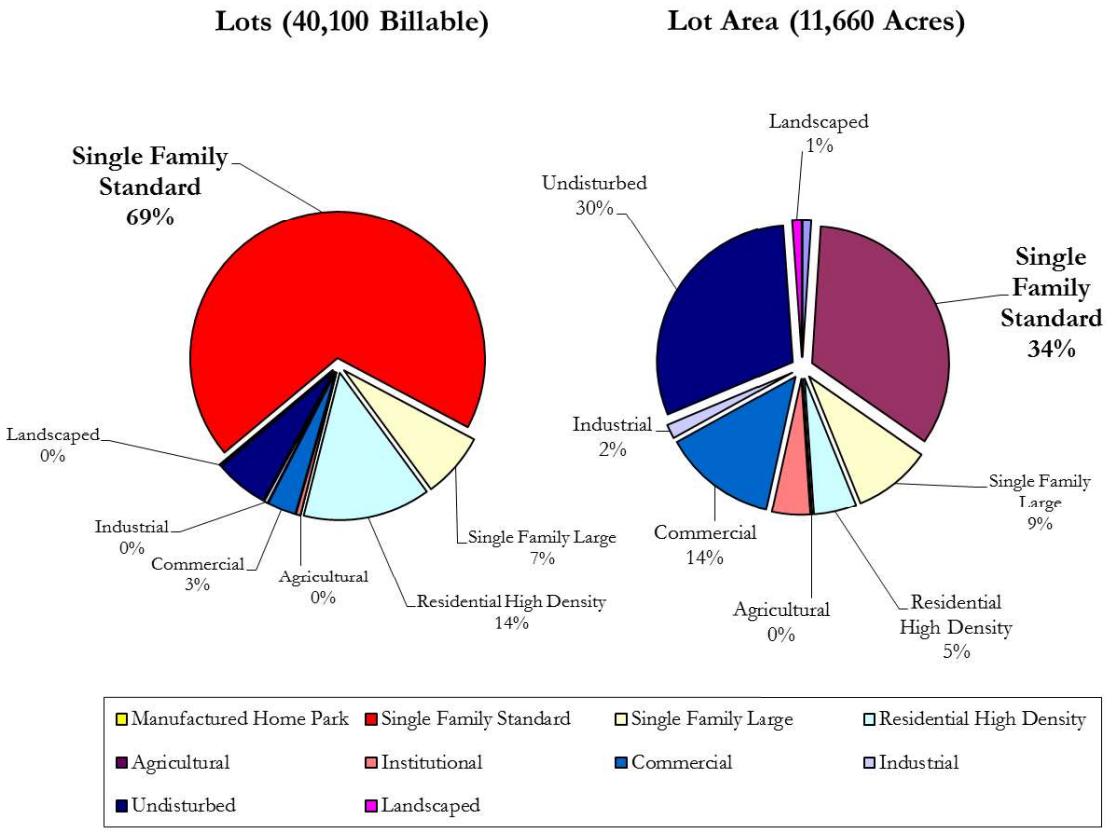


Figure 3-2 Lots and Areas by Classification

Public schools in the institutional class and developed public parks in the landscaped class are available from existing District utility customer databases. However, these tax-exempt lots may lack parcel owner, information, and in some cases may have incorrect land use classifications. See Appendix A for the impact of excluding these lot types from stormwater service billing.

Table 3-3 assigns runoff and quality coefficients to each discharger class. These loading coefficients are cross-referenced with land use types, enabling stormwater program activity costs to be allocated among the different land use types.

3.5 Runoff and Pollution Loading Coefficients

As shown in Table 3-3, information gathered from the District was used to develop runoff coefficients (based on averaged runoff values) for each land use classification.

In addition, the runoff for large residential lots is estimated to have a runoff coefficient equaling that of a combination of single-family, landscaped and undisturbed areas. The residential high density lots are all estimated to have the same high-density urban runoff coefficient. Landscaped areas are primarily irrigated turf, and assumed to have a relatively high 0.5 runoff coefficient, which represents the saturated soil condition from year-round irrigation.

Industrial, commercial, and institutional dischargers are assigned the highest runoff coefficient of 0.95 per unit area. Agricultural land is assigned the lowest runoff coefficient of 0.15. Standard single-family residential lots have a runoff coefficient of 0.70.

Urban stormwater pollution programs are activity driven, and lack direct cross-referencing with particular pollutant loads other than those identified as pollutants of concern in the NPDES permits. However, certain program activities prevent, abate and remediate specific pollutants carried in stormwater runoff. This allows pollutant-related activity costs to be allocated among the different pollutants of concern. Studies regarding the pollutant loads in runoff from differing land use types have provided the technical foundation for allocating the pollutant loads to specific land uses. Thus, like hydraulic loading coefficients, pollutant coefficients cross-referenced with land use types can be developed.

The combination of the two allocations links specific pollutants to specific land uses, and permits pollutant-related costs to be allocated among the different land use types. These quality coefficients by land use type are partially identified in Modeling Stormwater Mass Emissions to the Southern California Bight, Ackerman and Schiff, *Journal of Environmental Engineering*, April 2003. The study was developed from the Southern California Coastal Water Research Project. District staff concluded that the findings developed in the Ackerman study were sufficiently relevant for District lands to be applicable.

Calculations of the pollutant coefficients are provided in Appendix C. Four basic pollutants of concern are used to determine the loadings from each land use type:

- Trash and Solids
- Toxics
- Sediments
- Hydrocarbons

Trash and solid loads are predominately associated with residential, commercial and industrial detritus sediments, like topsoil, and are measured from suspended and settleable solids. Toxics are typically heavy metals, such as copper in brake dust, cadmium, mercury and lead. Hydrocarbons represent the oil and grease loads in runoff flows.

Pollutant load factors have a range of coefficients similar to runoff. However, these coefficients are based on a single-family residential lot having a unitary coefficient of

1.0. As such, other land use types vary from 0.03 units for undisturbed land to 2.78 units for industrial lots.

Using the general cost allocations between runoff and pollutant factors, and the loading factors of each land use, the averaged share of program costs can be allocated to each land use classification. As shown in Table 3-3, the allocations are based on the loading coefficients, and the total lot area of each land use classification, weighted by the stormwater utility costs. The result is that 40 percent of the costs are allocated to single-family standard lots, 7 percent to the larger single-family lots, and 10 percent to undisturbed lots. Note that this allocation does not apply to the 28 percent of utility costs that are directly allocated to specific discharge classes, including residential, commercial and industrial dischargers. These directly allocated costs are addressed in Table 3-4.

Table 3-4 combines the general costs of the utility from the allocations developed in Table 3-3 with the specific costs of each land use class developed previously in Table 3-1. The total equals the base year costs allocated among the billable land use classifications. As provided in Table 3-4, the result is that 33 percent of the cost is allocated to the standard single-family class, 35 percent to commercial lots, and 5 percent to industrial lots.

3.6 Lot Sizes for Residential Dwellings

Table 3-5 lists the different classifications of residential lots within the District, along with the number of dwelling units and the average area for each dwelling unit. As shown, the data indicates that there are approximately 45,900 dwellings on 36,100 lots (with separate owners) in the District.

3.7 Residential Loading Factors

To simplify the fee development process, we have created a standard unit of stormwater loading. This standard unit is based on the stormwater flow and pollutant load from a standard single-family residential lot, and is defined as having 1.0 equivalent residential billing unit (ERBUs). ERBUs are used for development of stormwater fee alternatives in Section 4. In Table 3-6, the number of standard single-family residential ERBUs is set equal to the 27,621 single-family standard lots of that class. The use of ERBUs is consistent with utility ratemaking practices developed by the American Water Works Association for water utility services, and the Water Environment Federation for wastewater utilities.

Calculations in Table 3-6 extrapolate from the standard residential single-family share of ERBUs to the District-wide total loading for runoff and quality (pollutant) allocations, which derives 84,465 total ERBUs in the District. As shown, 57 percent of the District's stormwater-related costs are for collecting, channeling and disposing of runoff, while 43 percent are for preventing or mitigating, pollutant loads in the runoff. It is important to note that with the single-family standard lot discharging

proportionally more runoff than pollutant loads, compared to the other classes, the total number of District-wide pollutant ERBUs is greater than the runoff ERBUs.

In Table 3-7, the number of ERBUs per thousand square feet (KSF) and per acre is developed for each land use class. These values are used to calculate one of several stormwater fee alternatives in Section 4. As shown, the combined stormwater hydraulic and pollutant loads are 7 ERBUs per acre for standard residential single-family lots, which roughly equals the average housing density of this residential class. In contrast, there are 20 ERBUs per acre for industrial land, or three times the loading of residential lots. Also, there are approximately 5 ERBUs per acre for landscaped areas, reflecting the high loads found on those often over-fertilized and over-irrigated lots.

3.8 Comparison of Current versus Equitable Cost Allocations

The current drainage fees are $1.97 per month to each District account. As a result, the District's current utility service revenues are not based on equitable allocations using the actual loads, but instead are divided equally among all wastewater accounts as a flat fee. Table 3-8 contrasts the equitable cost allocations previously provided in Table 3-4 with the current fee allocations. The inequities illustrated in this comparison are based on the need to bill for stormwater services based on the size and type of each lot, rather than using a flat fee added to each of bill.

As shown, undisturbed lots are currently unbilled, but should be paying 6 percent of the total District costs of stormwater services. Commercial, institutional and industrial lots, although billed under the current charge system, should be together paying for 46 percent of the District's stormwater services, but are actually contributing only 5 percent of the fee revenues. In contrast, community residents fund 95 percent of the District's stormwater service revenues, while only 47 percent of the costs can be equitability billed to these dischargers. Residential high density lots in particular are paying 52 percent more than their equitable rate. The analysis also shows that the 2,900 largest single-family lots serviced by the District should be 41 percent more than their current $1.97 per month.

Table 3-1
Runoff and Pollutant Cost Allocations

Stormwater Activity	Activity		Specific Allocations by Class			Base Year Costs (a)
	Runoff	Pollutant	Residential Parcels	Comm. & Ind. Parcels	All Parcels	
Admin Transfer (Street Sweep, b)	0%	100%	60%	40%	0%	$135,000
Admin & Finance (Other, b)	57%	43%	0%	0%	100%	$76,900
Engineering	57%	43%	0%	0%	100%	$93,749
Field Operations	90%	10%	0%	0%	100%	$172,792
Environmental Services (c)	0%	100%	20%	80%	0%	$510,590
Facilities Maintenance	80%	20%	0%	0%	100%	$124,000
Insurance	57%	43%	0%	0%	100%	$29,153
Annual Capital Depreciation (d)	80%	20%	0%	0%	100%	$1,200,000
Total program	57%	43%	8%	20%	72%	$2,342,184
Drainage Program Allocations						
Runoff (hydrologic) Share			0%	0%	100%	57%
Pollutant (strength) Share			18%	46%	36%	43%
Total			**8%**	**20%**	**72%**	**100%**
Runoff (hydrologic) Share			$0	$0	$1,328,600	$1,328,600
Pollutant (strength) Share			$183,118	$462,472	$367,994	$1,013,584
Total			$183,118	$462,472	$1,696,594	$2,342,184

a. Base year operating costs are from the FY 2012-13 budget. The capital element is represented with annual depreciation.

b. The Administration budget is $135,000 for transfers to the City for street sweeping.

c. The Environmental Services budget includes $96,000 - $99,000 for permits, licenses, and assessments Fac. Maint. Is for cleaning of channels and drainage inlets are for hydraulic relief to support runoff flows.

d. Depreciation is used for cost of service evaluations to represent the cost associated with facilities using estimated annual replacement costs.

Table 3-2
Parcel Classifications and Characteristics

Parcel Land Use Types			No. of	Parcel Areas		Dwelling
Code	Description	Classification	Parcels	(Acres)	(Square Feet)	Units
Single Family Lots						
1000	**Lots up to 0.24 Acres (10,450 Sq. Ft.)**	**Single Family Std**	**27,621**	3,941	**171,687,820**	**27,621**
1000	**Lots over 0.24 acres (50 by 209 ft)**	**Single Family Large**	**2,880**	1,078	**46,936,771**	**3,180**
Residential Multi-family Apartments & Single Family Condominiums						
1500/2100	Varies	Resid High Density	5,615	590	25,720,002	13,905
Residential Other Classification						
2700	Manufactured Home Park	Resid High Density	16	119	5,189,303	1,170
Total All Residential Uses			**36,132**	**5,729**	**249,533,896**	**45,876**
Agricultural						
5000	Agricultural	Agricultural	**1**	**6**	**245,678**	
Institutional						
8200/9800	Public School (c)	Commercial	47	377	16,428,654	
8100	Religious Facility	Commercial	145	150	6,541,841	
Total Institutional Properties			**192**	**527**	**22,970,495**	
Commercial Properties						
3300	Mixed Use Commercial & Resident	Commercial	5	0	19,166	
3500	Commercial Sales and Service	Commercial	1,143	1,450	63,157,208	
3800	Hotel, motel	Commercial	31	28	1,231,441	
3400	Gas station	Commercial	60	24	1,043,698	
8300	Hospital	Commercial	14	53	2,322,619	
8700	Clubs and Lodges	Commercial	13	15	639,025	
3100	Marina	Commercial	1	12	531,868	
Total Commercial Properties			**1,262**	**1,582**	**68,925,859**	
Industrial Properties						
4400	Manufacturing/Warehousing (d)	Industrial	**161**	**197**	**8,576,964**	
Vacant/Undeveloped/Undisturbed						
2000	Vacant MFD	Vacant/Undeveloped	96	66	2,884,108	
1100	Vacant residential	Vacant/Undeveloped	620	487	21,223,739	
3000	Vacant commercial	Vacant/Undeveloped	225	533	23,213,995	
9700	Taxable Below Minimum Value (a)	Commercial	1,271	1,209	52,678,850	
4000	Vacant industrial	Vacant/Undeveloped	115	58	2,538,241	
6100	Marshland	Vacant/Undeveloped	6	90	3,906,896	
6400	Range and Watershed	Vacant/Undeveloped	11	1,097	47,765,718	
Total Vacant/Undisturbed			**2,344**	**3,540**	**154,211,548**	
Landscaped						
9800	Public Parks - Developed	Landscaped	21	49	2,123,260	
8400	Cemetery	Landscaped	14	83	3,614,173	
Total Landscaped		Landscaped	**35**	**132**	**5,737,433**	
Total Billable			**40,127**	**11,713**	**510,201,873**	
Areas within District Not Billable - Government, Park & Miscellaneous Parcels						
9800	Government, Park & Miscellaneous (b)	na	873	5,003	217,949,265	
Grand Total District Area			**41,000**	**16,716**	**728,151,138**	

Conversion of Acreage to Square Footage: 43,560

Source: California CAD Solutions, Inc. 31 October 2012. County parcel data. Note that the County does not maintin data on tax-exempt parcels. Mare Island parcels with known parcel attributes are included.

a. The Code 9700 Taxable Below Minimum Value have zero improved values.

b. The Code 9800 Government & Misc parcels have no attributes to identify undeveloped lands vs. improved parklands.

c. Code 9800 parcels identified in the District customer data as school parcels are combined with Code 8200 school lots.

d. A Mare Island parcel of 464 acres is classified herein as commercial sales rather than the County-specificed warehousing

Table 3-3
Runoff and Pollutant Load Coefficients

Drainage Class	No. of Parcels	Total Area		Runoff Load		Pollutant Load		Program Cost Weighted Allocations		
		Square Feet	Share	Coeff (a)	Share	Coeff (b)	Share	Runoff	Pollutant	Total
Mobile home (c)	16	5,189,303	1%	0.80	1%	2.69	2%	1%	0.54%	1%
Single Family Standard	**27,621**	**171,687,820**	**34%**	**0.70**	**41%**	**1.00**	**30%**	**32%**	**7%**	**40%**
Single Family Large (d)	2,880	46,936,771	9%	0.45	7%	0.47	4%	6%	1%	7%
Residential High Density	5,615	25,720,002	5%	0.80	7%	2.69	12%	5%	3%	7%
Agricultural	1	245,678	0%	0.15	0%	2.47	0.1%	0.0%	0.0%	0.02%
Institutional	192	22,970,495	5%	0.95	7%	2.69	11%	6%	2%	8%
Commercial	1,262	68,925,859	14%	0.95	22%	2.69	33%	17%	7%	23%
Industrial	161	8,576,964	2%	0.95	3%	3.06	5%	2%	1%	3%
Undisturbed	2,344	154,211,548	30%	0.20	10%	0.03	1%	8%	0%	10%
Landscaped	35	5,737,433	1%	0.50	1%	1.75	2%	1%	0%	1%
Total Billable Discharges	40,127	510,201,873	100%		100%		100%	78%	22%	100%
Implicit Impermeable Area		295,227,995		**Pollutant Area (e)**		566,330,851		**Runoff**	**Pollutant**	**Total**
							Base Year Allocation Weighting Factor:	$1,328,600	$367,994	$1,696,594
							Costs for Specific Land Use Classes:			$645,590
							FY 2012-13 Annual Cost of Services:			$2,342,184

a. Source: SDMP, as developed from impervious percentages. Landscaped areas are primarily irrigated turf, and assumed to have a relatively high runoff coefficient, per the USDA Natural Resources Conservation Services. Agricultural runoff is estimated based on tilled soil absorption rates.

b. The quality load coefficient reflects the estimated pollutant loads per unit area, as detailed in Appendix C.

c. Mobile homes and residential high density lots are estimated to have the same quality loads.

d. Single family large lots are over 0.24 Acres (10,450 Sq. Ft.). These lots have a combination of single family and undisturbed areas.

e. Pollutant Area represents the square footage of area with a single family standard pollutant loading factor (coefficient) of 1.0.

Table 3-4
Costs Allocated Among Dischargers

Drainage Discharge Class	Program-related Activities: General Costs Percent	General Costs Value	Specific Costs (a) Percent	Specific Costs (a) Value	FY 2012-13 Base Year Costs	Total Share
Mobile home	1%	$27,759	1%	$9,236	$36,996	2%
Single Family Standard	**40%**	**$652,407**	**18%**	**$113,518**	**$765,925**	**33%**
Single Family Large (b)	7%	$109,387	2%	$14,587	$123,974	5%
Residential High Density	7%	$137,585	7%	$45,777	$183,363	8%
Agricultural	0.02%	$560	0%	$0	$560	0.02%
Institutional	8%	$138,383	0%	$0	$138,383	6%
Commercial	23%	$415,236	63%	$405,212	$820,449	35%
Industrial	3%	$53,705	9%	$57,260	$110,965	5%
Undisturbed	10%	$142,133	0%	$0	$142,133	6%
Landscaped	1%	$19,438	0%	$0	$19,438	0.8%
Total	100%	$1,696,594	100%	$645,590	$2,342,184	100%

a. Refer to Table 3-1 for allocations between general and specific costs, and activity costs.

b. Single family large lots are over 0.24 Acres (10,450 Sq. Ft.).

Table 3-5
Residential Lots and Dwellings

Residential Discharge Class	Parcels	Dwelling Units	Avg. Parcel Area (SF)
Mobile homes	16	1,170	4,435
Single Family Standard (a)	**27,621**	**27,621**	**6,216**
Single Family Large (c)	**2,880**	**3,180**	**14,760**
Residential High Density	5,615	13,905	1,850
Total	36,132	45,876	
Apartment Units per Parcel (b)		5.3	

SF: Square Feet

a. The Single Family Standard units are estimated to equal the number of lots.

b. The MFD accounts have an estimated 5.3 dwellings per parcel.

c. Single family large lots are over 0.24 Acres (10,450 Sq. Ft.). There are an estimated 300 additional dwellings on these larger lots.

Table 3-6
Equivalent Residential Billing Units (ERBUs)

Drainage Discharge Class	Activity-based Allocations Base Year Cost of Service (a) Runoff	Pollutants	Total	Equivalent Residential Billing Units (ERBU) Runoff		Pollutants		Weighted Average	
Mobile homes	$18,683	$18,313	$36,996	954	1.4%	2,247	1.8%	1,334	1.6%
Single Family Standard	**$540,847**	**$225,078**	**$765,925**	**27,621**	**40.7%**	**27,621**	**22.2%**	**27,621**	**32.7%**
Single Family Large (b)	$95,052	$28,922	$123,974	4,854	7.2%	3,549	2.9%	4,471	5.3%
Residential Multi-family	$92,597	$90,766	$183,363	4,729	7.0%	11,139	9.0%	6,612	7.8%
Agricultural	$166	$394	$560	8	0.0%	48	0.0%	20	0.0%
Institutional	$98,204	$40,179	$138,383	5,015	7.4%	4,931	4.0%	4,990	5.9%
Commercial	$294,674	$525,774	$820,449	15,049	22.2%	64,522	51.9%	29,587	35.0%
Industrial	$36,669	$74,296	$110,965	1,873	2.8%	9,117	7.3%	4,002	4.7%
Undisturbed	$138,798	$3,335	$142,133	7,088	10.4%	409	0.3%	5,126	6.1%
Landscaped	$12,910	$6,528	$19,438	659	1.0%	801	0.6%	701	0.8%
Total	**$1,328,600**	**$1,013,584**	**$2,342,184**	**67,851**	**100%**	**124,384**	**100%**	**84,465**	**100%**

	Runoff	Pollutant	Total
Proportion	57%	43%	100%

a. Base year operating costs are based on the FY 2012-13 operating budget, plus depreciation.

ERBU: Equivalent Residential Billing Unit represents the drainage loads (flow and pollutants) from a standard single family residential lot.

b. Single family large lots are over 0.24 Acres (10,450 Sq. Ft.).

Table 3-7
Billing Units per Area

Drainage Discharge Class	Total ERBUs	Billable Area (1,000 SF)	ERBUs per KSF	ERBUs per Acre
Mobile homes	1,334	5,189	0.26	11.2
Single Family Standard	27,621	171,688	**0.16**	**7.0**
Single Family Large (a)	4,471	46,937	0.10	4.1
Residential High Density	6,612	25,720	0.26	11.2
Agricultural	20	246	0.08	3.6
Institutional	4,990	22,970	0.22	9.5
Commercial	29,587	68,926	0.43	18.7
Industrial	4,002	8,577	0.47	20.3
Undisturbed	5,126	154,212	0.03	1.4
Landscaped	701	5,737	0.12	5.3
Grand Total	84,465	510,202		

ERBU: Equivalent Residential Billing Unit represents the drainage loads (flow and pollutants) from a standard single family residential lot.
KSF: thousand square feet
a. Single family large lots are over 0.24 Acres (10,450 Sq. Ft.).

Table 3-8
Current Versus Equitable Charges

Drainage Discharge Class	Accounts	Current Billing Dwellings	Current Billing Percent	Equitable Billing Allocations (ERBU) Units	Equitable Billing Allocations (ERBU) Percent	Rate Increase (Decrease) for Equity
Residential						
Mobile home	1,170	1,170	2%	1,334	2%	**14%**
Single Family Standard	27,621	27,621	**57%**	27,621	**33%**	**0%**
Single Family Large (a)	3,180	3,180	7%	4,471	5%	41%
Residential High Density	13,905	13,905	29%	6,612	8%	**-52%**
Subtotal	45,876	45,876	95%	40,038	47%	
Agricultural (b)	-	-	0%	20	0%	Unbilled
Commercial/Industrial						
Institutional	192		0.4%	4,990	6%	Underbilled
Commercial	2,170		4.5%	29,587	35%	Underbilled
Industrial	161		0.3%	4,002	5%	Underbilled
Subtotal	2,523	2,523	5%	38,579	46%	
Undisturbed (b)	-	-	0%	5,126	6%	Unbilled
Landscaped (b)	-	-	0%	701	1%	Unbilled
Adjustment		(75)				
Total Units	48,399	48,324	100%	84,465	100%	

ERBU: Equivalent Residential Billing Unit represents the drainage loads (flow and pollutants) from a standard single family residential lot.

a. The single family large unit fee inequity is for the most numerous lot size in that class. A single family lot with an area larger than 10,450 square feet is classified as a large single family lot for stormwater fee purposes. The number of accounts represent sewer service accounts to households.

b. The agricultural, landscaped and undisturbed lots are currently unbilled.

Section 4
Fee Structure Alternatives

In this section several alternative fee structures are developed, based on the cost of service findings of Section 3. Unlike the full cost calculations of Section 3, the costs and unit rates of Section 4 use the operating revenue requirements of Section 2, which exclude both non-cash based depreciation expenses and capital costs funded from reserves. The fees identified in in this section are based on maintaining the current $1.97 per month charge to residential single-family customers in standard lots (of up to 10,450 SF), while adjusting all other customer fees to be more equitable.

4.1 Billing Methodology Issues

In California, a community's perception and decision to accept a stormwater fee is a key factor in successfully updating fees. In addition to the issues of billing equity and perceived need for stormwater services, the following issues are part of that decision.

Billing Property-related Services

Stormwater service charges require lot area and land usage information, in addition to the other customer information more typically used for utility billing. This information has been developed by the District, and billing for stormwater services will continue to be a District function. As one alternative, stormwater accounts could be billed using area and land information from the County Assessor's Office, and the bills could be issued from that office, if they offer the option. In that case, no cross-referencing of Assessor and District data would be required for issuing bills. Note that the District has a policy of billing residential tenants of lots, whether they are the owner of record or not. As such, it is preferable that stormwater bills continue to be issued from the District's billing services group.

Flat Fees

Stormwater service charges not requiring lot area and land usage information, such as has been identified for single-family standard lots, can be most easily billed on existing utility bills as a separate line item. In this case, there is no need to use County Assessor information or billing services. With single-family standard lots representing the largest customer group, the administrative advantage of flat fees is significant.

Lots Not Receiving Basic Utility Services

For stormwater discharge customers billed solely on land use, such as undisturbed lots, billing using the Assessor's Office will simplify the billing calculation process when compared to the process of cross-referencing the lot-based data with records from another billing system. These areas typically have no other utility services, and also are not easily identified or billed. Parcel-based billing avoids this problem, as lots not currently billed for other District utility services are simply billed through the County Assessor's Office.

Tax-exempt Stormwater Dischargers

Some tax-exempt parcel records are not maintained by County Assessors. As such, tax-exempt lot customers, including school districts, certain churches, military bases, public parks, government and special district-owned land, may not be easily identified or billed. Billing these dischargers requires independent identification using GIS-based information, and annual billing using the District's utility service-based billing mechanism. Based on some interpretations of the implementing requirements of Proposition 218, for stormwater services to be charged equitably, all lots with drainage should be billed regardless of tax status, just as all buildings receiving sewer services must be billed.

Tax- versus Fee-based Billings

Stormwater fees placed on the County Assessor's Office parcel bills may appear as a tax to many property owners, rather than the proportional service-based fee it actually represents. Public perceptions of taxation could reduce support, and so billing on a utility bill may eliminate the impression of the service being a tax.

Billing Cutoff

It is appropriate to determine a minimum billing cutoff point based on the cost of issuing and collecting a charge for a lot. The objective is to avoid billing of lots when the administrative expense of billing is a significant portion of the total bill. For this reason, a billing cutoff of $5 per year is recommended for any lot. With a rate of $23.64 per ERBU in FY 2013-14, the $5 represents 0.21 ERBUs, or 6,363 square feet of undisturbed lot area.

Billing Credits to Public Schools

Since the 1990's, stormwater discharges from the District have been regulated through a series of National Pollutant Discharge Elimination System permits issued by the San Francisco Regional Water Quality Control Board. There may be future opportunities for Vallejo schools to get billing credits by creating storm water detention facilities on larger school sites that reduce their total and especially their peak runoff flows to the District's storm drains.

4.2 Fee Structure Concepts

The allocated costs and discharger characteristics developed in the prior section are the basis for alternative fee structures. The two criteria to consider in creating an appropriate and effective structure are:

- Capabilities of the billing system(s), including level of detail and accuracy of data used in developing the unit fees; and
- Public policy and community goals on stormwater utility fees, especially with respect to level of equity versus ease of understanding and avoiding customer rate shock.

All fee alternatives use the cost of service-based findings and unit fees. However, the following methodologies are available to recover the costs while emphasizing different philosophies.

Lot Size and Load Coefficient Fees

This basic alternative develops unique bills for each lot, based on lot size and land use type. In this alternative, the unit fees for the runoff and pollutant loads are combined, multiplied by the lot size, and billed to the discharger. The advantage of this method is that it is simple and is consistent with the findings of the cost of service calculations. The disadvantage is that for very large, high runoff or unusual lots, this standard coefficient-based fee may not be reflective of the stormwater burden imposed by that lot on the utility. For this reason, an alternative fee structure based on impervious area may be appropriate for certain special dischargers.

Impervious Area Fees

The second fee alternative uses impervious areas rather than runoff coefficients. Very large lots and land with very high runoff values (typically commercial and industrial) may include some dischargers with unusual circumstances. If so, then inequitable stormwater charges can result when calculated using the standardized runoff coefficient methodology. As an alternative to runoff coefficients, impervious areas can be used to estimate more definitive stormwater runoff volumes. In contrast, the pollutant loading coefficients and calculations in this study are based on gross area, as available from County records. Thus, the disadvantage of this structure is the high cost of determining impervious areas for each lot, so its application can be limited to specific lots with unusual or large areas.

Simplified Fees

Fee structures may be simplified in this third alternative when warranted by the cost of service findings and community needs. The simplifications might include:

- Consolidation of the land use classifications into simplified billing classes;
- Replacing variable fees based on unique lot areas for residential dischargers with a flat fee based on the average lot size; and

- Integrating the pollutant and runoff coefficients together by customer class.

These simplifications can be done equitably if supported by the cost of service findings. For example, if it is possible to average and consolidate the land use classifications into simplified billing classes without a material loss of billing equity, then for ease of customer understanding, administrative convenience and practicality it may be appropriate to do so. As a general rule of thumb, qualified by the accuracy of the data, stormwater bills are equitable when they are plus or minus 10 to 20 percent of the cost of service findings. In a similar fashion, a review of the single-family lot sizes may indicate that a significant majority of these dischargers do not vary materially from an average or standard size. If true, then it may be possible to use flat fee bills for all single-family lots of a specific type. As these lot types can represent a significant portion of a community, an enormous simplification of the billing process is possible when warranted by homogenous lot sizes.

4.3 Basic Fee Units

Table 4-1 develops the basic unit fees per ERBU. These fees are divided between the runoff and quality (pollutant) components, and are projected for FY 2013-14. As shown, using a basic unit fee of $1.97 ($23.64 per ERBU-year), the annual fee-based revenues net to $1.8 million. Most revenues will continue to be collected from the single-family lots, followed by commercial and institutional dischargers. This basic fee consists of $16.45 per ERBU for runoff loads and $7.19 per ERBU for pollutant loads. Table 4-1 also allocates the annual fee-based revenue requirements, developed previously in Table 2-2, with each discharger classification, which is determined by dividing the annual revenue requirements by the ERBUs for the runoff- and quality-related components. Based on the recommended $5 per year (0.21 ERBUs) billing cutoff for any lot, an undisturbed lot of less than 6,450 square feet, and an industrial lot with less than 460 square feet, should not be billed.

4.4 Fee Alternatives

The following describes five "a la carte" fee structure options for billing stormwater costs. Some options can stand-alone (i.e. all customers are addressed in the option) while others must be combined with a second option or part of a second option to create a complete rate structure to cover all customers. Each is fair, and is based on the discharger, and the charges billed. However, each represents a differing philosophy and approach to utility revenue development.

Method 1 – Area-Based Fees

Table 4-2 provides area-based load factors, based on ERBUs. A lot-specific fee is determined by multiplying the load factor (based on ERBUs per KSF) by the area of the lot. This value is then multiplied by the billing rate per ERBU effective for that year to determine a bill. For example, a single family parcel would be charged 0.16 ERBUs per KSF, while a commercial lot would be charged 0.26 ERBUs per KSF.

The fees developed in this option are uniquely calculated for each lot based on the size and type of the lot. The advantage of this method is that the land use-based loading factor, like the lot size, is fixed and never changes. Another benefit of this alternative is that only one value (the unit rate of the ERBU) changes from year to year depending on the total program revenue requirements of that year. The disadvantage is that the loading factor unit, defined as ERBUs per thousand square feet for each land use type, is conceptually difficult to understand, which will block community understanding and acceptance. This method can stand-alone or a portion of it could be combined with another method to create a complete fee structure.

Method 2 – Flat Residential Fees

Method 2 is applicable only to the residential class lots; therefore, it must be combined with another method or portion of a method to account for non-residential customers. The objective of this method is to simplify the residential fees as much as possible. It is based on the concept that a flat unvarying stormwater bill is appropriate within a class of uniform dischargers, like residential single-family lots.

As shown in Table 4-3, with Method 2 the monthly single-family flat fees per lot are $1.97 for standard single-family standard lots and $3.06 for large single-family lots. If the two classes of single-family lots are left together, the average fee is $2.07 per month. Note that combining the two subgroups increases the lower fee by 6 percent, but decreases the higher fee by 44 percent (on average). Based on the Section 4 analysis of single-family large lots, the range of areas for the 2,880 lots is significant, so equity is enhanced if flat fees are not used for this group, and the larger single-family lots are segregated from the standard lots.

Also shown in this table are unit fees for residential high density and mobile home lots, at $0.94 and $2.25, respectively. Combined, these high density dwellings average $1.04 per month per dwelling unit. Based on Assessor's Office data, the relatively few dwellings in the mobile home category have runoff loads equivalent to single-family standard lots. However, data for mobile home parks is frequently inaccurate, and these tenants are better classified with other renters. For administrative convenience, the mobile homes can be combined with the other high density residents.

The advantage of Method 2 is that it is easy to understand and to apply, and equitable for homogenously sized lots, especially if the residential groups are reduced to single-family lots and residential high density. However, disadvantages are:

- Stormwater loads have a causal relationship to the number of dwelling units per lot, so the fee equity is less than perfect. Specifically, residential lot stormwater loads vary based on lot area, while the bills based on dwelling units are fixed.

- This option cannot be applied to non-residential lots; therefore, it must be combined with another option to create a complete rate structure.

Based on Section 3 findings, stormwater service billing equity can be achieved with flat rates applied to single-family standard lots and all residential high density tenants. The single-family large lots should be billed at the higher average rate of that residential subgroup.

Methods 3 and 4 – Runoff and Pollutant Fees

The two alternatives presented in Table 4-4 provide rates per unit area (1,000 square feet). Method 3's unit rates are based on separate runoff and pollutant-related revenue requirements for each land use classification, divided by the total area of each. Based on this methodology, a standard single-family discharger pays $2.69 plus $1.12 (Method 3), or $3.80 total (Method 4) per thousand square feet of lot area. The advantage of Method 3 is that it uses an easily understood concept of unit rates per area, and provides a high level of detail on the runoff and pollutant-related basis of the charge. The primary disadvantage of the method is that few stormwater customers require this level of detail in their billing documentation. The advantage of Method 4 is that it is simple to use and understand, and is similar to sewer utility bills with the different unit rates for different discharger types.

The two-tier calculation method (as described in Method 1) is also provided for both the large single-family lots. As shown, the stormwater fee is based on a rate of $2.25 per thousand square feet of single family large lot size. This rate is lower than standard single-family lots, based on the concept that large lots have more landscaped and undisturbed areas than smaller residential lots, and thus have proportionally lower loading coefficients.

Also provided in the table is a base year unit runoff fee of $3.84 per 1,000 square feet of impermeable area and unit pollutant fee of $1.53 per 1,000 square feet of single-family standard area (area with a 1.0 pollutant coefficient). These unit fees are used to determine appropriate stormwater fees for unique lots independently evaluated by the District. Both methods 3 and 4 are stand-along methods since all customers are represented.

Method 5 – Billing Classifications

This final method is for simplifying non-residential dischargers into three basic groupings. This simplification is based on the three groups used for the District's non-residential sewer utility dischargers. Group I includes relatively light runoff loads, Group II includes medium runoff load dischargers, and Group III is for the heaviest runoff and pollutant dischargers. The unit rates can be contrasted to the rates shown in Method 4. As shown, the annual unit rates per thousand square feet are $0.79, $4.66 and $10.25 for Groups I, II, and III, respectively. This method must be combined with the residential portion of another method to achieve a complete fee structure.

4.5 Combination of Methods

The following combinations are just some of the possibilities for a complete fee structure that represents all customers in the District.

- Method 1– area-based fees
- Method 2 – flat residential fees plus Method 1 for non-residential lots
- Method 3 – individual runoff and pollutant fees
- Method 4 – combined fee from the runoff and pollutant elements
- Method 2 for residential lots plus Method 3 – individual runoff and pollutant fees for non-residential lots
- Method 2 for residential lots plus Method 4– combined fee from the runoff and pollutant elements for non-residential lots
- Method 2 for residential lots plus Method 5 – billing classifications for non-residential lots
- Method 5 for non-residential lots plus Method 1 for residential lots
- Method 5 for non-residential lots plus Method 3 for residential lots
- Method 5 for non-residential lots plus Method 4 for residential lots

Table 4-1
Projected Unit Fees

Description	Equivalent Residential Parcel Units (ERBU, a)			FY 2013-14 Annual Fee-based Revenues (a)		
	Runoff	Pollutants	Total	Runoff	Pollutants	Total
Allocations				57%	43%	100%
Revenues & ERBUs	67,851	124,384	84,465	$1,132,648	$864,093	$1,996,741
Unit fee ($/ERBU-Year)	67,851	124,384	84,465	$16.69	$6.95	$23.64
Projected ERBU and fee-based revenues detailed by customer classification (FY 2013-14)						
Residential Mobile home	954	2,247	1,334	$15,927	$15,612	$31,539
Single Family Standard	**27,621**	**27,621**	**27,621**	**$461,079**	**$191,882**	**$652,960**
Single Family Large (b)	**4,854**	**3,549**	**4,471**	**$81,033**	**$24,656**	**$105,689**
Residential High Density	4,729	11,139	6,612	$78,940	$77,379	$156,319
Agricultural	8	48	20	$141	$336	$477
Institutional	5,015	4,931	4,990	$83,720	$34,253	$117,973
Commercial	15,049	64,522	29,587	$251,214	$448,229	$699,443
Industrial	1,873	9,117	4,002	$31,260	$63,338	$94,599
Undisturbed	7,088	409	5,126	$118,327	$2,843	$121,170
Landscaped	659	801	701	$11,006	$5,565	$16,571
Subtotal FY 2013-14	67,851	124,384	84,465	$1,132,648	$864,093	$1,996,741
Less Unbillable New Charges (est., c)						($198,118)
Total projected Fee-based revenues						$1,798,623

Minimum Annual Bill for Area-based Fees	Billing Cutoff Point	ERBUs	ERBUs per KSF	Min. Billable Area (Sq. Ft.)
Minimum Annual Bill for Area-based Fees	$5.00	0.21		
Single Family Standard			0.16	1,315
Agricultural			0.08	2,574
Institutional			0.22	974
Commercial			0.43	493
Industrial			0.47	453
Undisturbed			0.03	6,363
Landscaped			0.12	1,731

ERBU: Equivalent Residential Billing Unit represents the drainage loads (flow and pollutants) from a single family residential lot.

a. The fee-based revenues include unbillable accounts that are excluded from the projected revenues shown in Chapter 2.

b. Single family large lots are over 0.24 Acres (10,450 Sq. Ft.).

c. The unbillable new charges represent an adjustment to the future revenues based on a conservative projection on new accounts and updated bills.

Table 4-2
Fee Alternative 1 -- Fees per ERBU

Drainage Discharge Classification	ERBUs per Thousand Square Feet
Residential Mobile home lot	0.26
Single Family Standard	**0.16**
Single Family Large (a)	0.10
Residential High Density	0.26
Agricultural	0.08
Institutional	0.22
Commercial	0.43
Industrial	0.47
Undisturbed	0.03
Landscaped	0.12

FY 2013-14 Unit Rate ($ per ERBU)	Fee
Monthly	$ 1.97
Annual	$ 23.64

ERBU: Equivalent Residential Billing Unit represents the drainage loads (flow and pollutants) from a single family residential lot.

a. Any single family lot with an area larger than 10,450 square feet is classified as a large single family lot for stormwater fee purposes.

Table 4-3
Fee Alternative 2 -- Flat Residential Fees

Drainage Discharge Classification	FY 2013-14 Revenue	Units	Flat Fee ($ per Dwelling Unit) Annual	Monthly
Single Family		**Lots**		
Standard Lot Size (up to 10,450 Sq. ft.)	**$652,960**	**27,621**	**$23.64**	**$1.97**
Single Family Large Lot (a)	$105,689	2,880	$36.70	$3.06
Average Single Family Residential	$758,650	30,501	$24.87	$2.07
Residential High Density		**Dwellings (a)**		
Mobile homes (rate per dwelling unit)	$31,539	1,170	$26.96	$2.25
Residential High Density (rate per dwelling unit)	$156,319	13,905	$11.24	$0.94
Average Residential High Density	$187,858	15,075	$12.46	$1.04

This alternative does not apply to non-residential parcel billing, and does not bill based on lot size.

This alternative must be combined with at least one of the other alternatives.

a. Any single family lot with an area larger than 10,450 square feet (0.24 acres) is classified as a large single family lot for stormwater fee purposes.

Table 4-4
Fee Alternatives 3 and 4 -- Runoff, Pollutant and Combined Fees per Area

Drainage Discharge Class	FY 2013-14 Revenue Requirement Runoff	Pollutants	Total	Total Area (1,000 Square Feet)	Alternative 3 Unit Rates ($ per 1,000 Sq. Ft.-Yr.) Runoff	Pollutants	Alt. 4 Combined
Mobile home	$15,927	$15,612	$31,539	5,189	$3.07	$3.01	$6.08
Single Family	**$461,079**	**$191,882**	**$652,960**	**171,688**	**$2.69**	**$1.12**	**$3.80**
Single Family Large (a)	$81,033	$24,656	$105,689	46,937	$1.73	$0.53	$2.25
Residential High Density	$78,940	$77,379	$156,319	25,720	$3.07	$3.01	$6.08
Agricultural	$141	$336	$477	246	$0.58	$1.37	$1.94
Institutional	$83,720	$34,253	$117,973	22,970	$3.64	$1.49	$5.14
Commercial	$251,214	$448,229	$699,443	68,926	$3.64	$6.50	$10.15
Industrial	$31,260	$63,338	$94,599	8,577	$3.64	$7.38	$11.03
Undisturbed	$118,327	$2,843	$121,170	154,212	$0.77	$0.02	$0.79
Landscaped	$11,006	$5,565	$16,571	5,737	$1.92	$0.97	$2.89
Total	$1,132,648	$864,093	$1,996,741	510,202			
Total Billable Area	295,228	566,331	(1,000 Sq. Ft. of Impermeable or Pollutant Area)				
Special Lot Unit Rate	$3.84	$1.53	($ per Applicable 1,000 Square Feet)				
	Per Impermeable Surface Ksf Area	Per Std Pollutant Ksf Area (b)					

Unit rates are annual charges.

a. Any single family lot with an area larger than 10,450 square feet is classified as a large single family lot for stormwater fee purposes.

b. Pollutant Area represents the square footage of area with a single family standard pollutant loading factor (coefficient) of 1.0. Multiply the unit rate by the appropriate pollutant coefficient and the actual land area to determine the total annual charge.

Table 4-5
Fee Alternative 5 -- Simplified Non-Residential Customer Classifications

Drainage Discharge Class	FY 2013-14 Revenues	Total Accounts	ERBUs	Thousand Square Feet	Fees per 1,000 Sq. Ft. Annual	Fees per 1,000 Sq. Ft. Monthly
Non-Res Group I Light Runoff Loads	$121,170	2,344	5,126	154,212	$0.79	$0.07
Non-Res Group II Medium Runoff Loads	$135,022	228	5,712	28,954	$4.66	$0.39
Non-Res Group III Heavy Runoff Loads	$794,041	1,423	33,589	77,503	$10.25	$0.85

ERBU: Equivalent Residential Billing Unit represents the drainage loads (flow and pollutants) from a single family residential lot.
Group I Light Runoff Loads: Undisturbed
Group II Medium Loads: Agricultural, Landscaped, and Institutional
Group III Heavy Loads: Commercial and Industrial
This alternative must be combined with at least one other alternative.

Section 5
Recommended Fees

Based on the analysis of this study, and discussions with District staff, we recommend that the District stormwater program fees be based on a combination of Method 2 – Flat Residential Fees, Method 4 – combined fee from the runoff and pollutant elements for special lots, and Method 5 – Billing Classifications for non-residential lots, with a standard fee of $23.64 per ERBU enacted in FY 2013-14.

5.1 Recommended Fees

The recommended fee structure, as shown in Table 5-1, uses the Method 2 flat fee for all three residential types: standard single family residential (fee per dwelling), single family large lot (fee per lot), and residential high density (fee per dwelling). These groupings have relatively homogenous lot sizes, and a flat fee can be equitably charged to each.

For all remaining (non-residential) lots, the three area-based fee groups identified in Method 5 are recommended. As shown, these FY 2013-14 fees per land use type range from $0.79 annually per thousand square feet of light runoff load area to $10.25 for heavy runoff load areas. No annual bill below $5 is to be issued for any non-residential lot; the minimum lot size cutoff is provided for each billing classification.

Also identified in the recommend fee structure are the unit rates for special lots with unusual runoff (from Method 4). These unit rates are to be used by the District Engineer for developing stormwater fees for unique lots not conforming to the typical lots used to develop this recommended fee structure. For these lots, the Engineer can determine the hydraulic loading fee by multiplying the runoff fee times the effective impermeable area of the lot. The pollutant fee is calculated by multiplying the pollutant base fee by the effective pollutant coefficient for that lot (a single-family standard coefficient is 1.0) times the actual land area. Credits can then be deducted from the combined total fee for any voluntary on-site stormwater load remediation facilities, including grassy swales and detention basins.

Table 5-2 cross-references the County Assessor's Office land use codes with the recommended fee group classifications.

5.2 Comparison with Current Bills

Table 5-3 lists the monthly bills for different lots, which include both flat fees and variable (area-based) fees. For approximately 27,600 standard single-family lots, a flat monthly fee of $1.97is projected as unchanged in FY 2013-14. For the 5,600 residential high density accounts, the recommended per dwelling fee is reduced by 47 percent. As such, the average residential property owner with three apartments will see a drop in monthly charges, from $5.91 to $3.12.

For the remaining lots within the District fee increases of varying amounts should be expected. There are 2,900 large single-family residential lots; the recommended area-based fees for these parcels will increase to $3.06 per month from the current $1.97.

Table 5-3 also provides examples of recommended bills for the three non-residential fee groups, with the projected bills based on the average lot size in each classification. As shown, the typical Group I unimproved lot is currently unbilled. With an average area of approximately 1.5 acres, the recommended bill will be $4.31 per month. Group II dischargers have medium runoff loads. The average lot has almost three acres, and will have a recommended monthly fee of $49. Group III dischargers have heavy runoff loads. The average lot has 1 ¼ acres, and will have a monthly fee of $47. Table 5-4 provides a range of lot sizes for the standard and large single-family lots.

5.3 Fee Protest Procedures

A stormwater billing ordinance should include protocols for fee disputes and requests for runoff mitigation credits. In particular, a significantly increased fee requires a clear and accessible dispute option for dischargers seeking relief from perceived or actual inequities. Protests typically arise when a parcel owner feels the runoff units of the land use classification do not accurately represent the actual conditions of the land, and a review of the bill is needed. The stormwater fee protest protocol would require any discharger seeking a review of their bill to submit a plan of their property with a validated calculation of impervious area. Benefits of this procedure are that:

- It creates a mechanism for fee challenges,
- It is more exact than the runoff-based method, and
- It requires a challenger to substantiate a claim.

As such, frivolous challenges are minimized, while valid claims are equitably addressed.

Protests based on the validity of the hydraulic runoff and quality-related pollutant coefficients cannot be addressed at an account level, as changing the coefficients for one but not all other lots in a land use classification is inequitable. Instead, development of unique impermeability area values for certain lots are required. Moreover, the inclusion of certain land use classes into stormwater billing classifications, shown in Table 5-2, could be subject to adjustment if warranted by new information. Finally, if on-site facilities exist for runoff or pollutant remediation (beyond those facilities required for new construction), then an adjustment of the pollutant load coefficient may be appropriate. It is a common practice to contact the top dischargers of each billing class to verify the appropriateness of the proposed bills, and to provide them with a heads-up to the increases.

5.4 Mitigation Credits

To increase the District's flexibility in equitably billing dischargers on unique lots providing on-site stormwater pollution controls, a mitigation credit protocol can be added to the fee structure. Mitigation credits apply to lots that have on-site, man-made stormwater pollution and/or runoff management facilities. A mitigation credit is justified in that a lot with an on-site voluntarily built stormwater facility will generate less volume and/or less pollutant loads than that lot before the facility is built. These mitigation credits would be of interest to large lot owners, in order to reduce their fee under the proposed billing structure.

Currently any new property development is required to provide stormwater retention and/or pollutant remediation facilities. However, these facilities are to mitigate the impact of new and increased loads from new development. The District is controlling existing stormwater loads with control activities supported by all dischargers communitywide. As such, no credit should be offered to new lots simply complying with District requirements.

The extensive use of flat fees precludes the possibility of credits, as flat fees are simple for the reason that they do not recognize load variations within a class. A credit for a discharger paying a flat fee will contradict the principal behind the flat fee basis, and open the billing method to broad conceptual challenges. Moreover, as a discharger on a flat fee is not likely to build any cost effective mitigation facilities, flat fees should be used only on smaller lots with lower loads. For this reason, credits are not recommended of any dischargers under a flat fee, including single-family standard lots. Calculation of credit values should be based on the unit rates for differing discharge loads developed in Table 3-3.

Table 5-1
Recommended Fees

Drainage Discharge Class	Current Fee/Bill	Projection FY 2013-14	FY 2014-15	FY 2015-16	FY 2016-17
Basic Unit Rates					
$ per Year - ERBU	$23.64	$23.64	$23.64	$23.64	$23.64
Base Fees per Dwelling Unit		**Fee per Dwelling Unit ($ per year)**			
Residential High Density	$23.64	$12.46	$12.46	$12.46	$12.46
Single Family Standard (a)	$23.64	$23.64	$23.64	$23.64	$23.64
Single Family Large Lot (a)	$23.64	$36.70	$36.70	$36.70	$36.70
Area-based Fees (b)	**Fee per Thousand Square Feet ($ per year)**				
Non-Res Group I Light Runoff Loads		$0.79	$0.79	$0.79	$0.79
Non-Res Group II Medium Runoff Loads		$4.66	$4.66	$4.66	$4.66
Non-Res Group III Heavy Runoff Loads		$10.25	$10.25	$10.25	$10.25
Group IV Special (Two-part Rate per 1,000 Square Feet)					
Runoff Fee per Impermeable 1,000 Sq. Ft.		$3.84	$3.84	$3.84	$3.84
Pollutant Base Fee per 1,000 Sq. Ft. (c)		$1.53	$1.53	$1.53	$1.53

Minimum Bills (b)	Minimum Annual Bill	ERBUs	ERBUs per KSF	Min. Billable Area (Sq. Ft.)
Minimum Annual Bill	$5.00	0.21		
Group I Light Runoff Loads			0.03	6,363
Group II Medium Runoff Loads			0.20	1,072
Group III Heavy Runoff Loads			0.43	488

ERBU: Equivalent Residential Billing Unit represents the drainage loads (flow and pollutants) from a single family residential lot. KSF: Thousand square feet.

a. Any single family lot with an area larger than 10,450 square feet is classified as a Single Family Large Lot for stormwater fee purposes.

b. The minimum annual bill for ERBUs of 0.13 and greater is as shown in the table. ERBUs below 0.13 will not be billed.

c. Multiply the pollutant base fee by the appropriate pollutant coefficient (single family standard coefficient is 1.0) and the actual land area to determine the annual pollutant charge.

Table 5-2
Recommended Lot Classifications

County Assessor's Parcel Classification		Recommended	ERBUs per Acre
Land Use Code	Description	Drainage Classification	Calculated
1000	Lots up to 0.24 Acres (10,450 Sq. Ft.)	Single Family Standard	7.0
1000	Lots over 0.24 Acres (50 by 209 ft)	Single Family Large	4.1
1100	Vacant SFD (undeveloped land)	Group I Light Runoff Loads	1.4
1500	Single Family Condominiums	Residential High Density	11.2
2000	Vacant MFD (undeveloped land)	Group I Light Runoff Loads	1.4
2100	Improved Multiple Residential	Residential High Density	11.2
2700	Mobile Home Park	Residential High Density	11.2
3000	Vacant commercial (undeveloped land)	Group I Light Runoff Loads	1.4
3100	Marina, docks	Group III Heavy Runoff Loads	
3300	Mixed Use Commercial & Resident	Group III Heavy Runoff Loads	
3400	Service station	Group III Heavy Runoff Loads	
3500	Commercial Sales and Service	Group III Heavy Runoff Loads	18.7
3800	Hotel, motel	Group III Heavy Runoff Loads	
4000	Vacant industrial (undeveloped land)	Group I Light Runoff Loads	1.4
4400	Manufacturing/Warehousing	Group III Heavy Runoff Loads	20.3
5000	General	Group II Medium Runoff Loads	
6100	Marshland	Group I Light Runoff Loads	
6400	Range and Watershed	Group I Light Runoff Loads	1.4
8100	Church	Group II Medium Runoff Loads	
8200	Public School - Developed	Group II Medium Runoff Loads	
8200	Public School - Undeveloped	Group I Medium Runoff Loads	
8300	Hospital	Group III Heavy Runoff Loads	
8400	Cemetery	Group II Medium Runoff Loads	
8700	Clubs and Lodges	Group III Heavy Runoff Loads	
9700	Taxable Below Minimum Value	Not Billable	
9800	Public Parks - Landscaped	Group II Medium Runoff Loads	5.3
9800	Public School - Developed	Group II Medium Runoff Loads	
9800	Undeveloped	Group I Light Runoff Loads	1.4
9800	Govern & Misc (excd schools/parks)	Not Billable	
9999	Newly Created Lots	Not Applicable	

			Calculated	Classified
1100	Vacant SFD	Group I Light Runoff Loads	1.4	1.4
2000	Vacant MFD	Group I Light Runoff Loads	1.4	1.4
3000	Vacant commercial	Group I Light Runoff Loads	1.4	1.4
4000	Vacant industrial	Group I Light Runoff Loads	1.4	1.4
6100	Marshland	Group I Light Runoff Loads		1.4
6400	Range and Watershed	Group I Light Runoff Loads	1.4	1.4
9800	Undeveloped	Group I Light Runoff Loads	1.4	1.4
5000	General	Group II Medium Runoff Loads		8.6
8100	Church	Group II Medium Runoff Loads	9.5	8.6
8200/9800	Public School	Group II Medium Runoff Loads	9.5	8.6
8400	Cemetery	Group II Medium Runoff Loads	5.3	8.6
9800	Public Parks - Landscaped	Group II Medium Runoff Loads	5.3	8.6
3100	Marina, docks	Group III Heavy Runoff Loads		18.9
3300	Mixed Use Commercial & Resident	Group III Heavy Runoff Loads		18.9
3400	Service station	Group III Heavy Runoff Loads		18.9
3500	Commercial Sales and Service	Group III Heavy Runoff Loads	18.7	18.9
3800	Hotel, motel	Group III Heavy Runoff Loads		18.9
4400	Manufacturing/Warehousing	Group III Heavy Runoff Loads	20.3	18.9
8300	Hospital	Group III Heavy Runoff Loads		18.9
8700	Clubs and Lodges	Group III Heavy Runoff Loads		18.9
9999	Newly Created Lots	Not Applicable		na
9700	Taxable Below Minimum Value	Not Billable		na
9800	Govern & Misc (excd schools/parks)	Not Billable		na
1500	Single Family Condominiums	Residential High Density	11.2	11.2
2100	Improved Multiple Residential	Residential High Density	11.2	11.2
2700	Mobile Home Park	Residential High Density	11.2	11.2
1000	Lots over 0.24 acres (50 by 209 ft)	Single Family Large	4.1	4.1
1000	Lots up to 0.24 Acres (10,450 Sq. Ft.)	Single Family Standard	7.0	7.0

Table 5-3
Current Versus Proposed Bill Comparison

Classification	Accounts	Current Bill ($ per Month)	Fee Basis	FY 2013-14 Bill ($ per Month)	Change
Residential Rates					**Percent**
Residential High Density (a)	5,631	$5.91	3 Dwellings	$3.12	-47%
Single Family Standard	**27,621**	**$1.97**	**1 Dwelling**	**$1.97**	**0%**
Single Family Large (b)	2,880	$1.97	1 Lot	$3.06	55%
Non-residential Rates			**Lot Size (1,000 Sq. Ft.)**	**Fee ($/1,000 Sq. Ft.)**	**Average Bill ($/month)**
Non-Res Group I Light Runoff Loads	2,344	unbilled	65.8	$0.07	$4.31
Non-Res Group II Medium Runoff Loads	228	$1.97	127.0	$0.39	$49.35
Non-Res Group III Heavy Runoff Loads	1,423	$1.97	54.5	$0.85	$46.50

a. There are an average of 2.8 dwelling units per water meter based account.
b. The average Single Family Large lot is 14,800 square feet. Any single family lot with an area larger than 10,450 square feet is classified as a large single family lot for stormwater fee purposes. These lots will have a base fee equivalent to non-large lot Single Family customers, plus a fee per 1,000 Sq. Ft. rate over 10,450 Sq. Ft.

Table 5-4
Proposed Single Family Bills

Lot Size Category		Number	Avg. SF	Annual
Square Feet	Acres	of Lots	per Lot	Bill
Single Family Standard Lot (a)				**Flat Fee**
0 to 5,000	0 to .11	6,600		
5,001-6,100	.11 to .14	9,100		
Typical Lot Size			**7,168**	**$23.64**
6,101-7,500	.14 to .17	6,400		
7,501-10,450	.17 to .24	5,521		
Subtotal		27,621		
Single Family Large Lot (b)				**Tiered Fee**
10,451-12,100	.24 to .28	1,279		
12,101-15,000	.28 to .34	800		
Average Large Lot			**14,760**	**$36.70**
15,001+	.34 +	801		
Subtotal		2,880		
Grand Total		30,501		

SF: Square Feet. One acre equals 43,560 square feet.
a. A typical single family lot has a lot area of up to 0.24 acres (10,450 square feet), or 50 by 209 feet.
b. Single family large lots are over 0.24 Acres (10,450 Sq. Ft.). There are an estimated 300 additional dwellings on these larger lots.

Appendix A
School and Parks Fee Subsidy

Appendix A
School & Park Fee Subsidy from Residential Customers

Parcel Land Use Types			Parcel Areas				
Code	Description	No. of Parcels (a)	Acres	Square Feet	Proposed Fee Class	Annual Fee ($/ksf, a)	Annual FY 2013-14
8200/9800	Public Schools	47	377	16,428,654	Runoff Loads	$4.66	$76,613
9800	Public School - Vacant	115	58	2,538,241	Loads	$0.79	$1,994
Subtotal		162	435	18,966,895			$78,608
9800	Public Parks	21	49	2,123,260	Group II Medium Runoff Loads	$4.66	$9,902
Grand Total Schools and Parks Fees		**183**	**484**	**21,090,155**			**$88,509**
Total Residential Single and Multi-Family Lot ERBUs							40,038
						Monthly	Annual
Residential Customer Surcharge for Parks & Schools ($ per ERBU)						$0.16	$1.96

ERPU: Equivalent Residential Parcel Unit represents the drainage loads (flow and pollutants) from a single family residential lot; APN: Assessor's Parcel Number

a. Fee per Thousand Square Feet ($ per year)

Appendix B
Financial Assumptions and 2010 Census Data

Appendix B-1
Assumptions Used in Financial Calculations

Description	Value
Projected O&M cost inflationary (a)	1.0%
Projected project cost inflation (b)	1.0%
Reserve funds interest earnings (a)	2.0%
Annual growth in billable parcel areas (a)	0.0%

(a) The projected inflationary rates are based on VSFCD salary increases.
(b) Projected annual project cost inflation is based on the 2-year historical average ENR Construction Cost Index.

Appendix B-2
2010 Census Data on Household Population

City of Vallejo Housing Units	Total Occupants	Dwelling Units	PPH	Ratio to SF Std.
Large SF Dwellings (a)	11,215	3,180	3.5	115%
Single Family Detached Dwellings				
1, detached	75,323	24,701	3.0	
1, attached	4,680	1,338	3.5	
Total	80,003	26,039	3.1	100%
SF Dwellings in District (est)		30,801		
Multi-family Residential and Condos Dwellings				
2	3,143	1,299	2.4	
3 or 4	6,196	2,360	2.6	
5 to 9	3,532	2,114	1.7	
10 to 19	2,688	1,736	1.5	
20 or more	5,393	2,252	2.4	
Total	20,952	9,761	2.1	70%
MF Dwellings in District (est)		13,905		
Mobile homes	2,265	1,170	1.9	63%
Total	103,220	36,970	2.8	
Total Dwellings in District (est)		45,876		

District service area extends beyond the City Census area.
PPH: Persons per household
a. The number large dwelling lots is estimated, and the persons per household is estimated at 20 percent higher than the SFD detached PPH.

Appendix C
Stormwater Pollutant Coefficients

Appendix C-1
Stormwater Budget Pollutant Allocation Parameters

Stormwater Budget Activities	Base Year Costs Allocated to Pollutants	Weighted Average Allocation	Hydro-carbons (oil/grease)	Solids (Trash)	Sediment Loads	Toxics (metals/ synthetic organics)	Total Allocation
Street Sweeping	$135,000	0%	0%	50%	50%	0%	100%
Administration & Finance	$33,067	100%					100%
Engineering	$40,312	0%	25%	25%	25%	25%	100%
Field Operations	$17,279	0%	10%	40%	40%	10%	100%
Environmental Services	$510,590	0%	15%	40%	20%	25%	100%
Facilities Maintenance	$24,800	0%		100%			100%
Others & Insurance	$12,536	100%					100%
Annual Capital Depreciation	$240,000	0%		100%			100%
Total	$1,013,584	$45,603	$88,394	$553,526	$186,608	$139,453	
Total Allocations		4%	9%	55%	18%	14%	100%
Targeted Pollutant Allocations		0%	9%	57%	19%	14%	100%

The program activities and allocations are based on the best professional judgment of the pollutant remediation for each activity by VSFCD management, 2012

Appendix C-2
Pollutant Loading Factors by Land Use Type

Land Use	Nutrient Sources			Suspended Solids	Toxics							
	Phosphate	Ammonia	Nitrate	(Sediments)	Lead	Cadmium	Chromium	Nickel	Mercury	Zinc	Copper	
Pollutant Loadings (kg/sq km-year)												
Residential	76	57	219	7,340	0.53	0.27	0.15	0.20	0.006	9.27	2.15	
Commercial	103	94	275	11,900	0.77	0.05	0.25	0.40	0.005	33.60	4.39	
Industrial	83	75	287	18,800	1.30	0.10	0.55	0.86	0.014	43.50	6.30	
Agriculture (row crops)	21	50	271	56,400	1.61	0.16	3.85	2.89	0.004	8.28	5.64	
Undisturbed	14	2	51	717	0.02	0.00	0.02	0.02	0.002	0.08	0.13	
Pollutant Load Coefficients (Units per Area)				**Sediment Average**								**Toxic Average**
Residential	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Commercial	135%	167%	126%	162%	145%	20%	167%	200%	83%	362%	204%	169%
Industrial	109%	132%	131%	256%	245%	37%	367%	430%	233%	469%	293%	296%
Agriculture (row crops)	27%	88%	124%	768%	304%	59%	2567%	1445%	67%	89%	262%	685%
Undisturbed	18%	3%	23%	10%	4%	1%	13%	12%	33%	1%	6%	10%

Source: Modeling Storm Water Mass Emissions to the Southern California Bight, Ackerman and Schiff, Journal of Environmental Engineering, April 2003, Table 7 Flux of Storm Water Runoff Constituents.

Appendix C-3
Pollutant Load Coefficients by Land Use

Land Use	Average Area per DU	Average persons per DU	Average Pop. Density	Hydro-carbons (a)	Solids/ Refuse (a)	Sediment Loads	Toxics	Weighted Average Pollutants
Residential SF Standard	1.0	3.1	1.0	1.0	1.0	1.0	1.0	**1.0**
Residential Large Parcel (b)	2.4	3.5	0.5	0.5	0.4	0.5	0.6	**0.5**
High-density Residential (c)	0.3	2.1	2.3	2.3	3.4	1.6	1.7	**2.7**
Commercial				2.3	3.4	1.6	1.7	**2.7**
Industrial				2.3	3.4	2.6	3.0	**3.1**
Landscaped (d)					1.0	1.0	6.8	**1.8**
Agriculture row crops						7.7	6.8	**2.5**
Undisturbed						0.1	0.1	**0.0**
Drainage Program Pollutant Costs				0.1	0.6	0.2	0.1	1.0

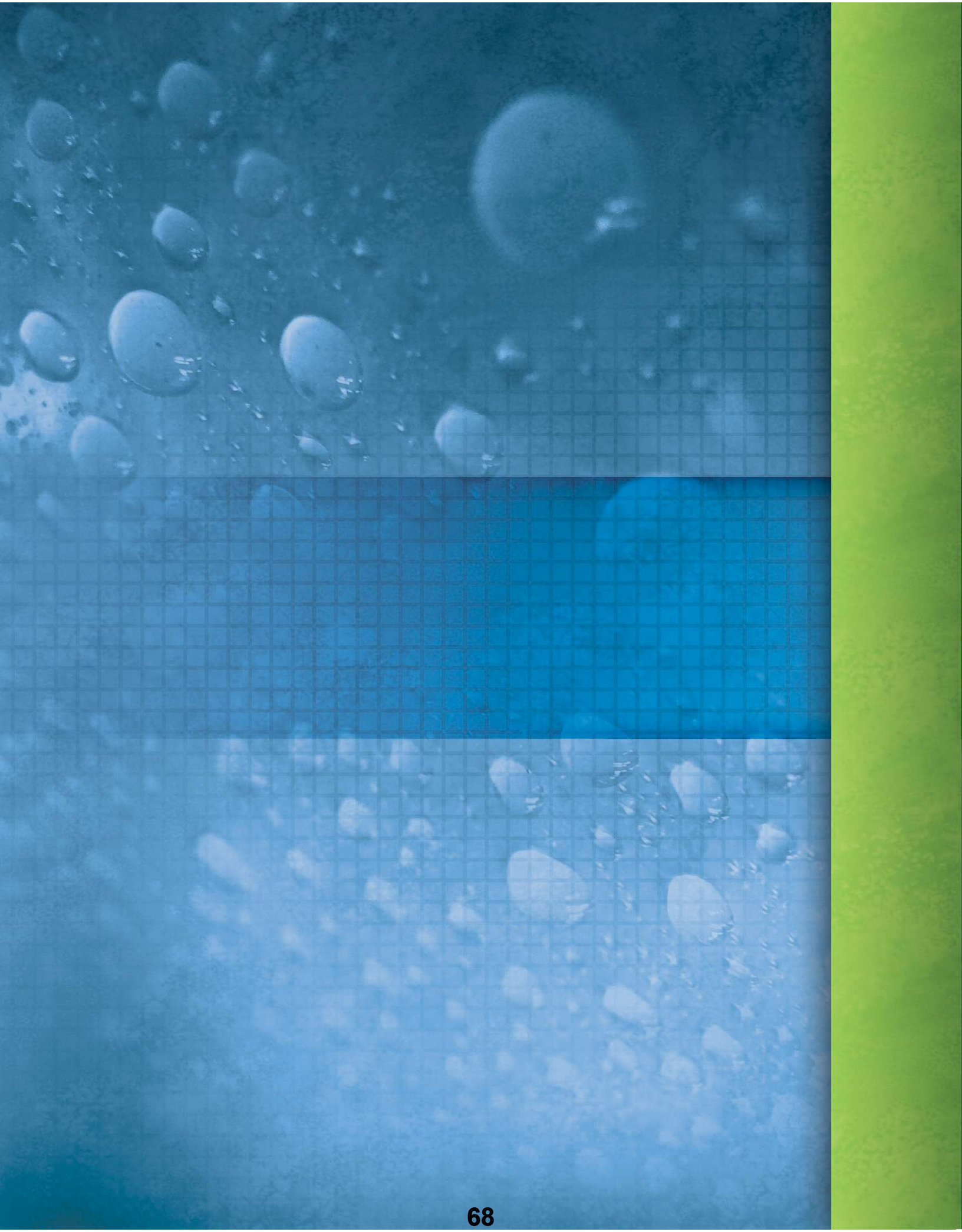
(a) The allocations are based on the best professional judgment. Qualitative information indicates that most hydrocarbons and refuce are from improperly disposed waste from households, so the residential coefficients are based on dwelling units per acre.
(b) The large residential area is based on the equal combination of residential standard and undisturbed area loads using areas and population densities per dwelling unit. There are 20 percent more residents in a single family dwelling unit on a large parcel, compared to an standard single family home.
(c) The high-density residential loads are estimated to be similar to commercial loads except for hydrocarbons and solids. There are 28 percent fewer residents in a multi-family dwelling unit, compared to a standard single family dwelling unit.
(d) The landscaped area is based on agricultural loading except for solids and sediments, which are estimated to be the same as single family parcel loads.

Appendix D
Stormwater Fixed Asset Depreciation

Appendix D
Stormwater Fixed Asset Depreciation

Description	Original Cost	Beg Accum. Depr.	Current Yr Depreciation	End Accum. Depr
Asset 4861212801 - SW Land & Improvements	$691,271	$15,847	$3,689	$19,537
Asset 4861212801 - SW Bldgs & Improvements	$502,439	$305,246	$7,589	$312,835
Asset 4861212802 - SW Pump Stations	$11,492,026	$5,505,897	$263,982	$5,769,879
Asset 4861212803 - SW Plant & Facilities	$5,015,462	$2,009,058	$112,588	$2,121,646
Asset 4861212804 - SW Collection System	$13,100,184	$4,108,214	$271,868	$4,380,082
Asset 4861212901 - SW Machinery & Equipment	$1,124,457	$713,849	$63,351	$777,200
Grand totals for all accounts: (490 assets)	**$31,926,139**	**$12,658,109**	**$723,068**	**$13,381,178**
Asset 4861212805 - SW Contributed Capital Collection	$17,976,989	$7,602,298	$368,486	$7,970,784
Average Years of Depeciation			21	
Percent System Depeciated			44%	
Annual Depreciation based on estimated Replacement Cost			$1,200,000	

Current year depreciation is based on book value; current replacement cost deprecition is approximately 70 percent higher.
Note: The summary-level fixed assets and depreciation used in this analysis is from the FY 2010-11 CAFR.
Assets disposed with Status Codes of "A" or "T" not included totals. Codes that may appear next to the date acquired include: A - Addition, D - Disposal, T - Traded, I - Inactive Method: 1 - BOOK Std Conv Applied Range: 4861212801 - SW: BLDGS & IMPROVEMENTS - 4861212901 - SW: MACHINERY & EQUIPMENT





Voter Approval for Local Government Taxes. Limitations on Fees, Assessments, and Charges. Initiative Constitutional Amendment.

Official Title and Summary Prepared by the Attorney General

VOTER APPROVAL FOR LOCAL GOVERNMENT TAXES. LIMITATIONS ON FEES, ASSESSMENTS, AND CHARGES. INITIATIVE CONSTITUTIONAL AMENDMENT.

- Limits authority of local governments to impose taxes and property-related assessments, fees, and charges. Requires majority of voters approve increases in general taxes and reiterates that two-thirds must approve special tax.
- Assessments, fees, and charges must be submitted to property owners for approval or rejection, after notice and public hearing.
- Assessments are limited to the special benefit conferred.
- Fees and charges are limited to the cost of providing the service and may not be imposed for general governmental services available to the public.

Summary of Legislative Analyst's Estimate of Net State and Local Government Fiscal Impact:

- Short-term local government revenue losses of more than $100 million annually.
- Long-term local government revenue losses of potentially hundreds of millions of dollars annually.
- Local government revenue losses generally would result in comparable reductions in spending for local public services.

Analysis by the Legislative Analyst

OVERVIEW

Local governments provide many services to people and businesses in their communities. To pay for these services, local governments raise revenues by imposing fees, assessments, and taxes. This constitutional measure would make it more difficult for local governments to raise these revenues. As a result, this measure would:

- Reduce the amount of fees, assessments, and taxes that individuals and businesses pay.
- Decrease spending for local public services.

PROPOSAL

This measure would constrain local governments' ability to impose fees, assessments, and taxes. The measure would apply to all cities, counties, special districts, redevelopment agencies, and school districts in California.

Fees

Current Practice. Local governments charge fees to pay for many services to their residents. Some of these fees pay for services to property, such as garbage collection and sewer service. Fees are also called "charges."

Local governments often establish several fee amounts for a service, each based on the approximate cost of providing the service to different types of properties (such as commercial, industrial, or residential property). Local governments usually send monthly bills to property owners to collect these fees, although some fees are placed on the property tax bill. Local governments generally hold public hearings before creating or increasing such a fee, but do not hold elections on fees.

Proposed Requirements for Property-Related Fees. This measure would restrict local governments' ability to charge "property-related" fees. (Fees for water, sewer, and refuse collection service probably meet the measure's definition of a property-related fee. Gas and electric fees and fees charged to land developers are specifically exempted.)

Specifically, the measure states that *all* local property-related fees must comply by July 1, 1997, with the following restrictions:

- No property owner's fee may be more than the cost to provide service to that property owner's land.
- No fee may be charged for fire, police, ambulance, library service, or any other service widely available to the public.
- No fee revenue may be used for any purpose other than providing the property-related service.
- Fees may only be charged for services immediately available to property owners.

In addition, the measure specifies that before adopting a *new* property-related fee (or increasing an *existing* one), local governments must: mail information about the fee to every property owner, reject the fee if a majority of the property owners protest in writing, and hold an election on the fee (unless it is for water, sewer, or refuse collection service).

Taken together, these fee restrictions would require local governments to reduce or eliminate some existing fees. Unless local governments increased taxes to replace these lost fee revenues, spending for local public services likely would be decreased. The measure's requirements would also expand local governments' administrative workload. For example, local governments would have to adjust many property-related fees, potentially (1) setting them on a block-by-block or parcel-by-parcel basis and (2) ending programs that allow low-income people to pay reduced property-related fees. Local governments would also have to mail information to every property owner and hold elections.

Assessments

Current Practice. Local governments charge assessments to pay for projects and services that benefit specific properties. For example, home owners may pay assessments for sidewalks, streets, lighting, or recreation programs in their neighborhood. Assessments are also called "benefit assessments," "special assessments," "maintenance assessments," and similar terms. Local governments typically place assessment charges on the property tax bill.

To create an assessment, state laws require local governments to determine which properties would benefit from a project or service, notify the owners, and set assessment amounts based on the approximate benefit property owners would receive. Often, the rest of the community or region also receives some general benefit from the project or service, but does not pay a share of cost. Typical assessments that provide general benefits include fire, park, ambulance, and mosquito control assessments. State laws generally require local governments to reject a proposed assessment if more than 50 percent of the property owners protest in writing.

Some local governments also levy "standby charges," which are similar to assessments. Standby charges commonly finance water and sewer service expansions to new households and businesses. (The measure treats standby charges as assessments.)

Proposed Requirements for Assessments. This measure would place extensive requirements on local governments charging assessments. Specifically, the measure requires all *new* or *increased* assessments—and some *existing* assessments—to meet four conditions.

- First, local governments must estimate the amount of "special benefit" landowners receive—or would receive—from a project or service. Special benefit is defined as a particular benefit to land and buildings, not a general benefit to the public at large or a general increase in property values. If a project provides both special benefits *and* general benefits, a local government may charge landowners only for the cost of providing the special benefit. Local government must use general revenues (such as taxes) to pay the remaining portion of the project or service's cost. In some cases, local government may not have sufficient revenues to pay this cost, or may choose not to pay it. In these cases, a project or service would not be provided.

- Second, local governments must ensure that no property owner's assessment is greater than the cost to provide the improvement or service to the owner's property. This provision would require local governments to examine assessment amounts in detail, potentially setting them on a parcel-by-parcel or block-by-block basis.
- Third, local governments must charge schools and other public agencies their share of assessments. Currently, public agencies generally do not pay assessments.
- Finally, local governments must hold a mail-in election for each assessment. Only property owners and any renters responsible for paying assessments would be eligible to vote. Ballots cast in these elections would be weighted based on the amount of the assessment the property owner or renter would pay. For example, if a business owner would pay twice as much assessment as a homeowner, the business owner's vote would "count" twice as much as the homeowner's vote.

Figure 1 summarizes the existing assessments that would be exempt from the measure's requirements. We estimate that more than half of all existing assessments would qualify for an exemption. All other existing assessments must meet the measure's requirements—including the voter approval requirement—by July 1, 1997.

Figure 1

Existing Assessments Exempt from the Measure's Requirements

- Assessments previously approved by voters—or by all property owners at the time the assessment was created.
- Assessments where all the funds are used to repay bond obligations.
- Assessments where all the funds are used to pay for sidewalks, streets, sewers, water, flood control, drainage systems or, "vector control" (such as mosquito control).

Taxes

Current Practice. Local governments typically use taxes to pay for general government programs, such as police and fire services. Taxes are "general" if their revenues can be used to pay for many government programs, rather than being reserved for specific programs. Proposition 62—a statutory measure approved by the voters in 1986—requires new local general taxes to be approved by a majority vote of the people. Currently, there are lawsuits pending as to whether this provision applies to cities that have adopted a local charter, such as Los Angeles, Long Beach, Sacramento, San Jose, and many others.

Proposed Requirements for Taxes. The measure states that all *future* local general taxes, including those in cities with charters, must be approved by a majority vote of the people. The measure also requires *existin* local general taxes established after December 31, 1994, without a vote of the people to be placed before the voters within two years.

Other Provisions

Burden of Proof. Currently, the courts allow local governments significant flexibility in determining fee and assessment amounts. In lawsuits challenging property fees and assessments, the taxpayer generally has the "burden of proof" to show that they are not legal. This measure shifts the burden of proof in these lawsuits to local government. As a result, it would be easier for taxpayers to win lawsuits, resulting in reduced or repealed fees and assessments.

Initiative Powers. The measure states that Californians have the power to repeal or reduce any local tax, assessment, or fee through the initiative process. This provision broadens the existing initiative powers available under the State Constitution and local charters.

FISCAL IMPACT

Revenue Reductions

Existing Revenues. By July 1, 1997, local governments would be required to reduce or repeal existing property-related fees and assessments that d not meet the measure's restrictions on (1) fee ana assessment amounts or (2) the use of these revenues. The most likely fees and assessments affected by these provisions would be those for: park and recreation programs, fire protection, lighting, ambulance, business improvement programs, library, and water service. Statewide, local government revenue reductions probably would exceed $100 million annually. The actual level of revenue reduction would depend in large part on how the courts interpret various provisions of the measure. In addition, because local governments vary significantly in their reliance upon fees and assessments, the measure's impact on individual communities would differ greatly.

Within two years, local governments also would be required to hold elections on some recently imposed taxes and existing assessments. The total amount of these taxes and assessments is unknown, but probably exceeds $100 million statewide. If voters do not approve these existing taxes and assessments, local governments would lose *additional* existing revenues.

New Revenues. The measure's restrictions and voter-approval requirements would constrain new and increased fees, assessments, and taxes. As a result, local government revenues in the future would be lower than they would be otherwise. The extent of these revenue reductions would depend on court interpretation of the measure's provisions and local government actions to replace lost revenues.

Summary of Revenue Reductions. In the short term, local government revenues probably would be reduced by more than $100 million annually. Over time, cal government revenues would be significantly lower ıan they would otherwise be, potentially by hundreds of millions of dollars annually. Individual and business payments to local government would decline by the same amount. In general, these local government revenue losses would result in comparable reductions in spending for local public services.

Cost Increases

Local governments would have significantly increased costs to hold elections, calculate fees and assessments, notify the public, and defend their fees and assessments in court. These local increased costs are unknown, but could exceed $10 million initially, and lesser amounts annually after that.

School and community college districts, state agencies, cities, counties, and other public agencies would have increased costs to pay their share of assessments. The amount of this cost is not known, but could total over $10 million initially, and increasing amounts in the future.

For text of Proposition 218 see page 108

218 Voter Approval for Local Government Taxes. Limitations on Fees, Assessments, and Charges. Initiative Constitutional Amendment.

Argument in Favor of Proposition 218

VOTE YES ON PROPOSITION 218. IT WILL GIVE YOU THE RIGHT TO VOTE ON TAX INCREASES!

Proposition 218 guarantees your right to vote on local tax increases—even when they are called something else, like "assessments" or "fees" and imposed on homeowners.

Proposition 218 guarantees your right to vote on taxes imposed on your water, gas, electric, and telephone bills.

Proposition 218 does NOT prevent government from raising and spending money for vital services like police, fire and education. If politicians want to raise taxes they need only convince local voters that new taxes are really needed.

Proposition 218 simply extends the long standing constitutional protection against politicians imposing tax increases without voter approval.

After voters passed Proposition 13, politicians created a loophole in the law that allows them to raise taxes without voter approval by calling taxes "assessments" and "fees."

Once this loophole was created, one lawyer working with politicians wrote, assessments "are now limited only by the limits of human imagination."

How imaginative can the politicians be with assessments? Here are a few examples among thousands:

- A view tax in Southern California—the better the view of the ocean you have the more you pay.
- In Los Angeles, a proposal for assessments for a $2-million scoreboard and a $6-million equestrian center to be paid for by property owners.
- In Northern California, taxpayers 27 miles away from a park are assessed because their property supposedly benefits from that park.
- In the Central Valley, homeowners are assessed to refurbish a college football field.

TAXPAYERS HAVE *NO RIGHT TO VOTE* ON THESE TAX INCREASES AND OTHERS LIKE THEM UNLESS PROPOSITION 218 PASSES!

Proposition 218 will significantly tighten the kind of benefit assessments that can be levied.

Here are examples of why fees and assessments and other nonvoted taxes are so unfair:

- The poor pay the same assessments as the rich. An elderly widow pays exactly the same on her modest home as a tycoon with a mansion.
- There are now over 5,000 local districts which can impose fees and assessments without the consent of local voters. Special districts have increased assessments by over 2400% over 15 years. Likewise, cities have increased utility taxes 415% and raised benefit assessments 976%, a ten-fold increase.

Non-voted taxes on electricity, gas, water, and telephone services hit renters and homeowners hard.

And, retired homeowners get hit doubly hard!

To confirm the impact of fees and assessments on you, look at your property tax bill. You will see a growing list of assessments imposed without voter approval. The list will grow even longer unless Proposition 218 passes.

Proposition 218 will allow you and your neighbors—not politicians—to decide how high your taxes will be. It will allow those who pay assessments to decide if what they are being asked to pay for is worth the cost.

FOR THE RIGHT TO VOTE ON TAXES, VOTE YES C PROPOSITION 218.

JOEL FOX
President, Howard Jarvis Taxpayers Association

JIM CONRAN
President, Consumers First

RICHARD GANN
President, Paul Gann's Citizens Committee

Rebuttal to Argument in Favor of Proposition 218

PROPOSITION 218 IS NO FALSE ALARM . . . IT HURTS

Propositions can deceive, so carefully judge who you believe.

Beware of wild claims for new "constitutional rights" and people who pretend concern about widows and orphans.

Read Proposition 218 yourself and see how large corporations, big landowners and foreign interests gain more voting power than YOU.

Promoters say you get "tax reform" . . . you may actually get serious cutbacks in local service and FEWER VOTING RIGHTS for millions of California citizens.

Sometimes we hear hysterical warnings about bad things that never occur . . . Proposition 218 is a REAL threat. On Proposition 218 consider the harm to EXISTING local services, not vague future threats:

- May reduce CURRENT funding for police, fire and emergency medical programs across California.
- Worsens SCHOOL CROWDING by making public schools pay NEW TAXES, cutting classroom teaching.
- Could eliminate LifeLine utility support for SENIORS and disabled citizens.

CONSTITUTIONAL POWER SHIFT.

Proposition 218 etches this into the state Constitution:

- Blocks 3 million Californians from voting on tax assessments. The struggling young couple renting a small home, WILL HAVE NO VOTE on the assessments imposed on the house they rent.
- Grants special land interests more voting power than average homeowners. The "elderly widow" promoters cite will be banned from voting if she is a renter, or her voting power dwarfed by large property owners.
- Gives non-citizens voting rights on your community taxes.

Proposition 218 is a great deal for wealthy special interests. But it's a bad deal for the average taxpayer, homeowner and renter.

HOWARD OWENS
Congress of California Seniors

LOIS TINSON
President, California Teachers Association

RON SNIDER
President, California Association of Highway Patrolmen

 Arguments printed on this page are the opinions of the authors and have not been checked for accuracy by any official agency.

Voter Approval for Local Government Taxes. Limitations on Fees, Assessments, and Charges. Initiative Constitutional Amendment.

218

Argument Against Proposition 218

PROPOSITION 218 DILUTES VOTING RIGHTS, HURTS LOCAL SERVICES

In the disguise of tax reform, Proposition 218's Constitutional Amendment REDUCES YOUR VOTING POWER and gives huge voting power to corporations, foreign interests and wealthy land owners.

It cuts police, fire, library, park, senior, and disabled services and diverts funds needed for classroom-size reductions.

Read Proposition 218 carefully—it's a wolf, not a lamb!

YOU LOSE RIGHTS; CORPORATIONS, DEVELOPERS, NON-CITIZENS GAIN VOTING POWER

Section 4(e) of Proposition 218 changes the Constitution to give corporations, wealthy landowners and developers MORE VOTING POWER THAN HOMEOWNERS. It lets large outside interests control community taxes—against the will of local citizens.

EXAMPLE: An oil company owns 1000 acres, you own one acre; the oil corporation gets 1000 times more voting power than you.

While Prop. 218 gives voting power to outside interests, Section 4(g) denies voting rights to more than 3,000,000 California renters.

Reducing American citizens' Constitutional rights, it grants voting rights to corporations and absentee landowners—even foreign citizens.

EXAMPLE: A shopping center owned by a foreign citizen is worth 100 times as much as your home; that person gets 100 imes more voting power than you!

Every citizen should have the right to vote if a community is voting on local assessments for police, fire, emergency medical and library programs. It's unfair to give voting power to non-citizens, big landowners and developers, yet deny it to millions of Californians.

MAY CUT LOCAL POLICE, FIRE PROTECTION

Section 6(b)(5) eliminates vital funding sources for local police, fire, emergency medical and library services.

Proposition 218 goes too far—may forbid emergency assessments for earthquakes, floods and fires.

Don't handcuff police and firefighters. The California Police Chiefs Association, Fire Chiefs Association and California Professional Firefighters ask you to vote NO.

The impartial Legislative Analyst's report shows how Proposition 218 could impede LifeLine support for the elderly and disabled. It prohibits seniors and disabled from receiving needed utility services unless they pay all costs themselves.

Proposition 218 cuts more than $100 million from local services, yet wastes tens of millions each year by changing the Constitution to require 5,000 local elections even if local citizens don't want an election . . . even if the election cost is more than the potential revenue.

MAKES SCHOOL CROWDING WORSE

California teachers oppose Proposition 218 because Section 4(a) imposes a new tax on public school property, diverting millions from classroom programs to pay for non-school expenses.

California already has the most crowded classrooms in America (dead last of 50 states). Proposition 218 makes school crowding worse.

SHELL GAME

This measure takes a few good ideas, but twists and perverts them. It cripples the best local services and puts more power into the hands of special interests and non-citizens.

Proposition 218 goes too far. Assessment laws DO need improvement, but Proposition 218 is the wrong way to do it. It does more harm than good, restricting our voting rights, hurting schools, seniors and public safety programs.

Please vote NO on Proposition 218.

FRAN PACKARD
President, League of Women Voters of California

CHIEF RON LOWENBERG
President, California Police Chiefs' Association

CHIEF JEFF BOWMAN
President, California Fire Chiefs' Association

Rebuttal to Argument Against Proposition 218

Arguments against Proposition 218 are misleading and designed to confuse voters. In truth:

1. Proposition 218 expands your voting rights. It CONSTITUTIONALLY GUARANTEES your right to vote on taxes.
2. Under Proposition 218, only California registered voters, including renters, can vote in tax elections. Corporations and foreigners get no new rights.
3. Current law already allows property owners, including nonresidents, to act on property assessments based on the assessment amount they pay. This is NOT created by Proposition 218.
4. "Lifeline" rates for elderly and disabled for telephone, gas, and electric services are NOT affected.
5. Proposition 218 allows voter approved taxes for police, fire, education.

Proposition 218 simply gives taxpayers the right to vote on axes and stops politicians' end-runs around Proposition 13.

That's why ordinary taxpayers, seniors, parents, homeowners, renters, consumer advocates, support Proposition 218.

Under Proposition 218, officials must convince taxpayers that tax increases are justified. Politicians and special interest groups don't like this idea. But they can't win by saying "taxpayers should not vote on taxes," so they use misleading statements to confuse a simple question.

That question: DO YOU BELIEVE TAXPAYERS SHOULD HAVE THE RIGHT TO VOTE ON TAXES? If you answered "yes", VOTE YES ON PROPOSITION 218.

Read the nonpartisan, independent SUMMARY by the Attorney General, which begins "VOTER APPROVAL FOR LOCAL GOVERNMENT TAXES." And, by all means read your property tax bill, due out now. Then you'll know the truth.

FOR THE RIGHT TO VOTE ON TAXES, VOTE YES ON PROPOSITION 218!

CAROL ROSS EVANS
Vice-President, California Taxpayers Association

FELICIA ELKINSON
Past President, Council of Sacramento Senior Organizations

LEE PHELPS
Founder, Alliance of California Taxpayers and Involved Voters (ACTIV)

AN OVERVIEW OF STATE BOND DEBT

This section of the ballot pamphlet provides an overview of the state's current bond debt. It also provides a discussion of the impact the bond measures on this ballot, if approved, would have on this debt level.

Background

What Is Bond Financing? Bond financing is a type of long-term borrowing used to raise money for specific projects. The state gets money by selling bonds to investors. The state must pay back the amount of the bonds along with interest.

The money raised from bonds primarily funds large capital outlay projects, such as prisons, schools, and colleges. The state uses bond financing mainly because these facilities are used for many years and their large dollar costs are difficult to pay for all at once.

General Fund Bond Debt. Most of the bonds the state issues are *general obligation* bonds. The General Fund makes debt payments on about three-fourths of these bonds. The remaining general obligation bonds (such as veterans' housing bonds) are self-supporting and, therefore, do not require General Fund support. The money in the General Fund comes primarily from state personal and corporate income taxes and sales taxes. General obligation bonds must be approved by the voters, and are placed on the ballot by legislative action or by initiative.

The state also issues bonds known as *lease-payment* bonds. These bonds do not require voter approval. The state has used these bonds to fund capital outlay projects in higher education, to construct prisons, and to build state offices. The General Fund also makes debt payments on these bonds.

What Are the Direct Costs of Using Bonds? The state's cost for using bonds depends primarily on the interest rate that is paid on the bonds and the number of years over which they are paid off. Most general obligation bonds are paid off over a period of 20 to 30 years. Assuming an interest rate of 6 percent, the cost of paying off bonds over 25 years is about $1.78 for each dollar borrowed—$1 for the dollar borrowed and 78 cents for the interest. These payments, however, are spread over the entire period, so the cost after adjusting for inflation is less. This is because future payments are made with cheaper dollars. Assuming a 3 percent future annual inflation rate, the cost of paying off the bonds in today's dollars would be about $1.30 for each $1 borrowed.

The State's Current Debt Situation

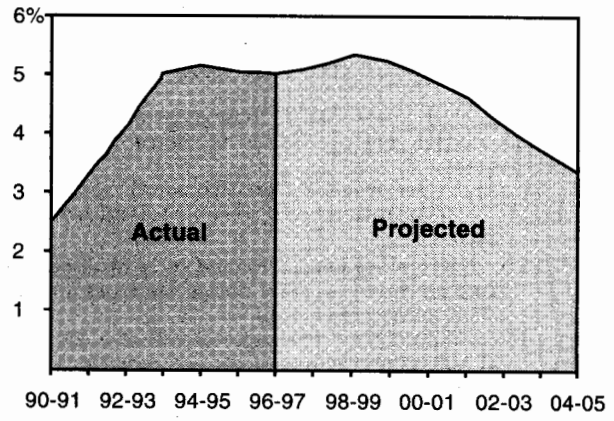
The Amount of State Debt. As of July 1, 1996, the state had about $20.2 billion of General Fund bond debt—$14.3 billion of general obligation bonds and $5.9 billion of lease-payment bonds. Also, about $9 billion of authorized bonds had not been sold because the projects to be funded by the bonds had not been undertaken.

Debt Payments. We estimate that payments on the state's General Fund bond debt will be around $2.4 billion during the 1996–97 fiscal year. As currently authorized bonds are sold, bond debt payments will increase to about $2.9 billion in 1999–00 and declin thereafter.

The level of debt payments expressed as a percentage of state General Fund revenues is referred to as the state's "debt ratio." Figure 1 shows actual and projected debt ratios from 1990–91 through 2004–05. The figure shows that as currently authorized bonds are sold, the state's debt ratio will increase to 5.3 percent in 1998–99 and decline thereafter.

Figure 1

State Debt Service Ratios [a]
1990-91 Through 2004-05



[a] Based on sales of *currently* authorized bonds.

Bond Measures Proposed for the Ballot

There are three general obligation bond measures on this ballot that total $2.1 billion:

- $995 million for water-related programs (Proposition 204).
- $700 million for local jails and juvenile justice facilities (Proposition 205).
- $400 million for veterans' housing loans (Proposition 206). These bonds are self-supporting and do not affect the state's debt ratio.

If these bond measures are approved, we estimate that the state's bond debt payments would remain at about $2.9 billion through 2001–02 and the state's General Fund bond debt would total $21.3 billion (after accounting for the sale of some authorized bonds and the retirement of some debt). The debt ratio would remain at the projected peak of 5.3 percent through 1999–00 and decline thereafter. Voter approval of additional bonds at future elections or legislative authorization of additional lease-payment bonds would increase the state's debt.

PROPOSITION

26

REQUIRES THAT CERTAIN STATE AND LOCAL FEES BE APPROVED BY TWO-THIRDS VOTE. FEES INCLUDE THOSE THAT ADDRESS ADVERSE IMPACTS ON SOCIETY OR THE ENVIRONMENT CAUSED BY THE FEE-PAYER'S BUSINESS. INITIATIVE CONSTITUTIONAL AMENDMENT.

OFFICIAL TITLE AND SUMMARY — PREPARED BY THE ATTORNEY GENERAL

REQUIRES THAT CERTAIN STATE AND LOCAL FEES BE APPROVED BY TWO-THIRDS VOTE. FEES INCLUDE THOSE THAT ADDRESS ADVERSE IMPACTS ON SOCIETY OR THE ENVIRONMENT CAUSED BY THE FEE-PAYER'S BUSINESS. INITIATIVE CONSTITUTIONAL AMENDMENT.

- Requires that certain state fees be approved by two-thirds vote of Legislature and certain local fees be approved by two-thirds of voters.
- Increases legislative vote requirement to two-thirds for certain tax measures, including those that do not result in a net increase in revenue, currently subject to majority vote.

Summary of Legislative Analyst's Estimate of Net State and Local Government Fiscal Impact:

- Decreased state and local government revenues and spending due to the higher approval requirements for new revenues. The amount of the decrease would depend on future decisions by governing bodies and voters, but over time could total up to billions of dollars annually.
- **Additional state fiscal effects from repealing recent fee and tax laws: (1) increased transportation program spending and increased General Fund costs of $1 billion annually, and (2) unknown potential decrease in state revenues.**

ANALYSIS BY THE LEGISLATIVE ANALYST

BACKGROUND

State and local governments impose a variety of taxes, fees, and charges on individuals and businesses. Taxes—such as income, sales, and property taxes—are typically used to pay for general public services such as education, prisons, health, and social services. Fees and charges, by comparison, typically pay for a particular service or program benefitting individuals or businesses. There are three broad categories of fees and charges:

- User fees—such as state park entrance fees and garbage fees, where the user pays for the cost of a specific service or program.
- Regulatory fees—such as fees on restaurants to pay for health inspections and fees on the purchase of beverage containers to support recycling programs. Regulatory fees pay for programs that place requirements on the activities of businesses or people to achieve particular public goals or help offset the public or environmental impact of certain activities.
- Property charges—such as charges imposed on property developers to improve roads leading to new subdivisions and assessments that pay for improvements and services that benefit the property owner.

Figure 1

Approval Requirements: State and Local Taxes, Fees, and Charges

	State	Local
Tax	Two-thirds of each house of the Legislature for measures increasing state revenues.	• Two-thirds of local voters if the local government specifies how the funds will be used. • Majority of local voters if the local government does not specify how the funds will be used.
Fee	Majority of each house of the Legislature.	Generally, a majority of the governing body.
Property Charges	Majority of each house of the Legislature.	Generally, a majority of the governing body. Some also require approval by a majority of property owners or two-thirds of local voters.

ANALYSIS BY THE LEGISLATIVE ANALYST **CONTINUED**

State law has different approval requirements regarding taxes, fees, and property charges. As Figure 1 shows, state or local governments usually can create or increase a fee or charge with a majority vote of the governing body (the Legislature, city council, county board of supervisors, etc.). In contrast, increasing tax revenues usually requires approval by two-thirds of each house of the state Legislature (for state proposals) or a vote of the people (for local proposals).

Disagreements Regarding Regulatory Fees. Over the years, there has been disagreement regarding the difference between regulatory fees and taxes, particularly when the money is raised to pay for a program of broad public benefit. In 1991, for example, the state began imposing a regulatory fee on businesses that made products containing lead. The state uses this money to screen children at risk for lead poisoning, follow up on their treatment, and identify sources of lead contamination responsible for the poisoning. In court, the Sinclair Paint Company argued that this regulatory fee was a tax because: (1) the program provides a broad public benefit, not a benefit to the regulated business, and (2) the companies that pay the fee have no duties regarding the lead poisoning program other than payment of the fee.

In 1997, the California Supreme Court ruled that this charge on businesses was a regulatory fee, not a tax. The court said government may impose regulatory fees on companies that make contaminating products in order to help correct adverse health effects related to those products. Consequently, regulatory fees of this type can be created or increased by (1) a majority vote of each house of the Legislature or (2) a majority vote of a local governing body.

PROPOSAL

This measure expands the definition of a tax and a tax increase so that more proposals would require approval by two-thirds of the Legislature or by local voters. Figure 2 summarizes its main provisions.

Figure 2

Major Provisions of Proposition 26

✓ **Expands the Scope of What Is a State or Local Tax**
- Classifies as taxes some fees and charges that government currently may impose with a majority vote.
- As a result, more state revenue proposals would require approval by two-thirds of each house of the Legislature and more local revenue proposals would require local voter approval.

✓ **Raises the Approval Requirement for Some State Revenue Proposals**
- Requires a two-thirds vote of each house of the Legislature to approve laws that increase taxes on any taxpayer, even if the law's overall fiscal effect does not increase state revenues.

✓ **Repeals Recently Passed, Conflicting State Laws**
- Repeals recent state laws that conflict with this measure, unless they are approved again by two-thirds of each house of the Legislature. Repeal becomes effective in November 2011.

For text of Proposition 26, see page 114.

ANALYSIS BY THE LEGISLATIVE ANALYST CONTINUED

Definition of a State or Local Tax

Expands Definition. This measure broadens the definition of a state or local tax to include many payments currently considered to be fees or charges. As a result, the measure would have the effect of increasing the number of revenue proposals subject to the higher approval requirements summarized in Figure 1. Generally, the types of fees and charges that would become taxes under the measure are ones that government imposes to address health, environmental, or other societal or economic concerns. Figure 3 provides examples of some regulatory fees that could be considered taxes, in part or in whole, under the measure. This is because these fees pay for many services that benefit the public broadly, rather than providing services directly to the fee payer. The state currently uses these types of regulatory fees to pay for most of its environmental programs.

Certain other fees and charges also could be considered to be taxes under the measure. For example, some business assessments could be considered to be taxes because government uses the assessment revenues to improve shopping districts (such as providing parking, street lighting, increased security, and marketing), rather than providing a direct and distinct service to the business owner.

Some Fees and Charges Are Not Affected. The change in the definition of taxes would not affect most user fees, property development charges, and property assessments. This is because these fees and charges generally comply with Proposition 26's requirements already, or are exempt from its provisions. In addition, most other fees or charges in existence at the time of the November 2, 2010 election would not be affected unless:

- The state or local government later increases or extends the fees or charges. (In this case, the state or local government would have to comply with the approval requirements of Proposition 26.)
- The fees or charges were created or increased by a state law—passed between January 1, 2010 and November 2, 2010—that conflicts with Proposition 26 (discussed further below).

Approval Requirement for State Tax Measures

Current Requirement. The State Constitution currently specifies that laws enacted "for the purpose

Figure 3

Regulatory Fees That Benefit the Public Broadly

Oil Recycling Fee

The state imposes a regulatory fee on oil manufacturers and uses the funds for:

- Public information and education programs.
- Payments to local used oil collection programs.
- Payment of recycling incentives.
- Research and demonstration projects.
- Inspections and enforcement of used-oil recycling facilities.

Hazardous Materials Fee

The state imposes a regulatory fee on businesses that treat, dispose of, or recycle hazardous waste and uses the funds for:

- Clean up of toxic waste sites.
- Promotion of pollution prevention.
- Evaluation of waste source reduction plans.
- Certification of new environmental technologies.

Fees on Alcohol Retailers

Some cities impose a fee on alcohol retailers and use the funds for:

- Code and law enforcement.
- Merchant education to reduce public nuisance problems associated with alcohol (such as violations of alcohol laws, violence, loitering, drug dealing, public drinking, and graffiti).

of increasing revenues" must be approved by two-thirds of each house of the Legislature. Under current practice, a law that increases the amount of taxes charged to some taxpayers but offers an equal (or larger) reduction in taxes for other taxpayers has been viewed as not increasing revenues. As such, it can be approved by a majority vote of the Legislature.

New Approval Requirement. The measure specifies that state laws that result in *any* taxpayer paying a higher tax must be approved by two-thirds of each house of the Legislature.

State Laws in Conflict With Proposition 26

Repeal Requirement. Any state law adopted between January 1, 2010 and November 2, 2010 that conflicts with Proposition 26 would be repealed one year after the proposition is approved. This repeal would not take place, however, if two-thirds of each house of the Legislature passed the law again.

Recent Fuel Tax Law Changes. In the spring of 2010, the state increased fuel taxes paid by gasoline suppliers, but decreased other fuel taxes paid by gasoline retailers. Overall, these changes do not raise more state tax revenues, but they give the state greater spending flexibility over their use.

Using this flexibility, the state shifted about $1 billion of annual transportation bond costs from the state's General Fund to its fuel tax funds. (The General Fund is the state's main funding source for schools, universities, prisons, health, and social services programs.) This action decreases the amount of money available for transportation programs, but helps the state balance its General Fund budget. Because the Legislature approved this tax change with a majority vote in each house, this law would be repealed in November 2011—unless the Legislature approved the tax again with a two-thirds vote in each house.

Other Laws. At the time this analysis was prepared (early in the summer of 2010), the Legislature and Governor were considering many new laws and funding changes to address the state's major budget difficulties. In addition, parts of this measure would be subject to future interpretation by the courts. As a result, we cannot determine the full range of state laws that could be affected or repealed by the measure.

FISCAL EFFECTS

Approval Requirement Changes. By expanding the scope of what is considered a tax, the measure would make it more difficult for state and local governments to pass new laws that raise revenues. This change would affect many environmental, health, and other regulatory fees (similar to the ones in Figure 3), as well as some business assessments and other levies. New laws to create—or extend—these types of fees and charges would be subject to the higher approval requirements for taxes.

The fiscal effect of this change would depend on future actions by the Legislature, local governing boards, and local voters. If the increased voting requirements resulted in some proposals not being approved, government revenues would be lower than otherwise would have occurred. This, in turn, likely would result in comparable decreases in state spending.

Given the range of fees and charges that would be subject to the higher approval threshold for taxes, the fiscal effect of this change could be major. Over time, we estimate that it could reduce government revenues and spending statewide by up to billions of dollars annually compared with what otherwise would have occurred.

Repeal of Conflicting Laws. Repealing conflicting state laws could have a variety of fiscal effects. For example, repealing the recent fuel tax laws would increase state General Fund costs by about $1 billion annually for about two decades and increase funds available for transportation programs by the same amount.

Because this measure could repeal laws passed *after* this analysis was prepared and some of the measure's provisions would be subject to future interpretation by the courts, we cannot estimate the full fiscal effect of this repeal provision. Given the nature of the proposals the state was considering in 2010, however, it is likely that repealing any adopted proposals would decrease state revenues (or in some cases increase state General Fund costs). Under this proposition, these fiscal effects could be avoided if the Legislature approves the laws again with a two-thirds vote of each house.

For text of Proposition 26, see page 114.

PROP 26 REQUIRES THAT CERTAIN STATE AND LOCAL FEES BE APPROVED BY TWO-THIRDS VOTE. FEES INCLUDE THOSE THAT ADDRESS ADVERSE IMPACTS ON SOCIETY OR THE ENVIRONMENT CAUSED BY THE FEE-PAYER'S BUSINESS. INITIATIVE CONSTITUTIONAL AMENDMENT.

★ ARGUMENT IN FAVOR OF PROPOSITION 26 ★

YES ON PROPOSITION 26: STOP POLITICIANS FROM ENACTING HIDDEN TAXES

State and local politicians are using a loophole to impose Hidden Taxes on many products and services by calling them "fees" instead of taxes. Here's how it works:

At the State Level:

- California's Constitution requires a two-thirds vote of the Legislature for new or increased taxes, but the politicians use a gimmick to get around this by calling their taxes "fees" so they can pass them with only a *bare majority vote.*

At the Local Level:

- Most tax increases at the local level require voter approval. Local politicians have been calling taxes "fees" so they can bypass voters and raise taxes without voter permission—taking away your right to stop these Hidden Taxes at the ballot.

PROPOSITION 26 CLOSES THIS LOOPHOLE

Proposition 26 requires politicians to meet the same vote requirements to pass these Hidden Taxes as they must to raise other taxes, protecting California taxpayers and consumers by requiring these Hidden Taxes to be passed by a two-thirds vote of the Legislature and, at the local level, by public vote.

PROPOSITION 26 PROTECTS ENVIRONMENTAL AND CONSUMER REGULATIONS AND FEES

Don't be misled by opponents of Proposition 26. California has some of the strongest environmental and consumer protection laws in the country. Proposition 26 preserves those laws and PROTECTS LEGITIMATE FEES SUCH AS THOSE TO CLEAN UP ENVIRONMENTAL OR OCEAN DAMAGE, FUND NECESSARY CONSUMER REGULATIONS, OR PUNISH WRONGDOING, and for licenses for professional certification or driving.

DON'T LET THE POLITICIANS CIRCUMVENT OUR CONSTITUTION TO TAKE EVEN MORE MONEY FROM US

Politicians have proposed more than *$10 billion* in Hidden Taxes. Here are a few examples of things they could apply Hidden Taxes to unless we stop them:

- Food
- Gas
- Toys
- Water
- Cell Phones
- Electricity
- Insurance
- Beverages
- Emergency Services
- Entertainment

PROPOSITION 26: HOLD POLITICIANS ACCOUNTABLE

"State politicians already raised taxes by $18 billion. Now, instead of controlling spending to address the budget deficit, they're using this gimmick to increase taxes even more! It's time for voters to STOP the politicians by passing Proposition 26."—Teresa Casazza, California Taxpayers' Association

Local politicians play tricks on voters by disguising taxes as "fees" so they don't have to ask voters for approval. They need to control spending, not use loopholes to raise taxes! It's time to hold them accountable for runaway spending and to stop Hidden Taxes at the local level.

YES ON PROPOSITION 26: PROTECT CALIFORNIA FAMILIES

California families and small businesses can't afford new and higher Hidden Taxes that will kill jobs and hurt families. When government increases Hidden Taxes, consumers and taxpayers pay increased costs on everyday items.

"The best way out of this recession is to grow the economy and create jobs, not increase taxes. Proposition 26 will send a message to politicians that it's time to clean up wasteful spending in Sacramento."—John Kabateck, National Federation of Independent Business/California

VOTE YES ON PROPOSITION 26 TO STOP HIDDEN TAXES—*www.No25Yes26.com*

TERESA CASAZZA, President
California Taxpayers' Association

ALLAN ZAREMBERG, President
California Chamber of Commerce

JOEL FOX, President
Small Business Action Committee

★ REBUTTAL TO ARGUMENT IN FAVOR OF PROPOSITION 26 ★

Do you want corporations to write special protections into California's Constitution?

Should California protect polluters at the expense of public safety?

That's what Prop. 26 is: big oil, tobacco, and alcohol companies want taxpayers to pay for cleaning their mess. As a result, local police and fire departments will have fewer resources to keep us safe.

The claim that Prop. 26 won't harm consumers and the environment is false. Corporations are spending millions misleading voters into thinking that the payments made by companies that pollute or harm public health are "hidden taxes." The campaign's own website cited "Oil severance fee to mitigate oil spill clean up, and build larger response and enforcement capabilities" as a hidden tax.

Here are some other fees they don't want to pay—listed in their own documents:

- Fees on polluters to clean up hazardous waste
- Fees on oil companies for oil spill cleanup
- Fees on tobacco companies for the adverse health effects of tobacco products.

PROPOSITION 26 IS BAD FOR THE ENVIRONMENT, PUBLIC SAFETY, & TAXPAYERS.

The California Professional Firefighters, League of Women Voters of California, California Nurses Association, Sierra Club, Planning & Conservation League, Californians Against Waste, and California Tax Reform Association all oppose 26 because it would force ordinary citizens to pay for the damage done by polluters.

Californians can't afford to clean up polluters' messes when local governments are cutting essential services like police and fire departments.

WE NEED TO PROTECT THE PUBLIC, NOT POLLUTERS! VOTE NO on 26.

RON COTTINGHAM, President
Peace Officers Research Association of California

WARNER CHABOT, Chief Executive Officer
California League of Conservation Voters

PATTY VELEZ, President
California Association of Professional Scientists

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PROP 26 REQUIRES THAT CERTAIN STATE AND LOCAL FEES BE APPROVED BY TWO-THIRDS VOTE. FEES INCLUDE THOSE THAT ADDRESS ADVERSE IMPACTS ON SOCIETY OR THE ENVIRONMENT CAUSED BY THE FEE-PAYER'S BUSINESS. INITIATIVE CONSTITUTIONAL AMENDMENT.

★ ARGUMENT AGAINST PROPOSITION 26 ★

Should polluters be protected from paying to clean up the damage they do?

Should taxpayers foot the bill instead?

The answer is NO, and that's why voters should reject Proposition 26, the Polluter Protection Act.

Who put Prop. 26 on the ballot? Oil, tobacco, and alcohol companies provided virtually all the funding for this measure, including Chevron, Exxon Mobil, and Phillip Morris.

Their goal: to shift the burden of paying for the damage these companies have done onto the taxpayers.

How does this work? Prop. 26 redefines payments for harm to the environment or public health as tax increases, requiring a 2/3 vote for passage.

Such payments, or pollution fees on public nuisances, would become much harder to enact—leaving taxpayers to foot the bill. California has enough problems without forcing taxpayers to pay for cleaning up after polluting corporations.

Companies that pollute, harm the public health, or create a public nuisance should be required to pay to cover the damage they cause.

But the big oil, tobacco, and alcohol corporations want you, the taxpayer, to pay for cleaning up their messes. That's why these corporations wrote Proposition 26 behind closed doors, with zero public input, and why they put up millions of dollars to get Proposition 26 on the ballot.

Proposition 26 is just another attempt by corporations to protect themselves at the expense of ordinary citizens. The problem isn't taxes "hidden" as fees; it's the oil and tobacco companies hiding their true motives:

- Polluters don't want to pay fees used to clean up hazardous waste.
- Oil companies don't want to pay fees used for cleaning up oil spills and fighting air pollution.
- Tobacco companies don't want to pay fees used for addressing the adverse health effects of tobacco products.
- Alcohol companies don't want to pay fees used for police protection in neighborhoods and programs to prevent underage drinking.

One of the so-called "hidden taxes" identified by the Proposition 26 campaign is a fee that oil companies pay in order to cover the cost of oil spill clean-up, like the one in the Gulf. The oil companies should be responsible for the mess they create, not the taxpayers.

Proposition 26 will harm local public safety and health, by requiring expensive litigation and endless elections in order for local government to provide basic services. Fees on those who do harm should cover such costs as policing public nuisances or repairing damaged roads.

The funds raised by these fees are used by state and local governments for essential programs like fighting air pollution, cleaning up environmental disasters and monitoring hazardous waste. They require corporations such as tobacco companies to pay for the harm they cause.

If Proposition 26 passes, these costs would have to be paid for by the taxpayers.

DON'T PROTECT POLLUTERS. Join California Professional Firefighters, California Federation of Teachers, California League of Conservation Voters, California Nurses Association, Consumer Federation of California, and California Alliance for Retired Americans, and vote NO on 26.

www.stoppolluterprotection.com

JANIS R. HIROHAMA, President
League of Women Voters of California

JANE WARNER, President
American Lung Association in California

BILL MAGAVERN, Director
Sierra Club California

★ REBUTTAL TO ARGUMENT AGAINST PROPOSITION 26 ★

Proposition 26 fixes a loophole that allows politicians to impose new taxes on businesses and consumers by falsely calling them "fees".

Proposition 26 stops politicians from increasing Hidden Taxes on food, water, cell phones and even emergency services—BILLIONS OF DOLLARS IN HIGHER COSTS THAT CONSUMERS WILL PAY, NOT BIG CORPORATIONS.

Politicians and special interests oppose Prop. 26 because they want to take more money from working California families by putting "fees" on everything they can think of. Their interest is simple—more taxpayer money for the politicians to waste, including on lavish public pensions.

Here are the facts:

Prop. 26 protects legitimate fees and WON'T ELIMINATE OR PHASE OUT ANY OF CALIFORNIA'S ENVIRONMENTAL OR CONSUMER PROTECTION LAWS, including:

- Oil Spill Prevention and Response Act
- Hazardous Substance Control Laws
- California Clean Air Act
- California Water Quality Control Act
- Laws regulating licensing and oversight of Contractors, Attorneys and Doctors

"Proposition 26 doesn't change or undermine a single law protecting our air, ocean, waterways or forests—it simply stops the runaway fees politicians pass to fund ineffective programs."—Ryan Broddrick, former Director, Department of Fish and Game

Here's what Prop. 26 really does:

- *Requires a TWO-THIRDS VOTE OF THE LEGISLATURE FOR PASSING STATEWIDE HIDDEN TAXES* disguised as fees, just like the Constitution requires for regular tax increases.
- *Requires a POPULAR VOTE TO PASS LOCAL HIDDEN TAXES* disguised as fees, just like the Constitution requires for most other local tax increases.

YES on 26—Stop Hidden Taxes. Preserve our Environmental Protection Laws.

www.No25Yes26.com

JOHN DUNLAP, Former Chairman
California Air Resources Board

MANUEL CUNHA, JR., President
Nisei Farmers League

JULIAN CANETE, Chairman
California Hispanic Chamber of Commerce

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(b) The Governor and the Governor-elect may require a state agency, officer or employee to furnish whatever information is deemed necessary to prepare the budget.

(c) (l) The budget shall be accompanied by a budget bill itemizing recommended expenditures.

(2) The budget bill shall be introduced immediately in each house by the persons chairing the committees that consider the budget.

(3) The Legislature shall pass the budget bill by midnight on June 15 of each year.

(4) Until the budget bill has been enacted, the Legislature shall not send to the Governor for consideration any bill appropriating funds for expenditure during the fiscal year for which the budget bill is to be enacted, except emergency bills recommended by the Governor or appropriations for the salaries and expenses of the Legislature.

(d) No bill except the budget bill may contain more than one item of appropriation, and that for one certain, expressed purpose. Appropriations from the General Fund of the State, except appropriations for the public schools; *and appropriations in the budget bill and in other bills providing for appropriations related to the budget bill,* are void unless passed in each house by rollcall vote entered in the journal, two-thirds of the membership concurring.

(e) (1) Notwithstanding any other provision of law or of this Constitution, the budget bill and other bills providing for appropriations related to the budget bill may be passed in each house by rollcall vote entered in the journal, a majority of the membership concurring, to take effect immediately upon being signed by the Governor or upon a date specified in the legislation. Nothing in this subdivision shall affect the vote requirement for appropriations for the public schools contained in subdivision (d) of this section and in subdivision (b) of Section 8 of this article.

(2) For purposes of this section, "other bills providing for appropriations related to the budget bill" shall consist only of bills identified as related to the budget in the budget bill passed by the Legislature.

~~(e)~~ *(f)* The Legislature may control the submission, approval, and enforcement of budgets and the filing of claims for all state agencies.

~~(f)~~ *(g)* For the 2004–05 fiscal year, or any subsequent fiscal year, the Legislature may not send to the Governor for consideration, nor may the Governor sign into law, a budget bill that would appropriate from the General Fund, for that fiscal year, a total amount that, when combined with all appropriations from the General Fund for that fiscal year made as of the date of the budget bill's passage, and the amount of any General Fund moneys transferred to the Budget Stabilization Account for that fiscal year pursuant to Section 20 of Article XVI, exceeds General Fund revenues for that fiscal year estimated as of the date of the budget bill's passage. That estimate of General Fund revenues shall be set forth in the budget bill passed by the Legislature.

(h) Notwithstanding any other provision of law or of this Constitution, including subdivision (c) of this section, Section 4 of this article, and Sections 4 and 8 of Article III, in any year in which the budget bill is not passed by the Legislature by midnight on June 15, there shall be no appropriation from the current budget or future budget to pay any salary or reimbursement for travel or living expenses for Members of the Legislature during any regular or special session for the period from midnight on June 15 until the day that the budget bill is presented to the Governor. No salary or reimbursement for travel or living expenses forfeited pursuant to this subdivision shall be paid retroactively.

SEC. 5. Severability.

If any of the provisions of this measure or the applicability of any provision of this measure to any person or circumstances shall be found to be unconstitutional or otherwise invalid, such finding shall not affect the remaining provisions or applications of this measure to other persons or circumstances, and to that extent the provisions of this measure are deemed to be severable.

PROPOSITION 26

This initiative measure is submitted to the people in accordance with the provisions of Section 8 of Article II of the California Constitution.

This initiative measure amends sections of the California Constitution; therefore, existing provisions proposed to be deleted are printed in ~~strikeout type~~ and new provisions proposed to be added are printed in *italic type* to indicate that they are new.

PROPOSED LAW

SECTION 1. Findings and Declarations of Purpose.

The people of the State of California find and declare that:

(a) Since the people overwhelmingly approved Proposition 13 in 1978, the Constitution of the State of California has required that increases in state taxes be adopted by not less than two-thirds of the members elected to each house of the Legislature.

(b) Since the enactment of Proposition 218 in 1996, the Constitution of the State of California has required that increases in local taxes be approved by the voters.

(c) Despite these limitations, California taxes have continued to escalate. Rates for state personal income taxes, state and local sales and use taxes, and a myriad of state and local business taxes are at all-time highs. Californians are taxed at one of the highest levels of any state in the nation.

(d) Recently, the Legislature added another $12 billion in new taxes to be paid by drivers, shoppers, and anyone who earns an income.

(e) This escalation in taxation does not account for the recent phenomenon whereby the Legislature and local governments have disguised new taxes as "fees" in order to extract even more revenue from California taxpayers without having to abide by these constitutional voting requirements. Fees couched as "regulatory" but which exceed the reasonable costs of actual regulation or are simply imposed to raise revenue for a new program and are not part of any licensing or permitting program are actually taxes and should be subject to the limitations applicable to the imposition of taxes.

(f) In order to ensure the effectiveness of these constitutional limitations, this measure also defines a "tax" for state and local purposes so that neither the Legislature nor local governments can circumvent these restrictions on increasing taxes by simply defining new or expanded taxes as "fees."

SECTION 2. Section 3 of Article XIII A of the California Constitution is amended to read:

SEC. 3. *(a)* ~~From and after the effective date of this article, any changes in state taxes enacted for the purpose of increasing revenues collected pursuant thereto~~ *Any change in state statute which results in any taxpayer paying a higher tax* ~~whether by increased rates or changes in methods of computation~~ must be imposed by an ~~Act~~ *act* passed by not less than two-thirds of all members elected to each of the two houses of the Legislature, except that no new ad valorem taxes on real property, or sales or transaction taxes on the sales of real property may be imposed.

(b) As used in this section, "tax" means any levy, charge, or exaction of any kind imposed by the State, except the following:

(1) A charge imposed for a specific benefit conferred or privilege granted directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the State of conferring the benefit or granting the privilege to the payor.

(2) A charge imposed for a specific government service or product provided directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the State of providing the service or product to the payor.

(3) A charge imposed for the reasonable regulatory costs to the State incident to issuing licenses and permits, performing investigations, inspections, and audits, enforcing agricultural marketing orders, and the administrative enforcement and adjudication thereof.

(4) A charge imposed for entrance to or use of state property, or the purchase, rental, or lease of state property, except charges governed by Section 15 of Article XI.

(5) A fine, penalty, or other monetary charge imposed by the judicial branch of government or the State, as a result of a violation of law.

(c) Any tax adopted after January 1, 2010, but prior to the effective date of this act, that was not adopted in compliance with the requirements of this section is void 12 months after the effective date of this act unless the tax is reenacted by the Legislature and signed into law by the Governor in compliance with the requirements of this section.

(d) The State bears the burden of proving by a preponderance of the evidence that a levy, charge, or other exaction is not a tax, that the amount is no more than necessary to cover the reasonable costs of the governmental activity, and that the manner in which those costs are allocated to a payor bear a fair or reasonable relationship to the payor's burdens on, or benefits received from, the governmental activity.

SECTION 3. Section 1 of Article XIII C of the California Constitution is amended to read:

SECTION 1. Definitions. As used in this article:

(a) "General tax" means any tax imposed for general governmental purposes.

(b) "Local government" means any county, city, city and county, including a charter city or county, any special district, or any other local or regional governmental entity.

(c) "Special district" means an agency of the State, formed pursuant to general law or a special act, for the local performance of governmental or proprietary functions with limited geographic boundaries including, but not limited to, school districts and redevelopment agencies.

(d) "Special tax" means any tax imposed for specific purposes, including a tax imposed for specific purposes, which is placed into a general fund.

(e) As used in this article, "tax" means any levy, charge, or exaction of any kind imposed by a local government, except the following:

(1) A charge imposed for a specific benefit conferred or privilege granted directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the local government of conferring the benefit or granting the privilege.

(2) A charge imposed for a specific government service or product provided directly to the payor that is not provided to those not charged, and which does not exceed the reasonable costs to the local government of providing the service or product.

(3) A charge imposed for the reasonable regulatory costs to a local government for issuing licenses and permits, performing investigations, inspections, and audits, enforcing agricultural marketing orders, and the administrative enforcement and adjudication thereof.

(4) A charge imposed for entrance to or use of local government property, or the purchase, rental, or lease of local government property.

(5) A fine, penalty, or other monetary charge imposed by the judicial branch of government or a local government, as a result of a violation of law.

(6) A charge imposed as a condition of property development.

(7) Assessments and property-related fees imposed in accordance with the provisions of Article XIII D.

The local government bears the burden of proving by a preponderance of the evidence that a levy, charge, or other exaction is not a tax, that the amount is no more than necessary to cover the reasonable costs of the governmental activity, and that the manner in which those costs are allocated to a payor bear a fair or reasonable relationship to the payor's burdens on, or benefits received from, the governmental activity.

SECTION 4. Conflicting Measures.

In the event that this measure and another measure or measures relating to the legislative or local votes required to enact taxes or fees shall appear on the same statewide election ballot, the provisions of the other measure or measures shall be deemed to be in conflict with this measure. In the event that this measure shall receive a greater number of affirmative votes, the provisions of this measure shall prevail in their entirety, and the provisions of the other measure or measures relating to the legislative or local votes required to enact taxes or fees shall be null and void.

SECTION 5. Severability.

If any provision of this act, or any part thereof, is for any reason held to be invalid or unconstitutional, the remaining provisions shall not be affected, but shall remain in full force and effect, and to this end the provisions of this act are severable.

PROPOSITION 27

This initiative measure is submitted to the people in accordance with the provisions of Section 8 of Article II of the California Constitution.

This initiative measure amends the California Constitution and repeals sections of the Government Code; therefore, existing provisions proposed to be deleted are printed in ~~strikeout type~~ and new provisions proposed to be added are printed in *italic type* to indicate that they are new.

PROPOSED LAW

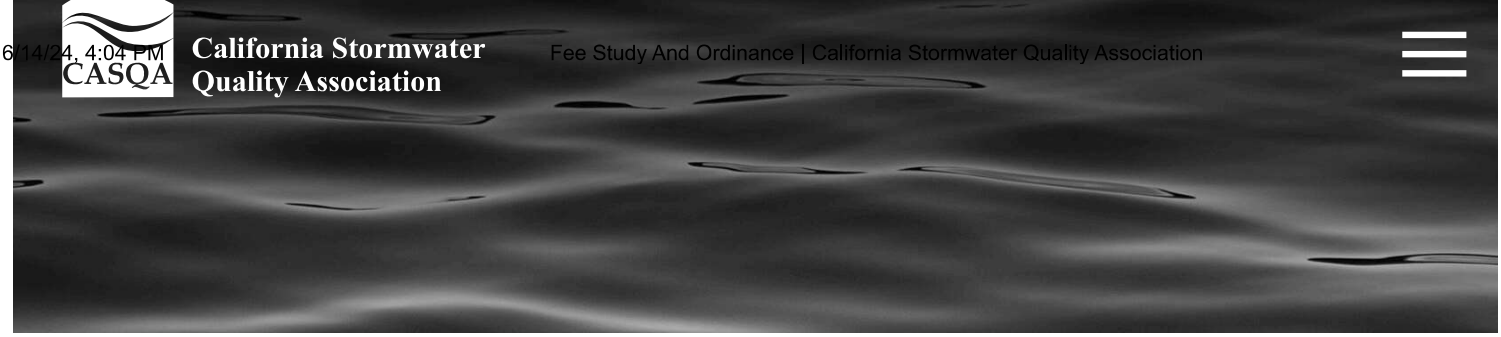
SECTION 1. Title.

This Act shall be known and may be cited as the "Financial Accountability in Redistricting Act" or "FAIR Act."

SECTION 2. Findings and Purpose.

The people of the State of California hereby make the following findings and declare their purpose in enacting the FAIR Act is as follows:

(a) Our political leadership has failed us. California is facing an unprecedented economic crisis and we, the people (not the politicians), need to prioritize how we spend our limited funds. We are going broke. Spending unlimited millions of dollars to create multiple new bureaucracies just to decide a political game of Musical Chairs is a waste—pure and simple. Under current law, a group of unelected commissioners, making up to $1 million a year



Fee Study and Ordinance

A stormwater fee study is a pivotal document for the entire process of developing a stormwater utility. It will be the basis for the rate ordinance and must comply with Proposition 218, which requires that property-related fees "shall not exceed the proportional cost of the service attributable to the parcel."

This implies two elements: costs (expressed as a revenue requirement) and apportionment (how much of the costs are assigned to various property types and sizes in the form of fees). Accordingly, most fee studies are divided into those two primary elements: Revenue requirements and proposed fees. Revenue requirements may include various cost elements including those for capital projects, operations and maintenance, regulatory requirements, planning, engineering, and administration. Fees are typically broken into several categories of land uses and sizes, along with possible service zones and fee incentives.

Rate smoothing is a goal of most fee studies. While the rate base (number and use of parcels) may increase over time, the biggest variable is the revenue requirement – particularly the capital improvement program, which can often be "spikey." Unlike water and sewer rates that must be revisited and re-set at five-year intervals (but do not have to submit to voters), stormwater rates (which must be approved by voters) are not limited to the five-year interval but must have an identifiable formula or index for yearly increases. Therefore, it is important for stormwater fee studies to create a smooth revenue-versus-expense curve over the long haul, often incorporating a way for revenues to keep pace with inflation, such as using the Consumer Price Index to assign annual increases.

Revenue Requirements

(see Homework/Early Preparation) is key to determining the revenue requirements. Operations and maintenance, as well as other costs, are typically expressed in annual needs. Future needs may simply be escalated using a common index (e.g. Consumer Price Index).

However, if the municipality plans major expansions in infrastructure, planning for these is important. The master plan or other document may identify future capital project needs as lump sum amounts, which must be amortized over a longer period of time. Whether spread over 10, 20, or 30 years, and whether done on a pay-as-you-go basis or funded by long-term debt, will depend on each municipality's specific needs and goals. These must be balanced against the willingness-to-pay limitations found in the community survey.

Apportionment

Proposition 218 requires that property-related fees "shall not exceed the proportional cost of the service attributable to the parcel." Therefore, it is essential to develop an apportionment of costs that best reflects the stormwater services provided by the municipality.

Across the U.S., most stormwater fee structures are based on the amount of impervious surface on a parcel, which is proportional to the amount of rainwater that runs off a parcel. This is a straight forward method, although impervious surface data may be difficult or expensive to obtain. Rate-setting consultants have experience working around this issue with sampling and statistical approaches, which can satisfy the Proposition 218 "proportionality" test.

The majority of stormwater rate structures utilize an equivalent residential unit (ERU) as a basis for fees. ERUs estimate the average or median characteristics for a residential property. For stormwater, land use, impervious surface cover, or total size are possible metrics. Once established based on a sample of properties, each parcel in a municipality can be assigned an individual number of ERUs, which is multiplied by the base residential rate to establish the individual fee. With the ERUs assigned and totaled, the revenue requirement is divided by the total number or ERUs to establish the base residential rate.

Most municipalities are bound to an NPDES permit requiring them to reduce stormwater pollutant loading as well as other objectives such as green infrastructure development and public education. These elements could be incorporated into the stormwater fees for various types of parcels.
It is worth noting that Proposition 218's strict requirements on a fair apportionment method means that a municipality should create a thorough administrative record of how the rate

and studies upon which it relies would need to be clearly referenced.

Other Fee Study Features

In addition to the basic revenue requirements and apportionment, many fee studies include provisions for other features such as fee duration (sunset clause) and future increases (typically based on the CPI or other index).

A sunset clause is always a consideration due to the voter approval process. Voters typically prefer a sunset clause, as it removes the fear of a "forever tax". But it is worth noting that if long-term debt is incurred, the fee structure must be in place for at least as long as the debt repayment term. In other words, a fee cannot "sunset" until all debt obligations are done. Two California municipalities, Palo Alto and San Clemente, have opted to routinely include a sunset of their fees. In both cases, capital projects are completed on a pay-as-you-go basis (as opposed to taking on long-term debt). Voters must approve any renewal or extension of the fees (something that is not guaranteed) and municipalities must spend money and resources to run a new ballot measure each time.

Fee Ordinance

- The right of a property owner to appeal his fee and the process to do so.
- Fiscal controls such as establishing a separate enterprise fund and annual audits.
- Procedures for setting annual rates (including the inflation factor).
- The requirement for citizen oversight (if any).

Most municipalities adopt an ordinance to memorialize the rate setting process as well as include other administrative elements. Along with the duration and future increases discussed in a fee study, the ordinance may also include:

Below are several examples of fee studies and ordinances:

Town of Los Altos Fee Report

Vallejo Sanitation & Flood Control District Rate Report

Rancho Cordova Fee Report

A Technical Note on Structuring Stormwater Utility Rates (part of the Local Government Financing Manual, Environmental Finance Center, University of Maryland)

City of Del Mar Clean Water Ordinance

City of Santa Clarita Storm Drainage Utility Ordinance, Section 15.50

In Creating a Stormwater Utility

Early Preparation →

Community Engagement →

Preliminary Rates & Survey →

Fee Study and Ordinance →

Proposition 218 Proceeding →

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