California Regional Water Quality Control Board
Central Valley Region
East Contra Costa County Municipal NPDES Permit

Waste Discharge Requirements Order R5-2010-xxxx
NPDES Permit No. CAS083313
xx September 2010

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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2010-xxxx

NPDES NO. CAS083313

WASTE DISCHARGE REQUIREMENTS
FOR
CITY OF ANTIOCH
CITY OF BRENTWOOD
CITY OF OAKLEY
CONTRA COSTA COUNTY
CONTRA COSTA COUNTY FLOOD CONTROL AND WATER CONSERVATION DISTRICT

STORM WATER DISCHARGES FROM MUNICIPAL
SEPARATE STORM SEWER SYSTEM
CONTRA COSTA COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Central Valley Water Board) finds that:

FINDINGS

1. The County of Contra Costa (hereafter County), Contra Costa County Flood Control and Water Conservation District (hereafter District), and the cities of Antioch, Brentwood and Oakley (which five entities are hereafter referred to as the Permittees) are member agencies of the Contra Costa Clean Water Program (CCCWP). The CCCWP was created in 1993 and also includes 16 other incorporated cities (Cities).
2. Contra Costa County waterbodies drain to two watersheds, which are covered by two Regional Water Quality Control Boards. Attachment H shows the boundary between the Central Valley Water Board (Region 5), San Francisco Regional Water Quality Control Board (Region 2) (San Francisco Bay Water Board), as well as the Contra Costa County boundary. On 14 October 2009, the San Francisco Bay Water Board adopted Waste Discharge Requirements for its regional storm water discharges from municipal storm sewer systems (referred to as the Municipal Regional Storm Water Permit or R2 MRP) as Order R2-2009-0074, NPDES Permit No. CAS612008. This Order is similar in nature and provides an inter-region collaborative approach.
3. The San Francisco Bay Water Board R2 MRP applies to 77 San Francisco Bay regional jurisdictions and entities, including the western portion of Contra Costa County, the western portion of the Contra Costa County Flood Control and Water Conservation District, and 16 cities in the western portion of Contra Costa County. The Permittees currently participate as members in the CCCWP along with the jurisdictions and entities under the R2 MRP. The CCCWP performs certain functions on behalf of its members, most of who are within the San Francisco Bay Water Board regional boundaries. The Permittees have indicated their interest in continuing to participate in the CCCWP and wish to coordinate the permit requirements of the two Regional

Water Boards so that implementation of individual activities, and collective activities through the CCCWP, including funding and budgeting of those activities be as efficient and effective as possible.

4. This Order includes provisions that emulate those in the R2 MRP. Where the R2 MRP provisions are sufficient to meet the requirements of the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan) and other Central Valley Water Board policies, the provisions are the same as those in the R2 MRP. Where different or additional provisions are required to meet the requirements of the Basin Plan or other Central Valley Water Board policies, including the Sacramento-San Joaquin Delta Methylmercury Total Maximum Daily Load (TMDL), adopted on April 2010, those different or additional provisions are included in this Order. The Central Valley Water Board will coordinate with the San Francisco Bay Water Board, as appropriate, to provide consistency with the determination of compliance of similar permit requirements and deliverables. The Central Valley Water Board will also coordinate with the San Francisco Bay Water Board to maximize consistency in future revisions/renewals of the two MS4 permits.

Incorporation of Fact Sheet

5. The Fact Sheet for the Central Valley 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 future response to comments on the Order, is hereby incorporated by reference.

Existing Permits

6. The Permittees and 16 other incorporated cities within the jurisdiction of East Contra Costa County have jointly formed the Contra Costa Clean Water Program (hereafter CCCWP). On behalf of the Permittees, the CCCWP submitted a report of waste discharge 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 Permittees' jurisdictions.

7. The Permittees are currently covered under the NPDES area-wide municipal storm water permit; Order No. 5-00-120 (NPDES No. CAS083313) adopted on 16 June 2000.

8. The Permittees entered into an Agency Participation and Cost Payment Agreement on 1 July 2003.

9. The portion of the unincorporated urbanized area within the County is defined as medium municipality [population greater than 100,000 but less than 250,000 in Appendix I to Part 122 of Title 40 of the federal Code of Regulations (40 CPR)]. As such, the County must obtain an NPDES municipal permit for storm water discharges associated with its urbanized areas.

10. The District owns and operates major storm water conveyance basins that service the urbanized area throughout the County. In accordance with 40 CPR Part 122.26(b)(7)(iii), the District is designated as a part of the medium municipal separate storm sewer system.

11. The Cities are considered urbanized areas with population of less than 100,000. Due to their proximity to the urbanized area of the County, their physical interconnections to the District's storm sewer system, and the location of their discharges relative to the District's system, the

Cities are designated as part of the medium municipal separate storm sewer system [40 CPR Part 122.26(b)(7)(iii)].

12. Most of the City of Pittsburg falls within the jurisdiction of the San Francisco Bay Water Board. Although small portions of the urbanized area of the City of Pittsburg fall within the jurisdictional boundary of the Central Valley Water Board, the City of Pittsburg will refer to Order No. R2-2009-0074 (NPDES No. CAS612008) adopted by the SFBRB on 14 October 2009, for the purpose of implementing its storm water program in those areas, and will not be named as a Discharger to this Order.

13. The County and portions of the Cities are composed of mainly agricultural, rural and open space land uses. It is not the intent of the federal storm water regulations to regulate storm water discharges from land uses of these types. Therefore, these areas of the County and Cities are exempt from the requirements of this permit.

14. The Permittees' land use authority allows urban developments that may generate pollutants and runoff that could impair receiving water quality and beneficial uses. The Permittees are therefore responsible for considering potential storm water impacts when making planning decisions in order to fulfill the Clean Water Act (CWA) requirement to reduce the discharge of pollutants in municipal storm water to the maximum extent practicable (MEP) from new development and redevelopment activities. In addition, the Permittees must exercise their legal authority to ensure that the increased pollutant loads and flows do not degrade the beneficial uses of the receiving water.

15. This Order is not intended to prohibit the inspection for or abatement of vectors by the State Department of Public Health (also known as the State Department of Health Services) or local vector agencies in accordance with California Health and Safety Code § 2270 et seq. and §116110 et seq. Certain Treatment Control BMPs if not properly designed, operated or maintained may create habitats for vectors (e.g. mosquito and rodents). This Order expects that the Permittees will closely cooperate and collaborate with local vector control agencies and the State Department of Health Services for the implementation, operation, and maintenance of Treatment Control Best Management Practices (BMPs) in order to minimize the risk to public health from vector borne diseases.

Applicable Federal, State and Regional Regulations

16. The CWA authorizes the U.S. Environmental Protection Agency (U.S. EPA) to permit a state to serve as the NPDES permitting authority in lieu of the U.S. EPA. The State of California has in-lieu authority for the NPDES program. The Porter-Cologne Water Quality Control Act or California Water Code (CWC) authorizes the State Water Resources Control Board (State Water Board), through the Regional Water Boards, to regulate and control the discharge of pollutants into waters of the State. On 22 September 1989, the State Water Board entered into a memorandum of agreement with the U.S. EPA to administer the NPDES Program governing discharges to waters of the United States.

17. 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. In addition, the Central Valley Water Board has issued General Permit Order No. R5-2008-0081 for dewatering and other low threat

discharges, which authorizes such discharges to the MS4s owned and operated by Permittees. This Order requires the Permittees to conduct compliance inspections at industries and construction sites that discharge to their MS4s. Many of these sites are currently covered under State NPDES General Permits. 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.

18. The Water Quality Control Plan for the Central Valley-Sacramento/San Joaquin River Basins, Fourth Edition, revised September 2009 (hereafter Basin Plan) is the Central Valley 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 Central Valley Water Board and approved by the State Water Resources Control Board (State Water Board), Office of Administrative Law and the USEPA, where required.

19. Federal, state, regional or local entities within the Dischargers' boundaries, not currently named in this Order, operate storm drain facilities and/or discharge storm water to the storm drains and watercourses covered by this Order. The Dischargers may lack legal jurisdiction over these entities under the state and federal regulations. Consequently, the Board recognizes that the Dischargers should not be held responsible for such facilities and/or discharges. Caltrans is a state agency that is currently designated as one of the entities. On 15 July 1999, the State Water Board issued a separate NPDES storm water permit to Caltrans, NPDES No. CAS000003 (Order No. 99-06-DWQ). The State Water Board may consider issuing separate NPDES storm water permits to other federal, state or regional entities operating within the County's boundaries that may not be subject to direct regulation by the Discharger. Federal agencies are not subject to municipal storm water requirements although they may be permitted as industrial Dischargers.

20. The Central Valley Water Board finds stormwater discharges from urban and developing areas in the Central Valley 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 Central Valley 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/stressor(s) and listed waterbodies:

Waterbody	Pollutant/Stressor(s)
Delta Waterways (western portion)	Chloropyrifos (TMDL) DDT (Dichlorodiphenyltrichloroethane) Diazinon (TMDL) Electrical Conductivity Group A Pesticides Mercury (TMDL)* Unknown Toxicity Invasive Species

Waterbody	Pollutant/Stressor(s)
Marsh Creek (Dunn Creek to Marsh Creek Reservoir)	Mercury Metals
Marsh Creek (Marsh Creek Reservoir to San Joaquin River; partly in Delta Waterways, western portion)	Diazinon (TMDL) Escherichia coli (E. Coli) Mercury (TMDL)* Sediment Toxicity Unknown Toxicity
Marsh Creek Reservoir	Mercury (TMDL)*
Sand Creek (tributary to Marsh Creek, Contra Costa County; partly in Delta Waterways, western portion)	Chlorpyrifos (TMDL) DDE (Dichlorodiphenyldichloroethylene) DDT (Dichlorodiphenyltrichloroethane) Dieldrin Escherichia coli (E. Coli) Oxygen, Dissolved Salinity Unknown Toxicity
Kellogg Creek (tributary to Clifton Court Forebay, Contra Costa County; partly in Delta Waterways, central and western portions)	Escherichia coli (E. Coli) Oxygen, Dissolved Salinity Sediment Toxicity Unknown Toxicity

* Pending State Water Resources Control Board and U.S. EPA approval. See Finding 30.

In accordance with CWA section 303(d), the Central Valley 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. TMDLs for these Waterbodies are in various stages of completion. NPDES permits must be consistent with approved TMDL waste load allocations. To implement adopted TMDLs, this Order implements control programs developed to attain waste load allocations.

21. The TMDL for Methylmercury and Total Mercury in the Sacramento-San Joaquin River Delta includes Wasteload Allocations (WLAs) for methylmercury discharged from urban areas within the permittees' jurisdiction. Those WLAs include the portion of methylmercury discharged from the Caltrans right-of-way into the MS4 and into adjacent waters of the Delta. The portion of the methylmercury WLA that would be assigned to Caltrans cannot be determined with currently available information. It is the intent of the Water Board to determine, at some point in the future, an appropriate scheme for sharing the permittee's WLA for methylmercury with Caltrans, for the purposes of incorporation into the Caltrans statewide permit. Determination of the appropriate mechanism and framework for sharing the WLA with Caltrans will be made by following the adaptive management process proposed by the Delta Methylmercury TMDL Stakeholder Group. Until that sharing framework is established, implementation of the WLA will focus on monitoring to identify attainment of the overall WLA by the combined discharges of Caltrans and the permittees, and identifying control measures that would reduce methylmercury discharged from the permittee's jurisdictional areas.

22. This Order requires implementation of programs (i.e., Best Management Practices, or BMPs) to reduce the level of pollutants in storm water discharges to the maximum extent practicable (MEP) and any additional controls necessary to comply with the applicable Waste Load Allocations contained in approved TMDLs. With future development within the area, it is possible that future degradation in water quality could occur. Any such change in water quality will not unreasonably affect the present and anticipated beneficial uses of water and will not result in water quality less than that prescribed in policies of the State Water Board. The programs required pursuant to this order constitute the best practicable treatment or control of discharges necessary to ensure that any pollution or nuisance will not occur and the highest quality consistent with maximum benefit to people of the State will be maintained and is in accordance with federal and state antidegradation policies.

23. Clean Water Act section 402(p)(3)(B)(III) requires municipal separate storm sewer system (MS4) operator to control pollution in storm water to the "maximum extent practicable" (MEP). The MEP requirement is analogous to a technology-based requirement in that it focuses upon the feasibility of pollutant reduction measures rather than achievement of water quality standards in the receiving waters to achieve improvements in the quality of the storm water that is discharged. Compliance with the MEP requirement can range from implementation of structural and nonstructural best management practices to installation of end-of-pipe treatment systems. The MEP standard provides MS4 operators with considerable flexibility in proposing controls to be implemented through the development of a storm water management plan (see 55 Fed. Reg. 48037-38 and 48052-53 (Nov. 16, 1990)). However, the determination of what controls are sufficient to meet MEP is ultimately made by the Central Valley Water Board (40 CFR 122.26(d)(2)(iv)). Nevertheless, MEP does not define the limits of pollution control measures that may be required of MS4 operators, and the requirement to implement controls that reduce pollutants to the MEP is not limited by the goal of attaining water quality standards. In some circumstances, compliance with MEP is not limited by the goal of attaining water quality standards. The Central Valley Water Board may use its discretion to impose other provisions beyond MEP, as it determines appropriate for the control of pollutants including ensuring strict compliance with water quality standards, (Defenders of Wildlife V. Browner (1999) 191 F.3d 1159, 1168).

24. The U.S. EPA published an 'Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits' on August 26, 1996 (61 Fed. Reg. 43761). This policy discusses the appropriate kinds of water quality-based effluent limitations (WQBELs) to be included in NPDES storm water permits to provide for the attainment of water quality standards.

25. On 17 June 1999, the State Board adopted Order No. WQ 99-05 (SBO 99-05), a precedent setting-decision, which identifies acceptable receiving water limitations language to be included in municipal storm water permits issued by the State and Regional Water Boards. The receiving water limitations included herein are consistent with the State Board Order, U.S. EPA policy, and the U.S. Court of Appeals decision in Defenders of Wildlife v. Browner (Ninth Cir., 1999). The State Board's OCC has determined that the federal court decision did not conflict with SBO 99-05 (memorandum dated October 14, 1999).

26. On 12 March 2001, the U.S. Court of Appeals ruled that it is necessary to obtain an NPDES permit for application of aquatic pesticides to waterways [Headwaters, Inc. vs. Talent Irrigation

District, 243 F.3d. 526 (Ninth Cir., 2001)]. On 7 January 2009, the Sixth Circuit Court decided that U.S. EPA's Final Rule is not a reasonable interpretation of the Clean Water Act and vacated the Final Rule. On 8 June 2009, the Sixth Circuit Court granted the motion for a two-year stay of the effect of the National Cotton Council of America v. U.S. EPA. The U.S. EPA exemption will remain in effect until 9 April 2011.

27. This Order does not authorize any take of endangered species. To ensure that endangered species issues have been raised to the responsible agencies, the Central Valley Water Board notified the U.S. Fish and Wildlife Service, National Marine Fisheries Service, and the California Department of Fish and Game of Central Valley Water Board consideration of this Order.

28. The Central Valley Water Board Toxic Hot Spots Clean-up Plan (CWC section 13394) identified mercury in the Delta as a hot spot that is applicable to this discharge. In 1990, the Central Valley Water Board identified the Delta as impaired by mercury because fish had elevated levels of mercury that posed a risk for human and wildlife consumers.

29. The Delta Mercury Control Program, Resolution No. R5-2010-0043 (methylmercury TMDL), was adopted by the Central Valley Water Board in April 2010 and is pending subsequent approval by the State Water Resources Control Board, the Office of Administrative Law, and U.S. EPA. U.S. EPA approval of the TMDL is expected in 2011.

    The Delta Mercury Control Program (methylmercury TMDL) will establish methylmercury waste load allocations (grams/year of methylmercury) for the Permittees, with a final compliance date of 2030. The methylmercury TMDL will require the Permittees to implement pollution prevention measures and BMPs to minimize total mercury discharges. This requirement will be implemented through mercury pollution prevention and reduction strategies contained in this Permit. Annually, the Permittees will report on the results of mercury monitoring and a description of implemented pollution prevention measures and their effectiveness on reducing mercury discharges. In addition, the Permittees will be required to conduct methylmercury control studies to monitor and evaluate the effectiveness of existing BMPs on the control of methylmercury, and to develop and evaluate additional BMPs as needed to reduce their mercury and methylmercury discharges to the Delta. The methylmercury control studies are to be completed nine years after the US EPA TMDL approval date.[1] In accordance with the methylmercury TMDL, the Permittees are required to develop, fund, implement and report on an Exposure Reduction Program (ERP). The objective of the ERP is to reduce mercury exposure of Delta fish consumers most likely affected by mercury.

    Through the CCCWP, the Permittees plan to participate in regional mercury and methylmercury studies and investigations identified in the MRP. To the extent the CCCWP MRP studies are directly relevant to the information needs of implementing the Delta Methylmercury TMDL, the Central Valley Water Board will consider the Permittees' contributions to the investigations, evaluations, and methylmercury control studies required in Provision C.11 to fulfill requirements for the Delta Methylmercury TMDL. The Permittees may have additional TMDL study/implementation requirements if the R2 MRP activities do not address all Delta TMDL requirements.

[1] Central Valley Regional Water Quality Control Board, Resolution No. R5-2010-0043, Delta mercury Control Program, Attachment 1, *Phase I Delta Mercury Control Program Review,* page 9.

30. The Board considers the Permit, which includes the Hydromodification Management Plan Requirements (Provision C.3.g.), to be equivalent to a watershed management plan for the urbanized portions of East Contra Costa County, as the Permit outlines effective and efficient implementation of appropriate BMPs for the most important sources of pollutants within the watersheds.

31. The Permittees have adopted their own respective storm water ordinances. These ordinances provide the Permittees the authority to protect and enhance the water quality of watercourses, water bodies, and wetlands in the Permittees' jurisdictional area in a manner pursuant to and consistent with the CWA and the Porter-Cologne Water Quality Control Act.

32. When industrial or construction site discharges occur in violation of local permits and ordinances, the Central Valley Water Board defers first to the municipality where the discharge occurs for appropriate actions. If the municipality has demonstrated a good faith effort to educate and enforce but remains unsuccessful, the Central Valley Water Board may assist the municipality and conduct a cooperative investigation and/or enforcement effort including enforcement of the applicable statewide General Permit. If the municipality has not demonstrated a good faith enforcement effort, the Central Valley Water Board may initiate enforcement action against both the industrial or construction discharger under the statewide General Permits, as well as against the authorizing municipal Permittee for violations of this Order. Each Permittee must also provide the first level of enforcement against illegal discharges from other land uses it has authorized, such as commercial and residential developments.

33. Under section 13389 of the California Water Code, this action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (CEQA) (Division 13 of the Public Resources Code, Chapter 3, Section 21100, et. Seq.).

Nature of Discharges and Sources of Pollutants

34. 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 the Sacramento-San Joaquin Rivers and Delta Waterways (see Attachment H map).

35. 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.

36. 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.

37. The Central Valley 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 Central Valley 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 Central Valley Water Board will be subject to these notification, comment, and public hearing procedures.

38. The Central Valley Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

39. This Order serves as a NPDES permit, pursuant to CWA section 402, and amendments thereto, and shall become effective **xx xxxx 2010**, provided the Regional Administrator, USEPA, Region 9, has no objections.

IT IS HEREBY ORDERED that Order No. 5-00-120 is rescinded, and that the Permittees, their agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act as amended and regulations and guidelines adopted thereunder, 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.12 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 (Floating Material, Settleable Material, Suspended Material)[2] 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. Receiving water limitations are site-specific interpretations of water quality standards from applicable water quality control plans. As such they are required as part of the permit. However, a receiving water condition not in conformance with the limitation is not necessarily a violation of this Permit. The Central Valley Water Board may require an investigation to determine cause and culpability prior to asserting a violation has occurred.

Discharges from MS4s shall not cause the following in receiving waters:

a. Concentrations of dissolved oxygen to fall below 5.0 mg/l for Delta waters.
b. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.
c. Oils, greases, waxes, floating material or suspended material to create a nuisance or adversely affect beneficial uses.
d. Aesthetically undesirable discoloration.
e. Fungi, slimes, or other objectionable growths.
f. The 30-day average for turbidity to increase as follows:
    i. More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.
    ii. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
    iii. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.

[2] Central Valley Water Board, Basin Plan narrative *Water Quality Objectives for Inland Surface Waters*

iv. More than 10 percent where natural turbidity is greater than 100 NTUs.

g. The normal ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 unit.

h. Deposition of material that causes nuisance or adversely affects beneficial uses.

i. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.

j. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the California Code of Regulations, Title 22; that harm human, plant, animal or aquatic life; or 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.

k. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.

l. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.

m. In waters designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400/100 ml.

n. Violation of any applicable water quality standard for receiving waters adopted by the Central Valley Water Board or the State Water Board pursuant to the CWA and regulations adopted thereunder.

o. Upon approval of the Delta Mercury Control Program by US EPA, the methylmercury waste load allocations for the Permittees, by Delta subregion, are:

Central Delta 0.75 grams/year;

Marsh Creek 0.30 grams/year; and

West Delta 3.2 grams/year.

The final compliance date for the waste load allocations is 2030. Compliance with the methylmercury waste load allocations shall be met as soon as possible, but no later than 2030, unless the Central Valley Water Board modifies the Delta Mercury Control Program implementation schedule and Final Compliance Date.

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 Central Valley 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 Central Valley 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[3] and mercury that are addressed pursuant to Provisions C.8 through C.11 of this Order, submit a report to the Central Valley 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 Central Valley Water Board directs an earlier submittal, and shall constitute a request to the Central Valley Water Board for amendment of this NPDES Permit. The report and application for amendment shall include an implementation schedule. The Central Valley 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 Central Valley 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 Central Valley Water Board to develop additional control measures and BMPs and reinitiate the Permit amendment process.

[3] Central Valley Basin Plan: Narrative Water Quality Standards for Floating Material, Suspended Material and Settleable Material as described in the Fact Sheet of this Order.

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[4] by March 1, 2011.

(2) Inspect and collect DO data from all pump stations twice a year during the dry season after July 1, starting in 2011. DO monitoring is exempted where all discharge from a pump station infiltrates into a dry creek immediately downstream.

(3) If DO levels are at or below 5.0 milligrams per liter (5.0 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 5.0 mg/L. Verify corrective actions are effective by increasing DO monitoring interval to weekly until two weekly samples are above 5.0 mg/L.

(4) Starting in fall 2011, 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 5.0 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 Central Valley 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.

[4] 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, 2011.

(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 Water Board's Industrial Stormwater NPDES General Permit.

(3) The site specific SWPPPs for corporation yards shall be completed by July 1, 2011.

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 and River-Friendly Landscaping Guidelines.[5]
- 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 and River-Friendly Landscaping 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, 2011 for C.3.a.i.(6)-(7), and December 1, 2011 for C.3.a.i.(8).

iii. Reporting – Provide a brief summary of the method(s) of implementation of Provisions C.3.a.i.(1)–(8) in the 2012 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

[5] *River-Friendly Landscaping Guidelines* for landscape professionals in the Sacramento region by the Sacramento Storm Water Quality Partnership, with permission and assistance from StopWaste.Org in Alameda County.

treatment onsite or at a joint stormwater treatment facility[6] 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 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).

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

(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 5,000 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 5,000 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 5,000 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 5,000 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 5,000 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 5,000 square feet of impervious surface threshold (for classification as a Regulated Project) shall not apply.

Effective Date – Immediate.

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.

(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.

(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.[7]
- 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

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

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 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).

iii. Green Street Pilot Projects

The Permittees shall participate in the ten pilot green street projects, mandated by the R2 MRP, 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) and/or River-Friendly Landscaping menu of best management practices (see www.msa.saccounty.net/sactostormwater).

(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 a pilot green street project.

(2) A Regulated Project (as defined in Provision C.3.b.ii) may not be counted as a green street project.

(3) The Permittees shall construct the pilot green street projects in such a manner that it is:

(a) Representative of the various types of streets: arterial, collector, and/or 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; and

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

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

Due Date – The 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, 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;

(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) 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 the green street projects completed by January 1, 2013. The summary shall include for the 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.[9]
- Construct driveways, bike lanes, and/or uncovered parking lots with permeable surfaces.[9]

(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, 2012, 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.

(v) By December 1, 2014, 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.c.iii.(2).

(vi) Biotreatment 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. The planting and soil media for biotreatment systems shall be designed to sustain plant growth and maximize stormwater runoff retention and pollutant removal. By December 1, 2011, the Permittees, working collaboratively or individually, shall submit to the Central Valley Water Board, a proposed set of model biotreatment soil media specifications and soil infiltration testing methods to verify a long-term infiltration rate of 5 to 10 inches/hour. This submittal shall, at a minimum, contain the information required in Provision C.3.c.iii.(3). The Permittees shall ensure that biotreatment systems installed to meet the requirements of Provision C.3.c and d comply with the minimum specifications and soil infiltration testing methods.

(vii) Green roofs may be considered biotreatment systems that treat roof runoff only if they meet certain minimum specifications. By May 1, 2012, the Permittees shall submit to the Central Valley Water Board, proposed minimum specifications for green roofs. This submittal shall, at a minimum, contain the information required in Provision C.3.c.iii.(4). The Permittees shall ensure that green roofs installed to meet the requirements of Provision C.3.c and d comply with the minimum specifications.

(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, 2012

(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, 2012, 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, 2012.

(3) For public projects for which funding has been committed and construction is scheduled to begin by December 1, 2013, the requirements of Provision C.3.c.i shall not apply.

iii. Reporting

(1) Feasibility/Infeasibility Criteria Report - By May 1, 2012, the Permittees, collaboratively or individually, shall submit a report to the Central Valley 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, 2014, the Permittees shall submit a report to the Central Valley 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) Model Biotreatment Soil Media Specifications - By December 1, 2011, the Permittees, collaboratively or individually, shall submit a report to the Central Valley Water Board containing the following information:

- Proposed soil media specifications for biotreatment systems;
- Proposed soil testing methods to verify a long-term infiltration rate of 5-10 inches/hour;

- Relevant literature and field data showing the feasibility of the minimum design specifications;
- Relevant literature, field, and analytical data showing adequate pollutant removal and compliance with the Provision C.3.d hydraulic sizing criteria; and
- Guidance for the Permittees to apply the minimum specifications in a consistent and appropriate manner.

(4) Green Roof Minimum Specifications - By May 1, 2012, the Permittees, collaboratively or individually, shall submit a report to the Central Valley Water Board containing the following information:

- Proposed minimum design specifications for green roofs;
- Relevant literature and field data showing the feasibility of the minimum design specifications;
- Relevant literature, field, and analytical data showing adequate pollutant removal and compliance with the Provision C.3.d hydraulic sizing criteria;
- Discussion of data and lessons learned from already installed green roofs;
- Discussion of barriers, including institutional and technical site specific constraints, to installation of green roofs and proposed strategies for removing these identified barriers; and
- Guidance for the Permittees to apply the minimum specifications in a consistent and appropriate manner.

(5) Report the method(s) of implementation of Provisions C.3.c.i above in the 2013 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.

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[8] to treat the remaining portion of the Provision C.3.d runoff with LID treatment measures at a Regional Project.[9] 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

- 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 automobile-related pollutant impacts. Incentive LID treatment reduction credits approved by the Central Valley Water Board may be applied to these types of Special Projects.

(1) By December 1, 2011, the Permittees shall submit a proposal to the Central Valley 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;

[8] **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.

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

- 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; and
- Proposed total treatment reduction credit for Special Projects that may be characterized by more than one category and justification for the proposed total credit.

iii. Effective Date – December 1, 2012.

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, 2012, 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, 2013, the requirements of Provisions C.3.e.i-ii shall not apply.

(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.

v. Reporting –The Permittees shall submit the ordinance/legal authority and procedural changes made, if any, to implement Provision C.3.e with their 2013 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 2013 Annual Report and all subsequent Annual Reports.

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 Attachment B. A project that does not increase impervious surface area and also does not decrease time of concentration 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:** 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[10] up to the pre-project 10-year peak flow. Permittees, when using pre-sized and pre-designed Integrated Management Practices (IMPs) per Attachment B 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.

(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 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) **HM Control Requirements:** The Permittees shall comply with all requirements in Attachment B, unless otherwise specified by this Order. In all cases, the HM Standard shall be achieved.

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.

[10] 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).

(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.[11]

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 Attachment B.

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

[11] 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.

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 Central Valley 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.

iv. 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, 2011, for Provisions C.3.h.ii.(2)-(6).

v. Reporting: Beginning with the 2011 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 Central Valley 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,[12] 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.

[12] **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.

- Direct runoff from driveways and/or uncovered parking lots onto vegetated areas.
- Construct sidewalks, walkways, and/or patios with permeable surfaces.[7]
- Construct bike lanes, driveways, and/or uncovered parking lots with permeable surfaces.[7]

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.

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 Central Valley 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 Central Valley 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 Central Valley 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 2011 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 Central Valley 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 Central Valley 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 Central Valley Water Board staff or its representatives.

(5) The ERP shall be developed and implemented by April 1, 2011.

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, 2011.

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, 2011.

iii. Reporting – Submit the complaint and spill response phone number and spill contact list with the 2011 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, 2011. 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, 2011.

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 Central Valley 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 2011 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, 2011.

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 <u>have filed a Notice of Intent for</u> 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[13] 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 Central Valley 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 Central Valley Water Board.

[13] 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 Central Valley 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[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 corrected in a timely, though longer period; and

(i) Number and percentage[17] 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

[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 than10 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.

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.

(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 the Delta" 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 2011 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[18]

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[19]	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.).

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-

[18] 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.
[19] Contra Costa Flood Control and Water Conservation District

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, "friends of creek" groups (e.g., Friends of Marsh Creek Watershed), 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[20]

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
> 250,000	5
Non-population-based Permittees	2

[20] 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.

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 2012. All other Permittee monitoring efforts shall commence data collection by October 2011. By July 1, 2011, each Permittee shall provide documentation to the Central Valley 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.[21]

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;

[21] This documentation will allow the Central Valley 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. Contributing to regional collaborations involving the Bay Area Stormwater Management Agencies Association (BASMAA), provided that the monitoring requirements of this permit are attained by those collaborative programs and/or supplemental monitoring activities by the Permittees.

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. This section left intentionally blank.

C.8.c. Status Monitoring

i. Status Monitoring is intended to answer these 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?

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 8.1at least once during the permit term.

Table 8.1 Status Monitoring Elements

Status Monitoring Parameter	Sampling and/or Analytical Method[22]	Minimum Sampling Occurrence[23]	Duration of Sampling	Minimum # Sample Sites to Monitor	Result(s) that Trigger a Monitoring Project in Provision C.8.c.i.
Biological Assessment[24] (Includes Physical Habitat Assessment and General Water Quality Parameters[25]) Nutrients (total phosphorus, dissolved orthophosphate, (continued) total nitrogen, nitrate, ammonia, silica, chloride, dissolved organic carbon, suspended sediment concentration)	SWAMP Std Operating Procedure[26,27,28] for Biological Assessments & PHab; SWAMP comparable methods for Nutrients	Once(Spring Sampling)	Grab sample	Spring 5	BMI metrics that indicate substantially degraded community as per Attachment C, Table C-1 For Nutrients: 20% of results in one waterbody exceed one or more water quality standard or established threshold

22 Refers to field protocol, instrumentation and/or laboratory protocol.

23 Refers to the number of sampling events at a specific site during the permit term.

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 Regional 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 Regional 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[22]	Minimum Sampling Occurrence[23]	Duration of Sampling	Minimum # Sample Sites to Monitor	Result(s) that Trigger a Monitoring Project in Provision C.8.c.i.
General Water Quality[29]	Multi-Parameter Probe	Twice (Concurrent with bioassessment & during the Aug. - Sept. timeframe)	15-minute intervals for 1-2 weeks	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]	Twice (Spring & Dry Seasons)	Grab sample	Spring 5 Dry 2	After immediate resampling, concentrations remain > 0.08 mg/L
Temperature	Digital Temperature Logger	Once	60-minute intervals April through Sept.	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	2	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, 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[22]	Minimum Sampling Occurrence[23]	Duration of Sampling	Minimum # Sample Sites to Monitor	Result(s) that Trigger a Monitoring Project in Provision C.8.c.i.
Toxicity– Bedded Sediment, Fine-grained[33]	Applicable SWAMP Comparable Method	Once	Grab sample	2 At fine-grained depositional area at bottom of watershed	See Attachment C, Table C-1
Pollutants – Bedded Sediment,[34] fine-grained	Applicable SWAMP Comparable Method inc. grain size	Once	Grab sample	2 At fine-grained depositional area at bottom of watershed	See Attachment C, Table C-1
Pathogen Indicators[35]	U.S. EPA protocol[36]	Once (During Summer)	Grab Sample	2	Exceedance of USEPA criteria
Stream Survey (stream walk & mapping)[37]	USA[38] or equivalent	Once	N/A	3 stream miles	N/A

33 Bedded sediments should be fine-grain from depositional areas. Grain size and TOC must be reported.

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 listed in Table 8.4. 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 East Contra Costa is not required to test for copper, nickel, or PCBs because they are not 303(d) Listed or TMDLs in the Central Valley Region.

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*, reference EPA 2004 FINAL guidance, March 2004.

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. Status Monitoring Location – One location in Marsh Creek (Marsh Creek Reservoir to San Joaquin River, partly in Delta Waterways, western portion)

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.c.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)[39] or Toxicity Identification Evaluations (TIE).[40] 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

[39] USEPA. August 1999. *Toxicity Reduction Evaluation Guidance for Municipal Wastewater Treatment Plants*. EPA/833B-99/002. Office of Wastewater Management, Washington, D.C.

[40] 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.

more than one Stressor/Source Identification project 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 Central Valley 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 East Contra Costa Permittees in the Central Valley Water Board Region shall be required to participate in one BMP Effectiveness Investigation. The BMP(s) used to fulfill requirements of C.3.b.iii. (Green Street Pilot Project) 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 the county:

(1) Gather geomorphic data to support the efforts of a local watershed partnership[41] 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 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.

[41] A list of local watershed partnerships may be obtained from Central Valley Water Board staff.

- 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.f.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 Delta 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 Delta tributaries (including stormwater conveyances) contribute most to Delta impairment from pollutants of concern; 2) quantifying annual loads or concentrations of pollutants of concern from tributaries to the Delta; 3) quantifying the decadal-scale loading or concentration trends of pollutants of concern from small tributaries to the Delta; 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. The alternative approach may be an inter-regional effort designed to improve measurement and estimation of pollutant loads to the Bay/Delta from small tributaries.

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 the station listed below. The station shall be installed and monitored in the water year beginning October 2011. Upon approval by the Executive Officer, Permittees may use alternate POC monitoring locations.

ii. **Long-Term Monitoring Location** – Permittees shall conduct Long-Term monitoring in Marsh Creek as shown in Table 8.3.

Table 8.3. Long-Term Monitoring Location

Stormwater Countywide Program	Waterbody	Suggested Location
East Contra Costa Permittees in the Central Valley Region	Marsh Creek (Marsh Creek Reservoir to San Joaquin River; partly in Delta Waterways, western portion)	Downgradient from urban area and confluence of Sand Creek and Marsh Creek

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 Central Valley Water Board has an approved TMDL or for which TMDL approval will be completed within the five year permit term of this Order. Category 2 pollutants are those listed under 303(d) Water Quality Limited Segments. 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, Categories 3. SWAMP may schedule collection of Category 3 data at the Long-Term monitoring locations stated in C.8.d.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 – Methylmercury 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 • Diazinon and Chlorpyrifos • Total Mercury • Methylmercury[42] • Suspended Sediments (SSC) • Total Organic Carbon • Hardness • Toxicity – Water Column	Annually	Average of 4 wet weather events per year For methylmercury only: average of 2 wet & 2 dry weather events per year	Flow-weighted composite For methylmercury only: grab samples collected during the first rise in the hydrograph of a storm event.
Category 2 • Group A Pesticides Metals • Dissolved Oxygen • Escherichia coli (E. Coli) • Salinity • DDTs (Dichloro-Diphenyl-Trichloroethane) • DDE (Dichloro-Diphenyl-Ethylene) Dieldrin • Nitrate as N • Pyrethroids - bifenthrin, cyfluthrin, beta-cyfluthrin, cypermethrin, deltamethrin, esfenvalerate, lambda-cyhalothrin, permethrin, and tralomethrin • Carbaryl and fipronil • Total and Dissolved Phosphorus	Oct. 2011 - 2012 water year and Oct. 2013 - 2014 water year	2 times per year	Flow-weighted composite
Category 3 Toxicity – Bedded Sediment, fine-grained[43] Pollutants – Bedded Sediment, fine-grained	Biennially, Coordinate with SWAMP	Once per year, during April-June, coordinate with SWAMP	Grab sample

vi. **Sediment Delivery Estimate/Budget** – The objective of this monitoring is to develop a strong estimate of the amount of sediment entering the Delta 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

[42] The monitoring type and frequency shown for methylmercury 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.

[43] 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.

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.e.).

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 Exceedance –** When data collected pursuant to C.8.a.-C.8.d. 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 by C.8.a.-C.8.d. indicate that discharges are causing or contributing to an exceedance of an applicable water quality standard, Permittees shall notify the Central Valley 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 continuing or recurring exceedances of water quality standards previously reported to the Central Valley Water Board or to exceedances of pollutants that are to be addressed pursuant to Provisions C.8 through C.11 or this Order in accordance with Provision C.1.

ii. **Status & Trends Electronic Reporting** – Permittees shall submit an Electronic Status & Trends 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 & Trends Data Reports shall be in a format compatible with the SWAMP database.[44] 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. Each Urban Creeks Monitoring Report

[44] 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.

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, 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 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 on a countywide basis on behalf of participating Permittees, so that all monitoring conducted during the

Permit term is reported.[45] 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.
- 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)[46] for applicable parameters, including data quality objectives, field and laboratory blanks, field duplicates, laboratory spikes, and clean techniques,

[45] 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.

[46] 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.

using the most recent Standard Operating Procedures. A Regional Monitoring Collaborative may adapt the SWAMP QAPP for use in conducting monitoring in the Central Valley Region, and may use such QAPP if acceptable to the Executive Officer.

C.9. Pesticides Toxicity Control

To prevent the impairment of urban streams by pesticide-related toxicity, 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 chlorpyrifos and diazinon to be met in urban runoff into the Sacramento-San Joaquin Delta Waterways (Delta Waterways)[47] including Appendix 42 of the Basin Plan. Appendix 42 (including Figures 1 and 2) lists the Delta Waterways to which the site-specific diazinon and chlorpyrifos water quality objectives and implementation and monitoring provisions apply.

However, urban creek management agencies (i.e., the Permittees) are not solely responsible for attaining the allocations because their authority to regulate pesticide use is contained 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. Permittees may coordinate with BASMAA, the Urban Pesticide Pollution Prevention Project, the Urban Pesticide Committee, the Bay-Friendly Landscaping and Gardening Coalition, River-Friendly Landscaping 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, 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, Permittees shall adopt IPM policies or ordinances no later than July 1, 2011.

iii. Reporting – Permittees shall submit a copy of their IPM ordinance(s) or policy(s) in the 2011 Annual Report.

C.9.b. Implement IPM Policy or Ordinance

i. Task Description – 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.

[47] The Delta Waterways include only those reaches that are located within the "Legal" Delta, as defined in Section 12220 of the California Water Code.

ii. Reporting

(1) In the Annual Report, 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) Permittees shall maintain pesticide application standard operating procedures and submit them upon request.

C.9.c. Train Municipal Employees

i. Task Description – 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 the Annual Report, 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) Permittees shall submit training materials (e.g., course outline, date, attendees) upon request.

C.9.d. Require Contractors to Implement IPM

i. Task Description – Permittees shall hire IPM-certified contractors or include contract specifications requiring contractors to implement IPM no later than July 1, 2011.

ii. Reporting – In the Annual Report, 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) 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) 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 California Water Code and to accommodate water quality concerns within its pesticide evaluation process;

(3) Permittees shall assemble and submit information (such as monitoring data) as needed to assist the California DPR and County Agricultural Commissioners in ensuring that pesticide applications comply with water quality standards; and

(4) As appropriate, Permittees shall submit comment letters on USEPA and California DPR re-registration, re-evaluation, and other actions relating to pesticides of concern for water quality.

ii. Reporting – In the Annual Report, 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 – 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 the Annual Report, 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 – 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 the 2013 Annual Report, 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 & Gardening Coalition).

i. Point of Purchase Outreach: 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 the Annual Report, 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:** 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 the 2013 Annual Report, 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 the 2013 Annual Report. This documentation may include percentages of residents hiring certified IPM providers and the change in this percentage.

v. **Outreach to Pest Control Operators:** 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, 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

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 2015, 70% by 2018, and 100% by 2023 as further specified below.

During this permit term, 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, 2015. 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 2018 and 100% by 2023. 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 Central Valley Water Board by February 1, 2013. 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, 2015.

   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 Central Valley Water Board by February 1, 2013, 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, 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, 2014 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 Central Valley Water Board notifies the Permittee otherwise.

Each Permittee shall submit a progress report by February 1, 2012, 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, 2015, to treat runoff from an area equivalent to 30% of Retail/Wholesale Land[48] that drains to MS4s within their jurisdictions (see Table 10.1 in Attachment F) 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 F.

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.

[48] [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** – 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 Central Valley Water Board by July 1, 2011. 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 F for population and non-population-based Permittees. Permittees shall proceed with cleanup of selected Trash Hot Spots unless informed otherwise by the Central Valley Water Board.

iii. **Hot Spot Assessments** – 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 Central Valley 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, 2018, and 100% by July 1, 2023.

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 2013 Annual Report, each Permittee shall also report its percent annual trash load reduction relative to its Baseline Trash Load.

ii. 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. Total Mercury and Methylmercury Control Program

The Permittees shall implement the following control programs for mercury and methylmercury. 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 Delta methylmercury TMDL and reduce inorganic mercury loads to make substantial progress toward achieving the urban runoff methylmercury load allocation established for the TMDL. Upon approval of the Delta Mercury Control Program by US EPA the methylmercury waste load allocations for the Permittees, by Delta subregion, in accordance with Table C of the TMDL, are: Central Delta 0.75 grams/year; Marsh Creek 0.30 grams/year; and West Delta 3.2 grams/year. The final compliance date for the waste load allocations is 2030, unless the Central Valley Water Board modifies the Delta Mercury Control program implementation schedule and Final Compliance Date. The Permittees are complying with requirements of this provision through an established collaborative effort with the Permittees of the R2 MRP.

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). The Permittees shall promote and facilitate the collection, recycling and/or diversion of mercury-containing waste products (e.g. gauges, batteries, fluorescent and other lamps, switches, relays and sensors) from the waste stream from industrial and commercial entities (e.g. auto dismantlers).

ii. **Implementation Level** – The Permittees shall evaluate reduction of mercury from controllable sources in storm water, including the identification of mercury-containing products used by the Permittees in their municipal operations (C.2.) (e.g., corporate yards, office buildings). The Permittees shall also describe alternative ways to establish or improve proper handling, disposal and recycling.

iii. **Reporting** – The Permittees shall report on these efforts in their Annual Report, including an estimate of the mass of mercury collected and diverted.

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.e.

iii. Reporting – The Permittees shall report monitoring results or program status annually beginning with their 2013 Annual Report.

C.11.c. This section left intentionally blank

C.11.d. Pilot Project to Evaluate and Enhance Municipal Sediment Removal and Management Practices

i. Task Description – The Permittees shall participate in a project to evaluate ways to enhance mercury 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 inter-region-wide during this permit term. The knowledge and experience gained through pilot implementation will be used to determine the feasibility and efficacy 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.

Sediment control/removal BMPs include:

(1) Operational BMPs implemented under the Municipal Operations Element (Provision C.2.) – cleaning streets, detention basins, and storm-drainage pipelines, sumps and channels;

(2) Regional storm water treatment facilities implemented under the New Development and Redevelopment Element (Provision C.3.) (e.g., detention basins);

(3) Sediment control BMPs implemented under the Commercial/ Industrial Element (Provision C.4); and

(4) Erosion and sediment control BMPs implemented under the Construction Element (Provision C.6).

ii. Implementation Level –The Permittees shall 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.

iii. Reporting

(1) The Permittees shall present a progress report on the results of the evaluation in their 2011 Annual Report and the final evaluation results in their 2012 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.

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C.11.f. This section left intentionally blank.

C.11.g. This section left intentionally blank.

C.11.h. This section left intentionally blank.

C.11.i Methylmercury Exposure Reduction Program

i. Task Description – After US EPA approves the Delta methylmercury TMDL, the Permittees shall complete an Exposure Reduction Strategy as part of the Exposure Reduction Program (ERP). The ERP is not intended to replace timely reduction of mercury and methylmercury loads to Delta waters. Activities will require collaboration with public health agencies to develop an ERP strategy; submission of an Exposure Reduction Workplan; implementation of the workplan and reporting. If the Permittees do not participate in the collaborative effort to develop the ERP, the Central Valley Water Board will evaluate and implement strategies, consistent with the Central Valley Water Board's authority, to assure participation from all Permittees or their representatives.

(1) By [one year after US EPA Delta methylmercury TMDL approval date], the Permittees shall work with Central Valley Water Board staff, State and local public health agencies and other stakeholders, including community-based organizations, tribes, and Delta fish consumers, to complete an Exposure Reduction Strategy. The purposes of the Strategy will be to recommend to the Executive Officer how Permittees will be responsible for participating in an ERP, to set performance measures, and to propose a collaborative process for developing, funding and implementing the program. The Strategy shall take into account the proportional share of methylmercury contributed by individual Permittees.

ii. Implementation Level – The exposure 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, as long as the efforts are consistent with the Exposure Reduction Strategy and fulfill the Exposure Reduction Workplan. The Permittees shall develop, submit, and implement an Exposure Reduction Workplan in accordance with the following:

(1) The Permittees shall, either individually or collectively, or based on the Exposure Reduction Strategy, submit an Exposure Reduction Workplan for Executive Officer approval by [two years after US EPA Delta methylmercury TMDL approval date]. The ERP Workplan must include elements directed toward:

(a) Developing and implementing community-driven activities to reduce mercury exposure;

(b) Raising awareness of fish contamination issues among people and communities most likely affected by mercury in Delta-caught fish such as subsistence fishers and their families;

(c) Integrating community-based organizations that serve Delta fish consumers, Delta fish consumers, tribes, and public health agencies in the design and implementation of an exposure reduction program;

(d) Identifying resources, as needed, for community-based organizations and tribes to participate in the Program;

(e) Utilizing and expanding upon existing programs and materials or activities in place to reduce mercury, and as needed, create new materials or activities; and

(f) Developing measures for program effectiveness.

(2) The Workplan shall address the Exposure Reduction Program objective, elements, and Permittees' coordination with other stakeholders. Permittees shall integrate or, at a minimum, provide good-faith opportunities for integration of community-based organizations, tribes, and consumers of Delta fish into planning, decision making, and implementation of exposure reduction activities. The Permittees shall implement the Workplan by [six months after Executive Officer approval of Workplan].

iii. Reporting – Within three years after Workplan implementation begins, and every three years thereafter, the Permittees, individually or collectively, shall submit a progress report to the Executive Officer. Permittees shall participate in the Exposure Reduction Program until they comply with all requirements related to their individual or subarea methylmercury allocation.

C.11.j This section left intentionally blank.

C.11.k Public Education, Outreach and Participation Program

i. Task Description – The Permittees shall add mercury pollution prevention messages to the Public Outreach and Information Element (C.7) designed to reach residential, commercial and industrial users or sources of mercury-containing products or emissions. The Permittees shall include messages about mercury contamination in fish and Department of Public Health (DPH) fish consumption advisories.

ii. Implementation Level – For public outreach (e.g., auto dismantlers) and municipal operations, the Permittees' mercury control programs (e.g., enhance

household hazardous waste collection program) shall coordinate with the countywide universal waste (U-Waste) management strategy in compliance with the Department of Toxic Substances Control (DTSC) Universal Waste Rule (Reference Number: R-97-08, Effective Date: 02/08/02). Participate with other organizations to develop programs to reduce or eliminate sources or mercury within the Permittees' urbanized area. Permittees may coordinate with publicly owned treatment works and other agencies to develop cooperative plans and programs.

ii. **Reporting –** Describe in the Annual Reports specific coordination efforts related to mercury pollution prevention control (e.g., fluorescent lamp collections, public outreach, sustainable funding mechanisms, and U-waste tonnage tracking). Permittees shall summarize activities completed and document any measureable awareness and behavior changes resulting from outreach. Evaluate the effectiveness of the mercury control programs; provide recommendations for amending Permittees' mercury source control programs; and amend the mercury control programs in accordance with those recommendations.

C.11.l Methylmercury Control Studies

i. **Task Description –** After US EPA approves the Delta Mercury Control Program (methylmercury TMDL), the Permittees shall conduct methylmercury control studies to monitor and evaluate the effectiveness of existing BMPs on the control of methylmercury, and shall develop and evaluate additional BMPs as needed to reduce mercury and methylmercury discharges to the Delta and meet methylmercury waste load allocations. The studies shall quantify methylmercury loads and loads reduced through source control, treatment and other management measures as required in Provision C.8.g.

ii. **Implementation Level –** The Permittees shall demonstrate progress toward completing the methylmercury control studies by submitting a Control Study Workplan by [nine months after the US EPA Delta methylmercury TMDL approval date]. The control study workplan shall include details for:

(1) Control Studies can be developed through a stakeholder group approach or other collaborative mechanism, or by the Permittees. The Permittees are not required to do individual studies if the Permittees join a collaborative study group(s).

(2) Control Studies shall be implemented through Control Study Workplan(s). The Control Study Workplan(s) shall provide detailed descriptions of how methylmercury control methods will be identified, developed, and monitored, and how effectiveness, costs, potential environmental effects, and overall feasibility will be evaluated for the control methods.

(3) The Control Study Work Plan(s) shall include details for organizing, planning, developing, prioritizing, and implementing the Control Studies.

(4) The Control Studies shall evaluate existing control methods and, as needed, additional control methods that could be implemented to achieve methylmercury load and waste load allocations. The Control Studies shall

evaluate the feasibility of reducing sources more than the minimum amount needed to achieve allocations.

(5) The Control Studies also may include an evaluation of innovative actions, watershed approaches, offsets projects, and other short and long-term actions that result in reducing inorganic (total) mercury and methylmercury to address the accumulation of methylmercury in fish tissue and to reduce methylmercury exposure.

(6) Permittees may evaluate the effectiveness of using inorganic (total) mercury controls to control methylmercury discharges.

(7) Permittees may conduct characterization studies to inform and prioritize the Control Studies. Characterization studies may include, but not be limited to, evaluations of methylmercury and total mercury concentrations and loads in source waters, receiving waters, and discharges, to determine which discharges act as net sources of methylmercury, and which land uses result in the greatest net methylmercury production and loss.

iii. Reporting – The Permittees shall submit reports in compliance with the following schedule to the Central Valley Water Board:

(1) By [four years after the US EPA Delta methylmercury TMDL approval date] the Permittees shall submit a Control Studies progress report.

(2) By [seven years after US EPA Delta methylmercury TMDL approval date], the Permittees shall complete the Control Studies and submit a Final Report that present the results and descriptions of methylmercury control options, their preferred methylmercury controls, and proposed methylmercury management plan(s) (including implementation schedules), for achieving methylmercury allocations. Final reports for Control Studies shall include a description of methylmercury and/or inorganic (total) mercury management practices identified in during the studies; an evaluation of the effectiveness, and costs, potential environmental effects, and overall feasibility of the control actions. Final reports shall also include proposed implementation plans and schedules to comply with methylmercury allocations as soon as possible.

(3) If the Control Study results indicate that achieving a given methylmercury allocation is infeasible, then the Permittees shall provide detailed information in the Final Report on why full compliance is not achievable, what methylmercury load reduction is achievable, and an implementation plan and schedule to achieve partial compliance.

C.12. 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 exempt 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.12.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 as defined by 40 CFR 35.2005(20);

(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.12.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, is identified as sources of pollutants to receiving waters, such categories or sources shall be addressed as conditionally exempted discharges in accordance with Provision C.12.b below.

C.12.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.12.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 Central Valley Water Board's NPDES General Permits, such as NPDES Nos. CAG915001 for Discharge to Surface Waters of Groundwater from Cleanup of Petroleum Fuel Pollution; CAG995002 for Limited Threat Discharges of Treat/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and other Limited Threat Wastewaters to Surface Waters; and CAG995001 for Dewatering and Other Low Threat Discharges to Surface Waters.

(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 Central Valley Water Board upon becoming aware of the compliance issue.

(b) **Required BMPs** – When uncontaminated (meeting the criteria in C.12.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; where natural turbidity is between 0 and 5 NTUs, increases shall not exceed 1 NTU; where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent; where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs; and where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent (%). For Delta waters, the general objectives for turbidity apply subject to the following: except for periods of storm runoff; the turbidity of Delta waters shall not exceed 50 NTUs in the waters of the Central Delta and 150 NTUs in other Delta waters (e.g., western).

(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[49] 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 Central Valley 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.12.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 Central Valley Water Board's NPDES General Permits, such as NPDES Nos. CAG915001 for Discharge to Surface Waters of Groundwater from Cleanup of Petroleum Fuel Pollution; CAG995002 for Limited Threat Discharges of Treat/Untreated Groundwater from Cleanup Sites, Wastewater from Superchlorination Projects, and other Limited Threat Wastewaters to Surface Waters; and CAG995001 for Dewatering and Other Low Threat Discharges to Surface Waters.

(ii) The Permittees shall require that water samples from these discharge types be analyzed using approved USEPA Methods

[49] Pumped groundwater not exempted in C.15.a or conditionally exempted in C.15.b.i.(1).

(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.12.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.

(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; where natural turbidity is between 0 and 5 NTUs, increases shall not exceed 1 NTU; where natural turbidity is between 5 and 50 NTUs, increases shall not exceed 20 percent; where natural turbidity is between 50 and 100 NTUs, increases shall not exceed 10 NTUs; and where natural turbidity is greater than 100 NTUs, increases shall not exceed 10 percent (%). For Delta waters, the general objectives for turbidity apply subject to the following: except for periods of storm runoff; the turbidity of Delta waters shall not exceed 50 NTUs in the waters of the Central Delta and 150 NTUs in other Delta waters (e.g., western).

(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 Central Valley 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,[50] Unplanned,[51] 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**[52] – The Permittees shall implement appropriate BMPs for dechlorination, and erosion and sediment controls for all planned potable water discharges.

(b) **Notification Requirements**

(i) The Permittees shall notify the Central Valley 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

[50] 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.

[51] Unplanned discharges are non-routine, the result of accidents or incidents that cannot be scheduled or planned for in advance.

[52] 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.

- 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	20% of background
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.

(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 Central Valley 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 Central Valley 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.12.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.12.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 Central Valley 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[53] 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.

[53] 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.

(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 Central Valley 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 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.12.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 Central Valley 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 Central Valley 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.12.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.12.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.13. Annual Reports

C.13.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.12. 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.13.b. The Permittees shall collaboratively develop a common annual reporting format for acceptance by the Executive Officer by April 1, 2010.2011. 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. 12, with the agreement of the Permittees and by the approval of the Executive Officer.

C.13.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.14. Modifications to this Order

This Order may be modified, or alternatively, revoked or reissued, before the expiration date as follows:

C.14.a. To address significant changed conditions identified in the technical or Annual Reports required by the Central Valley Water Board, or through other means or communication, that were unknown at the time of the issuance of this Order;

C.14.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; or

C.14.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.15. Standard Provisions

Each Permittee shall comply with all parts of the Standard Provisions contained in Attachment G of this Order.

C.16. Expiration Date

This Order expires on **xx xxxx 2015**, 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.17. Effective Date

The Effective Date of this Order and Permit shall be **xx xxxx 2010,** fifty days after the xx September 2010 adoption date.

I, PAMELA C. CREEDON, 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, Central Valley Region, on **xx September 2010.**

_____
PAMELA C. CREEDON, Executive Officer

Appendix I: East Contra Costa Municipal Regional Stormwater Permit Fact Sheet

Attachment A: Provision C.3.b. Sample Reporting Table
Attachment B: Provision C.3.g. East Contra Costa Permittees' Hydromodification Requirements
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Attachment H: Central Valley Regional Boundary-County Boundary-Delta Boundary

ACRONYMS & ABBREVIATIONS

ACCWP	Alameda Countywide Clean Water Program
BAHM	Bay Area Hydrology Model
Basin Plan	*Water Quality Control Plan for the Central Valley-Sacramento/San Joaquin River Basins*, Fourth Edition, revised September 2009
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
Central Valley Water Board	Central Valley 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; water contact and non-contact recreation; aesthetic enjoyment; ground water recharge; fresh water replenishment; 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 Central Valley 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 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; (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.
Pesticides	For the purposes of the water quality objective for pesticides in Provision C.9., the term pesticide shall include: (1) any substance, or mixture of substances which is intended to be used for defoliating plants, regulating plan growth, or for preventing, destroying, repelling, or mitigating any pest which may infest or be detrimental to vegetation, man, animals, or households, or be present in any agricultural or nonagricultural environment whatsoever, or (2) any spray adjuvant, or (3) any breakdown products of these materials that threaten beneficial uses. Note that discharges of "inert" ingredients included in pesticide formulations must comply with all applicable water quality objectives.
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 Regional 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, including Floating Material, Suspended Material and Settleable Material	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. The Central Valley Water Board's Basin Plan has narrative water quality standards for Floating Material, Suspended Material and Settleable Material.
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 Central Valley-Sacramento/San Joaquin River Basins*, Fourth Edition, revised September 2009 (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.
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

EAST CONTRA COSTA MUNICIPAL

STORM WATER PERMIT

FACT SHEET

FACT SHEET/RATIONALE
TECHNICAL REPORT

for

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2010-xxxx

NPDES NO. CAS083313

WASTE DISCHARGE REQUIREMENTS
FOR
CITY OF ANTIOCH
CITY OF BRENTWOOD
CITY OF OAKLEY
CONTRA COSTA COUNTY
CONTRA COSTA COUNTY FLOOD CONTROL AND WATER
CONSERVATION DISTRICT

STORM WATER DISCHARGES FROM MUNICIPAL
SEPARATE STORM SEWER SYSTEM
CONTRA COSTA COUNTY

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I. CONTACT INFORMATION

Central Valley Regional Water Quality Control Board, Storm Water Section, 11020 Sun Center Drive, Suite 200, Rancho Cordova, CA 95670, 916-464-3291 (main), 916-464-4645 (fax),. The Permit and other related documents can be downloaded from the Central Valley Water Board website under Storm Water.

All documents referenced in this Fact Sheet and in Order are available for public review at the Central Valley 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 916-464-3291 (receptionist).

II. PERMIT GOALS AND PUBLIC PROCESS

Goals

The Goals of this Order for the East Contra Costa Municipal Separate Storm Water (R5-2010-xxx, hereafter, the Permit) Development Process include:

1. Facilitate the Permittees' ongoing involvement in and collaboration with the Contra Costa Clean Water Program (CCCWP), including the implementation of countywide and regional activities that benefit water quality.
2. Provide consistency, where possible, with the Municipal Regional Permit, Order R2-2009-0074, NPDES Permit No. CAS 612008 issued by the San Francisco Bay Water Board to Contra Costa County, the Contra Costa Flood Control and Water Conservation District, and 16 cities in Contra Costa County within the San Francisco Bay Water Board's jurisdiction.
3. Incorporate different or additional requirements, where necessary, to implement the Water Quality Control Plan for the Sacramento and San Joaquin River Basins (Fourth Edition) and other Central Valley Water Board policies, including the Sacramento-San Joaquin Methylmercury TMDL adopted in April 2010.
4. 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.
5. 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.
6. Implement and enhance actions to control 303(d) listed pollutants, pollutants of concern, and achieve Waste Load Allocations adopted under Total Maximum Daily Loads.
7. Implement more specific and comprehensive stormwater monitoring, including monitoring for 303(d) listed pollutants.

Public Process

Central Valley Water Board staff has conducted meetings with the San Francisco Bay Water Board office and the Permittees to facilitate development of consistent and cost effective programs conducted at the countywide level and the region-wide level with the R2 MRP issued by the San Francisco Bay Water Board. The effort was to ensure similar, as much as possible, terms of timelines, schedules and provisions of the San Francisco Bay Water Board Order No. R2-2009-0074.

Implementation

It is the Central Valley 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 Central Valley 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 Central Valley 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 Central Valley Water Board issued a municipal storm water Phase I permit in the early 1990s. This permit was issued to the county-wide urban area of Contra Costa County that flows to the Delta Waterways, 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 Central Valley 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, Central Valley 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. Central Valley 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
- Total Mercury and Methylmercury Control Program
- 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.[54] 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.[55]

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.

[54] LARWQCB, 2003. Review and Analysis of Budget Data Submitted by the Permittees for Fiscal Years 2000-2003.p.2
[55] Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68791-68792.

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.[56] 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.[57] 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.[58]

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.[59] 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.[60] 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

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[56] State Water Board, 2005. NPDES Stormwater Cost Survey. P. ii
[57] Ibid. P. 58.
[58] 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.
[59] Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68793.
[60] State Water Board, 2005. NPDES Stormwater Cost Survey. P. iv.

runoff in southern California has been found to cause illness in people bathing near storm drains.[61] 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.[62] 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 reach $18 billion.[63] 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.[64]

V. LEGAL AUTHORITY

The following statutes, regulations, and Water Quality Control Plans provide the basis for the requirements of Order No. **R5-2010-xxxx**: 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 –*Water Quality Control Plan for the Central Valley-Sacramento/San Joaquin River Basins*, Fourth Edition, revised September 2009 (Basin Plan), 40 CFR 131 Water 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. **R5-2010-xxxx**, and provide the Central Valley Water Board with ample underlying authority to

[61] 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.
[62] 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.
[63] LARWQCB, 2004. Alternative Approaches to Stormwater Control.
[64] Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. P. 68791.

require each of the directives of Order No. **R5-2010-xxxx**. 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 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 Water 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. **R5-2010-xxxx** 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 Central Valley 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 (Regional 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 Regional 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 Regional Water Boards to establish waste discharge requirements (WDRs) to prohibit waste discharges in certain conditions or areas. Since 1990, the Central Valley Water Board has issued area-wide MS4 NPDES permits. Further discussions of the legal authority associated with the prohibitions and directives of the Permit are provided in section V. of this document.

Basin Plan

The *Urban Runoff Policy*, Control Action Considerations 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 "Control Action Considerations of the State Water Board" section in Chapter IV Implementation provides more detail on how the Central Valley Water Board regulates storm water. 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 Central Valley 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 Central Valley Water Board cannot delegate its own authority to enforce these general permits to the Permittees. Therefore, Central Valley 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 Central Valley 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 Central Valley Water Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. The Central Valley Water Board will consider such facilities for coverage under NPDES permitting pursuant to USEPA Phase II stormwater regulations. Under Phase II, the Central Valley 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 – Central Valley Basin Plan, Fourth Edition, Chapter IV Implementation.

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 Central Valley Water Board's *Water Quality Control Plan for the Central Valley-Sacramento/San Joaquin River Basins*, Fourth Edition (Basin Plan) enforces 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.

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 Regional 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 Regional 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 Regional 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) Develop 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.

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 Central Valley 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, Central Valley 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, Central Valley 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 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 Central Valley 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 waste streams 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 Water Board guidance, court decisions, and other Water Boards' requirements. In the precedential decision contained in its WQ Order No. 2000-11, the State Water Board upheld the SUSMP (Standard Urban Stormwater Mitigation Plan) requirements issued by the Los Angeles Regional 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 Water 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 Water Board. Provision C.3.b.ii.(1) is also consistent with Order No. R9-2007-0001 issued by the San Diego Regional Water Board, Order Nos. R4-2009-0057 and R4-2001-182 issued by the Los Angeles Regional Water Board, Order No. 2009-0030 issued by the Santa Ana Regional Water Board, and State Water 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. This permit allows two years from the effective date for the Permittees to implement the lower 5000 ft^2 threshold for the special land use categories, four 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, 2012, 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, 2012 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. 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 Permit 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 Permit 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.

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 participate in ten pilot "green street" projects within the Permit term as mandated by the R2 MRP. 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. 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 one pilot "green street" project by the Permittees within the Permit term. This project 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/or local. 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[65]. 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 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.

[65] 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)**

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 Central Valley 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 Central Valley Water Board may be applied to these types of Special Projects.

This Provision requires that by December 1, 2011, Permittees shall submit a proposal to the Central Valley 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.

Within Provision C.3.g, the major elements of the HM requirements are stated. Permittees will continue to implement the HM requirements (Attachment B), Additional requirements and/or options contained in the Attachment B, 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.

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 Attachment B of the Permit.

Within the Attachment, the Permittees has identified conditions 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 the Delta Waterways; and underground storm drains discharging to the Delta Waterways.

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.

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.

Appendix B to this Permit contains the hydrograph modification management standard to be implemented by the Permittees. As currently implemented by the Permittees, all projects that create or replace an acre or more of impervious area are subject to HM requirements. Applicants may demonstrate compliance by one of four methods:

1. Demonstrate the project will not increase impervious area and also will not increase the efficiency of drainage.
2. Use the design procedure, criteria, and sizing factors for LID features and facilities in the Stormwater C.3 Guidebook.
3. Use a continuous simulation computer model to simulate pre-and post-project runoff and compare the model output for a period of at least 30 years to show flow rates and durations will not increase, using the specified criteria.
4. Demonstrate, using the specified criteria, that increased rates and durations of runoff will not accelerate erosion downstream, either because downstream reaches are already hardened or resistant to erosion all the way from the project site to the Delta, or because a project is proposed to conduct a stream restoration project that will result in a net reduction in the risk of erosion.

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."[66] USEPA also stresses the importance of BMP [stormwater treatment system] maintenance, stating that "Lack of maintenance often limits the effectiveness of stormwater structure controls such as detention/retention basins and infiltration devices."[67]

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. Central Valley 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.

[66] California Stormwater Quality Association, 2003. Stormwater Best Management Practice Handbook – New Development and Redevelopment, p. 6-1.

[67] 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)."[68] 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."[69] 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.[70]

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.[71]

Provision C.4.b.ii.(5) (Inspection Frequency)
USEPA guidance[72] says, "management programs should address minimum frequency for routine inspections." The USEPA Fact Sheet—Visual Inspection[73] says, "To be effective, inspections must be carried out routinely."

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68 *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990. Rules and Regulations. P. 48056.
69 Ibid.
70 *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990, Rules and Regulations. P. 48006.
71 Ibid. P. 48000
72 USEPA. 1992. Guidance 833-8-92-002, section 6.3.3.4 "Inspection and Monitoring".
73 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.[74] If, at the time of application, the information is unavailable, the Permit must require implementation of a program to meet the application requirements.[75] The requirement in this Provision of the Permit for

[74] 40 CFR 124.3 (applicable to state programs, see section 123.25).
[75] 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[76], 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.[77]

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

[76] http://www.epa.gov/owow/305b/2004report/2004_305Breport.pdf

[77] 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 2011 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."[78] 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.

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."[79] In addition, USEPA expects permits issued to municipalities to address "weak inspection and enforcement."[80] 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) 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

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[78] USEPA. 2000. 833-R-00-002, Storm Water Phase II Compliance Assistance Guide, P.4-31
[79] USEPA. 1992. Guidance 833-8-92-002. Section 6.3.2.3.
[80] *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990. Rules and Regulations. p. 48058.

Discharges Associated with Construction Activities (General Construction Permit). The Central Valley 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 very rare, rains can occur in the Central Valley 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."[81] USEPA 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

[81] Schueler, T., and H. Holland. 2000. *Muddy Water In—Muddy Water Out*? The Practice of Watershed Protection. p. 6.

velocity; both conditions enhance the potential for erosion to occur."[82] 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.[83] 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.[84] 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."[85] USEPA states "the establishment and maintenance of vegetation are the most important factors to minimizing erosion during development."[86]

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.[87] 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.[88] In addition, Central Valley 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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82 USEPA. 1990. *Sediment and Erosion Control: An Inventory of Current Practices*. p. II-1.
83 Schueler, T., and H. Holland. 2000. "Muddy Water In—Muddy Water Out?" *The Practice of Watershed Protection*. p. 5.
84 Ibid.
85 Ibid. p. 11.
86 USEPA. 1990. *Sediment and Erosion Control: An Inventory of Current Practices*. p. II-1.
87 SWCRB. September 2, 2009. *NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities – Order No. 2009-0009-DWQ.*
88 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.[89] In the Phase I stormwater regulations, USEPA states that a primary control technique is good site planning.[90] USEPA goes on to say that the most efficient controls result when a comprehensive stormwater management system is in place.[91] 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."[92] 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."[93]

Provision C.6.e. (Inspections) The Central Valley 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.

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 Central Valley 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 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

[89] USEPA. 2000. *Storm Water Phase II Compliance Assistance Guide*. EPA 833-R-00-002. Section 6.3.2.1.
[90] *Federal Register*. Vol. 55, No. 222, Friday, November 16, 1990. Rules and Regulations. p. 48034.
[91] Ibid.
[92] USEPA. 2000. *Storm Water Phase II Compliance Assistance Guide*. EPA 833-R-00-002. Section 4.6.2.4, pp. 4–30.
[93] Ibid. pp. 4–31.

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.[94]

[94] 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.95

C.7-5 Citizen involvement events should make every effort to reach out and engage all economic and ethnic groups.[96]

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 East Contra Costa Permittees as well as the 77 entities subject to the R2 MRP. 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.

95 State Water Board. 1994. Urban Runoff Technical Advisory Committee Report and Recommendations. Nonpoint Source Management Program.

96 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. 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.

This Permit separates out the Public Outreach Events from the Citizen Involvement Events to ensure that citizens in all 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.[97]

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.[98]

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 actions pursuant to this Permit and, accordingly, demonstrate compliance with

[97] 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
[98] USEPA. 1992. NPDES Storm Water Sampling Guidance Document. EPA/833-B-92-001.

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 Central Valley Region.

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[99] 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 data which are representative of the monitored activity." 40 C.F.R. §

[99] San Francisco Baykeeper vs. Regional Water Quality Control Board, San Francisco Bay Region, Consolidated Case No. 500527, filed Nov. 14, 2003.

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 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.8-7 In 1998 BASMAA published *Support Document for Development of the Regional Stormwater Monitoring Strategy*,[100] 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

[100] 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.

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.8-8 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 Central Valley Water Board as required under CWA section 303(d).

C.8-9 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

- 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 inter-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.

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 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 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.[101] 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 creeks discharging to the Delta and ultimately the Bay area.
- 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.

[101] 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.

Provisions C.8.c.iii. and C.8.e.iii. Frequency
Status Monitoring is an annual requirement for the Permittees. ,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.

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.

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.[102] 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[103] 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.e. is intended to do the following:

- 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 Central Valley Water Board to require technical water quality reports. Provision C.8.f. 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

[103] See section C.9, C.11, C.12, and C.13 of this Fact Sheet for more information on Pollutants of Concern.

reporting to better facilitate analyses of the data, including for the CWA section 303(d) listing process.

C.9. – C.11. Pollutants of Concern including Total Maximum Daily Loads

Provisions C.9 through C.11 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.11:

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: Chapter IV. Control Action Considerations of the State Water Board, of the Region's Water Quality Control Plan (Basin Plan) *Urban Runoff Policy* requires;

a. Subregional municipal and industrial plans are required to assess the impact of urban runoff on receiving water quality and consider abatement measures if a problems exits; and
b. Effluent limitations for storm water runoff are to be included in NPDES permits where it results in water quality problems.

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 Central Valley 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 Central Valley 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 (Total Mercury, methylmercury, legacy pesticides)

The control measures for total mercury and methylmercury are intended to implement the urban runoff requirements stemming from TMDLs for this pollutant for the Central Valley Water Board. The total mercury/methylmercury TMDL is pending adoption by the State Water Board, the Office of Administrative Law, and U.S. EPA. The urban runoff management requirements in the total mercury and methylmercury TMDL implementation plan call for permit-term requirements based on an assessment of controls to reduce total mercury and methylmercury to the MEP, and that is the intended approach of the required provisions for all pollutants of concern. Many of the control actions addressing mercury will result in reductions of a host of sediment-bound pollutants, including legacy pesticides. The strategy for these pollutants is to use total mercury and methylmercury 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 Central Valley 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 (Pesticides Toxicity Control), C.10 (Trash Load Reduction) and C. 11 (Total Mercury and Methylmercury Control

Program) 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. Provision C.9 of the Permit incorporate requirements for the TMDLs that have been fully approved (pesticides) and are effective for the Permittees. These TMDLs are for pesticide-related toxicity, specifically Diazinon and Chlorpyrifos, in urban creeks and the Delta Waterways. Additionally, Provision C.11. contain measures that address total mercury and methylmercury in compliance with the Central Valley Water Board. The Central Valley Water Board has adopted a total mercury and methylmercury TMDL, but it is still pending approval by the State Water Board, the Office of Administrative Law, and U.S. EPA. This total mercury and methylmercury TMDL includes requirements that would be consistent with this provision. Finally, the Trash Load Reduction strategy is incorporated into this Order with agreement between the Permittees, Central Valley Water Board and San Francisco Bay Water Board to facilitate development of consistent and cost effective programs conducted at the countywide level and the region-wide level

Where a TMDL has been approved, NPDES permits must contain effluent limitations and conditions consistent with the requirements and assumptions in the TMDL .[104] 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.[105] 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.

[104] 40 CFR 122.44(d)(1)(vii)(B)
[105] 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 Central Valley Water Board adopted that establish Water Quality Objectives for Inland Surface Waters and Implementation program for the TMDL for Diazinon and Chlorpyrifos Runoff into the Sacramento-San Joaquin Delta Waterways (as identified in Appendix 42).The Water Quality Objectives for Inland Surface Waters and the Implementation program requires the Permittees to minimize their own pesticide use, conduct outreach to others, and lead monitoring efforts. Control measures implemented by urban runoff management agencies (i.e., Permittees) and other entities (except construction and industrial sites) shall reduce pesticides in urban runoff to the MEP and the permittees will use the included numeric WLAs as performance standards to determine if additional BMPs are needed to achieve the TMDL Numeric Target in the waterbody. The USEPA has banned the sale of all non-agricultural uses of diazinon and most non-agricultural uses of chlorpyrifos. This significant BMP adds to ensuring compliance with the TMDL conditions. In addition, water quality monitoring of pesticides specified in this permit will aid in determining compliance with the pesticide WLAs.

The Central Valley Water Board has adopted water quality objectives for:

- Diazinon: 160 nanograms per liter (ng/L or parts per trillion), one-hour average, not to be exceeded more than once in a three-year period and 100 ng/L, four-day average, not to be exceeded more than once in a three-year period, which apply to Sacramento-San Joaquin Delta Waterways (Delta Waterways) (Basin Plan);

- Chlorpyrifos: 25 ng/L, one-hour average, not to be exceeded more than once in a three-year period and 15 ng/L, four-day average, not to be exceeded more than once in a three-year period, which apply to Delta Waterways (Basin Plan).

The Permittees must consider whether any proposed alternative to the use of diazinon or chlorpyrifos has the potential to degrade ground or surface water. If the alternative has the potential to degrade groundwater, alternative pest control methods must be considered. If the alternative has the potential to degrade surface water, control measures must be implemented to ensure that applicable water quality objectives and Central Valley Water Boards plans and policies are not violated, including the State Water Resources Control Board Resolution 68-16.

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 diazinon and chlorpyrifos waste load allocations.

The Central Valley Water Board has also established in the Basin Plan the Loading Capacity (LC) for the Delta Waterways and Sacramento River, Waste Load Allocations (WLA), and Load Allocations (LA) for discharges to the Delta Waterways and Sacramento River, which are equal to:

$$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$

where:

C_D = diazinon concentration in µg/L of point source discharge for the WLA; nonpoint source discharge for the LA; or a Delta Waterway for the LC.
C_C = chlorpyrifos concentration in µg/L of point source discharge for the WLA; nonpoint source discharge for the LA; or a Delta Waterway for the LC.
WQO_D = acute or chronic diazinon water quality objective in µg/L.
WQO_C = acute or chronic chlorpyrifos water quality objective in µg/L.

Compliance with the waste load allocation is required by **December 1, 2011** (Basin Plan).

Central Valley Water Board's Basin Plan requires dischargers of diazinon and chlorpyrifos to Delta Waterways to submit a management plan (i.e., Integrated Pest Management plan (IPM) that incorporates, at a minimum, BMPs, BMP implementation plan, effectiveness assessment, and schedule) that describes actions that will be taken to reduce diazinon and chlorpyrifos discharges and meet the applicable allocations.

The approved IPM, and any modifications to it, meets the requirements for a management plan as described in the Basin Plan.

Specific Provision C.9 Requirements

C.9 provisions fully implement the TMDL for Diazinon and Chlorpyrifos Runoff into the Sacramento-San Joaquin Delta Waterways (as identified in Appendix 42). 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."

Central Valley Water Board's Basin Plan, Chapter III – Water Quality Objectives for Inland Surface Waters, which apply to all surface waters in the Sacramento and San Joaquin River Basins, including the Delta. The Basin Plan prohibits,

- **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; and
- **Suspended Material:** Water shall not contain suspended material in concentrations that cause nuisance or adversely affect beneficial uses.

Fact Sheet Findings in Support of Provision C.10

C.10-1 Trash and litter are a pervasive problem near and in creeks and Delta Waterways, which flow to the 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 Delta Waterways. 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 Because eastern Contra Costa County, within the Central Valley Region flows to the Bay, this permit includes trash reduction efforts to be consistent with the San Francisco Bay MRP Order No. R2-2009-0074. Data collected by San Francisco Bay Water Board staff using the SWAMP Rapid Trash Assessment (RTA) Protocol,[106] over the 2003–2005 period,[107] 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 are alarmingly high. Even during dry weather conditions, a significant quantity of trash, particularly plastic, is making its way into waters and being transported downstream to the Delta Waterways and eventually 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 San Francisco 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.

[106] SWAMP Rapid Trash Assessment Protocol, Version 8
[107] SWAMP S.F. Bay Region Trash Report, January 23, 2007

- All watersheds studied in the 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.
- 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.
- 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 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 is a regulated water pollutant that has many characteristics of concern to water quality. It accumulates in streams, rivers, bays, and Delta Waterways throughout the 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.[108,109] Some elements of trash exhibit significant threats to human health, such as discarded medical waste, human or pet waste, and broken glass.[110] 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 in amounts that cause

[108] 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.
[109] 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.
[110] 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.

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).

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 2015, 70% by 2018, and 100% by 2023 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 2018 during the following permit term, and the 100% reduction of trash loading by 2023.

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.

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.

C.11. Total Mercury and Methylmercury Control Program

Fact Sheet Findings in Support of Provision C.11

The Delta is impaired because of elevated levels of methylmercury in fish. The Delta is on the Clean Water Act 303(d) list for mercury and the State Water Resources Control Board has designated the Delta as a toxic hot spot under the Bay Protection and Toxic Hot Spot Cleanup Program. Mercury problems are evident region-wide. The main concern with mercury is that, like selenium, it bioaccumulates in aquatic systems to levels that are harmful to fish and their predators. Health advisories have been issued which recommend limiting consumption of fish taken from the Bay/Delta, tributaries to the Delta, and many lakes and reservoirs in the Central Valley. Concentrations of mercury in other water bodies approach or exceed National Academy of Science (NAS), U.S. Environmental Protection Agency (US EPA), and/or U.S. Food and Drug Administration (FDA) guidelines for wildlife and human protection. In addition to these concerns, fish-eating birds taken from some bodies of water in the Basins have levels of mercury that can be expected to cause toxic effects. Bird-kills from mercury also have been documented in Lake Berryessa. (There is also concern for birds in the Delta, but no studies have been completed.)

To address the mercury impairments, Central Valley Regional Water Quality Control Board (Central Valley Water Board) staff has been developing mercury control programs (also known as total maximum daily load (TMDL) control programs) for waterbodies on the 303(d) list. The Central Valley Water Board has adopted TMDLs for Clear Lake and the Cache Creek watershed. On 22 April 2010, the Central Valley Water Board adopted a Basin Plan amendment to the *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins* for the Control of Methylmercury and Total Mercury in the Sacramento-San Joaquin Delta Estuary (Resolution No. R5-2010-0043) and is pending subsequent approval by the State Water Board, the Office of Administrative Law, and U.S. EPA. U.S. E.P.A. Approval of the TMDL is expected in 2011, which is within their five year term of this Order.

Specific Provision C.11 Requirements

C.11-1. On 22 April 2010, the Central Valley Water Board adopted a Basin Plan amendment to the Water Quality Control Plan for the Sacramento River and San Joaquin River basins for the Control of Methylmercury and Total Mercury in the Sacramento-San Joaquin Delta Estuary (Resolution No. R5-2010-0043) and is pending subsequent approval by the State Water Board, the Office of Administrative Law, and U.S. EPA. U.S. E.P.A. Approval of the TMDL is expected in 2011, which is within the five year term of this Order. C.11-2 through C.11-6 are components of the methylmercury TMDL implementation plan relevant to implementation through the municipal storm water permit, as well as guidance to determine mercury and methylmercury load estimates.

C.11-2 Upon approval of the Delta Mercury Control Program by US EPA, the methylmercury waste load allocations for the Permittees, by Delta subregion, are:

Central Delta 0.75 grams/year,
Marsh Creek 0.30 grams/year, and
West Delta 3.2 grams/year

The final compliance date for the waste load allocations is 2030. Compliance with the methylmercury waste load allocations shall be met as soon as possible, but no later than 2030, unless the Central Valley Water Board modifies the TMDL implementation schedule and Final Compliance Date. Methylmercury studies are to be completed by about 2017.

C.11-3 The NPDES permits for urban runoff management agencies (i.e., Permittees) shall require pollution prevention measures and the implementation of BMPs to minimize total mercury discharges. In addition to controlling mercury loads, BMPs or control measures shall include actions to reduce mercury-related risks to human health 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 pollution prevention measures and BMPs to minimize total (inorganic) mercury discharges to the MEP.

C.11-4 The Permittees are required to comply with the following additional requirements that are incorporated into this NPDES permit issued by the Central Valley Water Board:

a.. Implement pollution prevention measures and BMPs to minimize total (inorganic) mercury discharges;

b. Develop and implement a monitoring system to quantify either mercury loads or loads reduced through treatment, source control, and other management efforts;

c. Monitor levels of methylmercury in discharges;

d. After the US EPA approves the methylmercury TMDL, conduct methylmercury control studies to monitor and evaluate the effectiveness of existing BMPs on the control of methylmercury, and develop and evaluate additional BMPs, as needed, to reduce mercury and methylmercury discharges to the Delta and meet methylmercury waste load allocations. The studies will evaluate methylmercury loads and loads reduced through source control, treatment and other management measures as required in Provision C.8.g.

e. After the US EPA approves the methylmercury TMDL, work with State and local public health agencies and other stakeholders, including community-based organizations, tribes, and Delta fish consumers, to complete an Exposure Reduction Strategy. The Exposure Reduction Program (ERP) is not intended to replace timely reduction of mercury and methylmercury loads to Delta waters.

f. 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. Other reports are required as part of the Control Studies and the ERP.

C.11-5 Annual methylmercury loads in urban runoff in MS4 service areas within the Delta and Yolo Bypass may be calculated by the following method or by an alternate method approved by the Executive Officer. The annual methylmercury load in urban runoff for a given MS4 service area during a given year may be calculated by the sum of wet weather and dry weather methylmercury loads. To estimate wet weather methylmercury loads discharged by MS4 urban areas, the average of wet weather methylmercury concentrations observed at the MS4's compliance locations may be multiplied by the wet weather runoff volume estimated for all urban areas within the MS4 service area within the Delta and Yolo Bypass. To estimate dry weather methylmercury loads, the average of dry weather methylmercury concentrations observed at the MS4's compliance locations may be multiplied by the estimated dry weather urban runoff volume in the MS4 service area within the Delta and Yolo Bypass. This method is consistent with that used to develop load estimates in the methylmercury TMDL.

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 or methylmercury loads to the Delta or is outside the jurisdiction or authority of an agency, the Central Valley Water Board may consider issuing individual allocations and regulatory requirements for the source in question.

Specific Provision C.11 Requirements

The C.11 provisions implement the methylmercury TMDL and are consistent with the general approach for sediment-bound pollutants discussed above where the Central Valley Water Board seeks to build an understanding and level of certainty concerning pollution prevention measures and 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 Central Valley Region, some that will be tested on a limited basis first before making the decision to expand region-wide in the next permit term.

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. Industrial and commercial entities will be required to divert mercury-containing waste products (e.g., gauges).

Provision C.11.b. This permit requires methylmercury monitoring. 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.

Provision C.11.c. has been left intentionally blank.
Provision C.11.d. The Permittees are required to evaluate ways to enhance mercury 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. . The knowledge and experience gained through pilot implementation will be used to determine the feasibility and efficacy of enhanced sediment removal and management practices in subsequent permit terms. The Delta Mercury Control Program specifies that Permittees shall implement pollution prevention measures and BMPs to minimize total (inorganic) mercury discharges. This requirement will be implemented through mercury reduction strategies (e.g., street sweeping) required by this permit and other Orders. Annually, the Permittees will be required to report on the results of monitoring and a description of implemented pollution prevention measures and their effectiveness from identified control measures. All sources in the Delta will be required to implement reasonable, feasible actions to reduce sediment in runoff with the goal of reducing inorganic mercury loading to the Delta, in compliance with existing Basin Plan objectives and requirements.

Provision C.11.e. through h. sections have been left intentionally blank.
Provision C.11.i. After the US EPA approves the Delta methylmercury TMDL, the Permittees will be required to complete an Exposure Reduction Strategy. While methylmercury and mercury source reductions are occurring, the Central Valley Water Board recognizes that activities should be undertaken to protect those people who eat

Delta fish by reducing their methylmercury exposure and its potential health risks. The Exposure Reduction Program (ERP) is not intended to replace timely reduction of mercury and methylmercury loads to Delta waters. Activities will require collaboration with public health agencies to develop an ERP strategy; submission of an Exposure Reduction Workplan; implementation of the workplan and reporting. Specific elements of the workplan require: (1) community-driven activities to reduce mercury exposure, (2) raising awareness, (3) integrating community-based organizations into the ERP process, (4) identifying resources, (5) expand upon and create new activities or materials, and (6) program effectiveness. Specific timelines are identified based upon the US EPA TMDL approval date.

Provision C.11.j. has been left intentionally blank.
Provision C.11.k. Permittees are required to include mercury pollution prevention and control-related messages designed to reach residential, commercial and industrial users or sources of mercury-containing products or emissions as part of the Public Outreach and Information Element of the Order. For public outreach (e.g., auto dismantlers) and municipal operations, the Permittees' mercury control programs (e.g., enhance household hazardous waste collection program) are required to coordinate with the countywide universal waste (U-Waste) management strategy in compliance with the Department of Toxic Substances Control (DTSC) Universal Waste Rule (Reference Number: R-97-08, Effective Date: 02/08/02). The Permittees may participate with other organizations to develop programs to reduce or eliminate sources of mercury within the Permittees' urbanized area. Permittees may coordinate with publicly owned treatment works and other agencies to develop cooperative plans and programs. Annual reporting is required to determine the effectiveness of these control programs.

Provision C.11.l. After the US EPA approves the methylmercury TMDL, the Permittees are required to conduct methylmercury control studies to monitor and evaluate the effectiveness of existing BMPs on the control of methylmercury, and develop and evaluate additional BMPs, as needed, to reduce mercury and methylmercury discharges to the Delta and meet methylmercury waste load allocations. Control Studies will be implemented through Control Study Workplans to be submitted nine months after the US EPA has approved the methylmercury TMDL

C.12. 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.12.

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.12. Requirements

Provision C.12.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.12.b.

Provision C.12.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.12.b. The intent of Provision C.12.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.12.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.12.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.12.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.12.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 Central Valley 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 Central Valley Water Board staff on a case-by-case basis.

Provision C.12.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.12.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.12.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.12.b.vii. requires Permittees to identify and describe additional types and categories of discharges not listed in Provision C.12.b., that they propose to conditionally exempt from Prohibition A.1., in periodic submittals to the Executive Officer.

Provision C.12.b.viii. establishes a mechanism to authorize under the Permit non-stormwater discharges owned or operated by the Permittees.

Attachment G: Standard NPDES Stormwater Permit Provisions

The following legal authority applies to Attachment G:

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.

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.

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)(l)(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.
East Contra Costa Permittees
Hydromodification Management Requirements

Hydromodification Management Requirements

1. Demonstrating Compliance with the Hydromodification Management (HM) Standard

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*[111] 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[112] 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:

(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

[111] 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.*

[112] 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.

(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 Central Valley 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. 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.

ATTACHMENT C

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 D

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 D-1.

Table D-1. Sediment Triad Approach to Determining Follow-Up Actions

Chemistry Results[113]	Toxicity Results[114]	Bioassessment Results[115]	Action
No chemicals exceed Threshold Effect Concentrations (TEC), mean Probable Effects Concentrations (PEC) quotient < 0.5 and pyrethroids < 1.0 Toxicity Unit (TU)[116]	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.

[113] 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.

[114] Toxicity is exhibited when *Hyallela* survival statistically different than and < 20 percent of control.

[115] Alterations are exhibited if metrics indicate substantially degraded community.

[116] 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[113]	Toxicity Results[114]	Bioassessment Results[115]	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 E

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 Central Valley 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 Central Valley 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 Central Valley Water Board. [40 CFR 122.41(l)(4)(ii)]

ATTACHMENT F

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)**[117]		# of Trash Hot Spots per 30K Population	# of Trash Hot Spots per 100 Retail / Wholesale Commercial Acres	**Minimum # of Trash Hot Spots**[118]
East Contra Costa County								
Antioch	99,994	488		**146**		4	5	5
Brentwood	50,584	213		**64**		2	3	3
East Contra Costa County Unincorporated.	18,140	91		**27**		1	1	**1**
Oakley	33,189	63		**19**		2	1	1

[117] 30% of Retail / Wholesale Commercial Acres

[118] 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 #.

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
Contra Costa County Flood Control Agency	2	1 trash boom or 1 outfall capture device (minimum 2 ft. diameter outfall) or equivalent measures

ATTACHMENT G

Standard NPDES Stormwater Permit Provisions

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

STANDARD PROVISIONS AND REPORTING REQUIREMENTS
FOR
WASTE DISCHARGE REQUIREMENTS
(National Pollutant Discharge Elimination System)

February 2004

A. GENERAL PROVISIONS

1. Any violation of this Order constitutes a violation of the Federal Clean Water Act (CWA) and the California Water Code (CWC) and, therefore, may result in enforcement action under either or both laws.

2. The Clean Water Act provides that any person who violates a portion of this Order implementing Sections 301, 302, 306, 307, 308, 318, or 405 of the Clean Water Act is subject to a civil penalty not to exceed $25,000 per day for each violation. Any person who willfully or negligently violates this Order with regard to these sections of the CWA is subject to a fine of not less than $2,500 nor more than $25,000 per day of violation, or by imprisonment for not more than one year, or both.

3. The requirements prescribed herein do not authorize the commission of any act causing injury to the property of another; protect the Discharger from liability under federal, state, or local laws; or guarantee the Discharger a capacity right in the receiving waters.

4. The Discharger shall allow representatives of the Regional Water Quality Control Board (hereafter Board), the State Water Resources Control Board (hereafter State Board) and the United States Environmental Protection Agency (hereafter U.S. U.S. EPA), upon presentation of credentials, at reasonable hours, to:

   a. enter premises where wastes are treated, stored, or discharged and facilities in which any required records are kept;

   b. copy any records required to be kept under terms and conditions of this Order;

   c. inspect facilities, monitoring equipment, practices, or operations regulated or required by this Order; and

   d. sample, photograph or video tape any discharge, waste, waste unit or monitoring device.

5. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by the California Public Utilities Commission, it shall be supervised and

operated by persons possessing certificates of appropriate grade according to Title 23, California Code of Regulations (CCR),
Division 3, Chapter 14.

6. The Discharger shall at all times properly operate and maintain all facilities, and systems of treatment and control including sludge use and disposal facilities (and related appurtenances) that are installed or used to achieve compliance with this Order.

   Proper operation and maintenance includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of backup or auxiliary facilities or similar systems that are installed by the Discharger only when necessary to achieve compliance with this Order.

7. After notice and opportunity for a hearing, this Order may be terminated or modified for cause, including, but not limited to:

   a. violation of any term or condition contained in this Order;

   b. obtaining this Order by misrepresentation or by failing to disclose fully all relevant facts;

   c. a change in any condition that requires either a temporary or permanent reduction or elimination of the authorized discharge; and

   d. a material change in the character, location, or volume of discharge.

   The causes for modification include:

   a. New regulations. New regulations have been promulgated under Section 405(d) of the Clean Water Act, or the standards or regulations on which the permit was based have been changed by promulgation of amended standards or regulations or by judicial decision after the permit was issued.

   b. Land application plans. When required by a permit condition to incorporate a land application plan for beneficial reuse of sewage sludge, to revise an existing land application plan, or to add a land application plan.

   c. Change in sludge use or disposal practice. Under 40 Code of Federal Regulations (CFR) 122.62(a)(1), a change in the Discharger's sludge use or disposal practice is a cause for modification of the permit. It is cause for revocation and reissuance if the Discharger requests or agrees.

   The Regional Board may review and revise this Order at any time upon application of any affected person or the Board's own motion.

8. The filing of a request by the Discharger for modification, revocation and reissuance, or termination of this Order, or notification of planned changes or anticipated noncompliance, does not stay any condition of this Order.

   The Discharger shall furnish, within a reasonable time, any information the Board or U.S. EPA may request to determine compliance with this Order or whether cause exists for modifying or terminating this Order. The Discharger shall also furnish to the Board, upon request, copies of records required to be kept by this Order.

9. If a toxic effluent standard or prohibition (including any scheduled compliance specified in such effluent standard or prohibition) is established under Section 307(a) of the CWA, or amendments thereto, for a toxic pollutant that is present in the discharge authorized herein, and such standard or prohibition is more stringent than any limitation upon such pollutant in this Order, the Board will revise or modify this Order in accordance with such toxic effluent standard or prohibition.

   The Discharger shall comply with effluent standards and prohibitions within the time provided in the regulations that establish those standards or prohibitions, **even if this Order has not yet been modified.**

10. If more stringent applicable water quality standards are approved, pursuant to Section 303 of the CWA, or amendments thereto, the Board will revise and modify this Order in accordance with such more stringent standards.

11. This Order shall be modified, or alternately revoked and reissued, to comply with any applicable effluent standard or limitation issued or approved under Sections 301(b)(2)(C) and (D), 304(b)(2), and 307(a)(2) of the CWA, if the effluent standard or limitation so issued or approved:

    a. contains different conditions or is otherwise more stringent than any effluent limitation in the Order; or

    b. controls any pollutant limited in the Order.

    The Order, as modified or reissued under this paragraph, shall also contain any other requirements of the CWA then applicable.

12. The provisions of this Order are severable. If any provision of this Order is found invalid, the remainder of this Order shall not be affected.

13. By-pass (the intentional diversion of waste streams from any portion of a treatment facility or collection system, except those portions designed to meet variable effluent limits) is prohibited except under the following conditions:

    a. (1) by-pass was unavoidable to prevent loss of life, personal injury, or severe property damage; (severe property damage means substantial physical

damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a by-pass; severe property damage does not mean economic loss caused by delays in production);

and

(2) there were no feasible alternatives to by-pass, such as the use of auxiliary treatment facilities or retention of untreated waste; this condition is not satisfied if adequate backup equipment should have been installed in the exercise of reasonable engineering judgment to prevent a by-pass that would otherwise occur during normal periods of equipment downtime or preventive maintenance;

or

b. (1) by-pass is required for essential maintenance to assure efficient operation;

and

(2) neither effluent nor receiving water limitations are exceeded;

and

(3) the Discharger notifies the Board ten days in advance.

The permittee shall submit notice of an unanticipated by-pass as required in paragraph B.1. below.

14. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, failure to implement an appropriate pretreatment program, or careless or improper action. A Discharger that wishes to establish the affirmative defense of an upset in an action brought for noncompliance shall demonstrate, through properly signed, contemporaneous operating logs, or other evidence, that:

a. an upset occurred due to identifiable cause(s);

b. the permitted facility was being properly operated at the time of the upset;

c. notice of the upset was submitted as required in paragraph B. 1.; and

d. remedial measures were implemented as required under paragraph A. 17.

In any enforcement proceeding, the Discharger seeking to establish the occurrence of an upset has the burden of proof.

15. This Order is not transferable to any person except after notice to the Board. The Board may modify or revoke and reissue the Order to change the name of the Discharger and incorporate such other requirements as may be necessary under the CWA.

16. Except for data determined to be confidential under Section 13267 of the CWC, all reports prepared in accordance with terms of this Order shall be available for public inspection at the offices of the Board and U.S. EPA. Effluent data are not confidential.

17. The Discharger shall take all reasonable steps to minimize any adverse effects to waters of the State or users of those waters resulting from any discharge or sludge use or disposal in violation of this Order. Reasonable steps shall include such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge or sludge use or disposal.

18. The fact that it would have been necessary for the Discharger to halt or reduce the permitted activity in order to comply with this Order shall not be a defense for violating this Order.

19. The Discharger shall ensure compliance with any existing or future pretreatment standard promulgated by U.S. EPA under Section 307 of the CWA, or amendment thereto, for any discharge to the municipal system.

20. The discharge of any radiological, chemical or biological warfare agent or high-level, radiological waste is prohibited.

21. A copy of this Order shall be maintained at the discharge facility and be available at all times to operating personnel. Key operating personnel shall be familiar with its content.

22. Neither the treatment nor the discharge shall create a condition of nuisance or pollution as defined by the CWC, Section 13050.

B. GENERAL REPORTING REQUIREMENTS

1. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, daily maximum effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Board by telephone (916) 464-3291*[Note: Current phone numbers for all three Regional Board offices may be*

found on the internet at http://www.swrcb.ca.gov/rwqcb5/contact_us.] within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Board waives confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and, prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

2. Safeguard to electric power failure:

   a. The Discharger shall provide safeguards to assure that, should there be reduction, loss, or failure of electric power, the discharge shall comply with the terms and conditions of this Order.

   b. Upon written request by the Board the Discharger shall submit a written description of safeguards. Such safeguards may include alternate power sources, standby generators, retention capacity, operating procedures, or other means. A description of the safeguards provided shall include an analysis of the frequency, duration, and impact of power failures experienced over the past five years on effluent quality and on the capability of the Discharger to comply with the terms and conditions of the Order. The adequacy of the safeguards is subject to the approval of the Board.

   c. Should the treatment works not include safeguards against reduction, loss, or failure of electric power, or should the Board not approve the existing safeguards, the Discharger shall, within ninety days of having been advised in writing by the Board that the existing safeguards are inadequate, provide to the Board and U.S. EPA a schedule of compliance for providing safeguards such that in the event of reduction, loss, or failure of electric power, the Discharger shall comply with the terms and conditions of this Order. The schedule of compliance shall, upon approval of the Board, become a condition of this Order.

3. The Discharger, upon written request of the Board, shall file with the Board a technical report on its preventive (failsafe) and contingency (cleanup) plans for controlling accidental discharges, and for minimizing the effect of such events. This report may be combined with that required under B.2.

   The technical report shall:

   a. Identify the possible sources of spills, leaks, untreated waste by-pass, and contaminated drainage. Loading and storage areas, power outage, waste treatment unit outage, and failure of process equipment, tanks and pipes should be considered.

   b. Evaluate the effectiveness of present facilities and procedures and state when they

became operational.

c. Predict the effectiveness of the proposed facilities and procedures and provide an implementation schedule containing interim and final dates when they will be constructed, implemented, or operational.

The Board, after review of the technical report, may establish conditions, which it deems necessary to control accidental discharges and to minimize the effects of such events. Such conditions shall be incorporated as part of this Order, upon notice to the Discharger.

4. The Discharger shall file with the Board a Report of Waste Discharge at least 180 days before making any material change in the character, location, or volume of the discharge. A **material change** includes, but is not limited to, the following:

   a. Adding a major industrial waste discharge to a discharge of essentially domestic sewage, or adding a new process or product by an industrial facility resulting in a change in the character of the waste.

   b. Significantly changing the disposal method or location, such as changing the disposal to another drainage area or water body.

   c. Significantly changing the method of treatment.

   d. Increasing the discharge flow beyond that specified in the Order.

5. A publicly owned treatment works (POTW) whose waste flow has been increasing, or is projected to increase, shall estimate when flows will reach hydraulic and treatment capacities of its treatment and disposal facilities. The projections shall be made in January, based on the last three years' average dry weather flows, peak wet weather flows and total annual flows, as appropriate. When any projection shows that capacity of any part of the facilities may be exceeded in four years, the Discharger shall notify the Board by **31 January.** A copy of the notification shall be sent to appropriate local elected officials, local permitting agencies and the press. Within 120 days of the notification, the Discharger shall submit a technical report showing how it will prevent flow volumes from exceeding capacity or how it will increase capacity to handle the larger flows. The Board may extend the time for submitting the report.

6. A manufacturing, commercial, mining, or silvicultural discharger shall notify the Board as soon as it knows or has reason to believe:

   a. That any activity has occurred or will occur that would result in the discharge of any toxic pollutant that is not limited in this Order, if that discharge will exceed the highest of the following "notification levels":

      (1) 100 micrograms per liter (µg/l);

(2) 200 µg/l for acrolein and acrylonitrile; 500 µg/l for 2,4-dinitrophenol and 2-methyl-4,6-dinitrophenol; and 1 milligram per liter (mg/l) for antimony;

(3) five times the maximum concentration value reported for that pollutant in the Report of Waste Discharge; or

(4) the level established by the Board in accordance with 40 CFR 122.44(f).

b. That it expects to begin to use or manufacture, as an intermediate or final product or by-product, any toxic pollutant that was not reported in the Report of Waste Discharge.

7. A POTW shall provide adequate notice to the Board of:

a. any new introduction of pollutants into the POTW from an indirect discharger that would be subject to Sections 301 or 306 of the CWA if it were directly discharging those pollutants, and

b. any substantial change in the volume or character of pollutants being introduced into that POTW by a source introducing pollutants into the POTW at the time of adoption of the Order, and

c. any planned physical alterations or additions to the permitted facility, or changes planned in the Discharger's sludge use or disposal practice, where such alterations, additions, or changes may justify the application of permit conditions that are different from or absent in the existing permit including notification of additional disposal sites not reported during the permit application process, or not reported pursuant to an approved land application plan.

Adequate notice shall include information on the quality and quantity of effluent introduced into the POTW as well as any anticipated impact of the change on the quantity or quality of effluent to be discharged from the POTW.

8. The Discharger shall give advance notice to the Board of any planned changes in the permitted facility or activity that may result in noncompliance with this Order.

9. The Discharger shall submit technical reports as directed by the Executive Officer.

10. 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 Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both.

C. PROVISIONS FOR MONITORING

1. All analyses shall be performed in accordance with the latest edition of *Guidelines Establishing Test Procedures for Analysis of Pollutants,* promulgated by U.S. EPA (40 CFR 136) or other procedures approved by the Board.

2. Chemical, bacteriological, and bioassay analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services. In the event a certified laboratory is not available to the Discharger, analyses performed by a noncertified laboratory will be accepted provided a Quality Assurance-Quality Control Program is instituted by the laboratory. A manual containing the steps followed in this program must be kept in the laboratory and shall be available for inspection by Board staff. The Quality Assurance-Quality Control Program must conform to U.S. EPA guidelines or to procedures approved by the Board.
   Unless otherwise specified, all metals shall be reported as Total Metals.
   Unless otherwise specified, bioassays shall be performed in the following manner:

   a. Acute bioassays shall be performed in accordance with guidelines approved by the Board and the Department of Fish and Game or in accordance with methods described in U.S. EPA's manual for measuring acute toxicity of effluents (EPA-821-R-02-012 and subsequent amendments).

   b. Short-term chronic bioassays shall be performed in accordance with U.S. EPA guidelines
   (EPA-821-R-02-013 and subsequent amendments).

3. Laboratories that perform sample analyses must be identified in all monitoring reports submitted to the Board and U.S. EPA.

4. The Discharger shall conduct analysis on any sample provided by U.S. EPA as part of the Discharge Monitoring Quality Assurance (DMQA) program. The results of any such analysis shall be submitted to U.S. EPA's DMQA manager.

5. Effluent samples shall be taken downstream of the last addition of wastes to the treatment or discharge works where a representative sample may be obtained prior to mixing with the receiving waters. Samples shall be collected at such a point and in such a manner to ensure a representative sample of the discharge.

6. All monitoring and analysis instruments and devices used by the Discharger to fulfill the prescribed monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy.
7. 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 per violation, or be imprisoned for not more than two years per violation, or by both.

8. The Discharger shall retain records of all monitoring information, including all calibration and maintenance records, all original strip chart recordings of continuous monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the application for this Order. Records shall be maintained for a minimum of five years from the date of the sample, measurement, report, or application. This period may be extended during the course of any unresolved litigation regarding this discharge or when requested by the Board Executive Officer.

9. The records of monitoring information shall include:

    a. the date, exact place, and time of sampling or measurements,
    b. the individual who performed the sampling of measurements,
    c. the date(s) analyses were performed,
    d. the individual(s) who performed the analyses,
    e. the laboratory which performed the analyses,
    f. the analytical techniques or methods used, and
    g. the results of such analyses.

D. REPORTING REQUIREMENTS FOR MONITORING

1. The Discharger shall file with the Board technical reports on self-monitoring performed according to the detailed specifications contained in the Monitoring and Reporting Program attached to this Order.

2. Monitoring reports shall be submitted on forms to be supplied by the Board to the extent that the information reported may be entered on the forms. Alternate forms may be approved for use by the Board.

3. The results of all monitoring required by this Order shall be reported to the Board, and shall be submitted in such a format as to allow direct comparison with the limitations and requirements of this Order. Unless otherwise specified, discharge flows shall be reported in terms of the monthly average and the daily maximum discharge flows.

4. The results of analyses performed in accordance with specified test procedures, taken more frequently than required at the locations specified in the Monitoring and Reporting Program, shall be reported to the Board and used in determining compliance.

5. Upon written request of the Board, the Discharger shall submit a summary monitoring report to the Board. The report shall contain both tabular and graphical summaries of the monitoring data obtained during the previous year(s).

6. All reports shall be signed by a person identified below:

a. **For a corporation:** by a principal executive officer of at least the level of senior vice-president.

b. **For a partnership or sole proprietorship:** by a general partner or the proprietor, respectively.

c. **For a municipality, state, federal or other public agency:** by either a principal executive officer or ranking elected or appointed official.

d. A duly authorized representative of a person designated in 6a, 6b or 6c of this requirement if:

(1) the authorization is made in writing by a person described in 6a, 6b, or 6c of this provision,

(2) the authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position), and

(3) the written authorization is submitted to the Board.

Each person signing a report required by this Order or other information requested by the Board shall make the following certification:

"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 gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage 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."

The Discharger shall mail a copy of each monitoring report and any other reports required by this Order to:

Central Valley Regional Water Quality Control Board
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670-6114
Note: Current addresses for all three Regional Board offices may be found on the internet at http://www.swrcb.ca.gov/rwqcb5/contact_us.

In addition, dischargers designated as a "major" discharger shall transmit a copy of all monitoring reports to U.S. EPA (see address in Provision G. 10).

E. DEFINITIONS:

1. The **daily discharge rate** is obtained from the following calculation for any calendar day:

$$\text{Daily discharge rate (lbs/day)} = \frac{8.34}{N} \sum_{I}^{N} Q_i C_i$$

In which N is the number of samples analyzed in a day. Q_i and C_i are the flow rate (mgd) and the constituent concentration (mg/l), respectively, which are associated with each of the N grab samples that may be taken in a day. If a composite sample is taken, C_i is the concentration measured in the composite sample and Q_i is the average flow rate occurring during the period over which samples are composited.

2. The **monthly or weekly average discharge rate** is the total of daily discharge rates during a calendar month or week, divided by the number of days in the month or week that the facility was discharging.

   Where less than daily sampling is required by this permit, the monthly or weekly average discharge rate shall be determined by the summation of all the daily discharge rates divided by the number of days during the month or week for which the rates are available.

   For other than weekly or monthly periods, compliance shall be based upon the average of all rates available during the specified period.

3. The **monthly or weekly average concentration** is the arithmetic mean of measurements made during a calendar month or week, respectively.

4. The **daily maximum discharge rate** means the total discharge by weight during one day.

5. The **daily maximum concentration** is the greatest concentration found in grab or composite samples analyzed for one day.

6. **A grab sample** is an individual sample collected in less than 15 minutes.

7. Unless otherwise specified, a **composite sample** is a combination of individual samples collected over the specified sampling period:

   a. at equal time intervals, with a maximum interval of one hour, and

b. at varying time intervals (average interval one hour or less) so that each sample represents an equal portion of the cumulative flow.

The duration of the sampling period shall be specified in the Monitoring and Reporting Program. The method of compositing shall be reported with the results.

8. **Sludge** means the solids, residues, and precipitates separated from, or created in, wastewater by the unit processes of a treatment system.

9. **Median** is the value below which half the samples (ranked progressively by increasing value) fall. It may be considered the middle value, or the average of the two middle values.

10. **Overflow** means the intentional or unintentional diversion of flow from the collection and transport systems, including pumping facilities.

F. PRETREATMENT PROGRAM REQUIREMENTS (Applies to dischargers required to establish pretreatment programs by this Order.)

The Discharger shall be responsible for the performance of all pretreatment requirements contained in 40 CFR Part 403 and shall be subject to enforcement actions, penalties, fines, and other remedies by the U.S. EPA, or other appropriate parties, as provided in the CWA, as amended (33 USC 1351, et. seq.)

The Discharger shall implement and enforce its Approved publicly owned treatment works (POTW) Pretreatment Program. The Discharger's Approved POTW Pretreatment Program is hereby made an enforceable condition of this permit. U.S. EPA may initiate enforcement action against an industrial user for noncompliance with applicable standards and requirements as provided in the Act.
The Discharger shall enforce the requirements promulgated under Sections 307(b), (c), and (d) and Section 402(b) of the CWA. The Discharger shall cause industrial users subject to Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.

1. The Discharger shall perform the pretreatment functions as required in 40 CFR Part 403 including, but not limited to:

   a. Implement the necessary legal authorities as provided in 40 CFR 403.8(f)(l).

   b. Enforce the pretreatment requirements under 40 CFR 403.5 and 403.6.

   c. Implement the programmatic functions as provided in 40 CFR 403.8(f)(2), in particular, the publishing of a list of significant violators.

d. Provide the requisite funding and personnel to implement the pretreatment program as provided in 40 CFR 403.8(f)(3).

G. ANNUAL PRETREATMENT REPORT REQUIREMENTS (Applies to dischargers required to establish pretreatment programs by this Order.)

The Discharger shall submit annually a report to the Board, with copies to US U.S. EPA Region 9 and the State Board, describing the Discharger's pretreatment activities over the previous 12 months. In the event that the Discharger is not in compliance with any conditions or requirements of this Order, including noncompliance with pretreatment audit/compliance inspection requirements, then the Discharger shall also include the reasons for noncompliance and state how and when the Discharger shall comply with such conditions and requirements.

An annual report shall be submitted by **28 February** or as otherwise specified in the Order and include at least the following items:

1. A summary of analytical results from representative, flow proportioned, 24-hour composite sampling of the POTW's influent and effluent for those pollutants U.S. EPA has identified under Section 307(a) of the CWA which are known or suspected to be discharged by industrial users.

   The Discharger is not required to sample and analyze for asbestos until U.S. EPA promulgates an applicable analytical technique under 40 CFR 136. Sludge shall be sampled during the same 24-hour period and analyzed for the same pollutants as the influent and effluent sampling and analysis. The sludge analyzed shall be a composite sample of a minimum of 12 discrete samples taken at equal time intervals over the 24-hour period. Wastewater and sludge sampling and analysis shall be performed at least annually. The discharger shall also provide any influent, effluent or sludge monitoring data for nonpriority pollutants which may be causing or contributing to Interference, Pass-Through or adversely impacting sludge quality. Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR 136 and amendments thereto.

2. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant which the Discharger knows or suspects were caused by industrial users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name and address of the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass-Through, Interference, or noncompliance with sludge disposal requirements.

3. The cumulative number of industrial users that the Discharger has notified regarding Baseline Monitoring Reports and the cumulative number of industrial user responses.

4. An updated list of the Discharger's industrial users including their names and addresses, or a list of deletions and additions keyed to a previously submitted list. The Discharger shall provide a brief explanation for each deletion. The list shall identify the industrial users subject to federal categorical standards by specifying which set(s) of standards are applicable. The list shall indicate which categorical industries, or specific pollutants from each industry, are subject to local limitations that are more stringent than the federal categorical standards. The Discharger shall also list the noncategorical industrial users that are subject only to local discharge limitations. The Discharger shall characterize the compliance status through the year of record of each industrial user by employing the following descriptions:

    a. complied with baseline monitoring report requirements (where applicable);

    b. consistently achieved compliance;

    c. inconsistently achieved compliance;

    d. significantly violated applicable pretreatment requirements as defined by 40 CFR 403.8(f)(2)(vii);

    e. complied with schedule to achieve compliance (include the date final compliance is required);

    f. did not achieve compliance and not on a compliance schedule; and

    g. compliance status unknown.

    A report describing the compliance status of each industrial user characterized by the descriptions in items c. through g. above shall be submitted for each calendar quarter **within 21 days of the end of the quarter.** The report shall identify the specific compliance status of each such industrial user and shall also identify the compliance status of the POTW with regards to audit/pretreatment compliance inspection requirements. If none of the aforementioned conditions exist, at a minimum, a letter indicating that all industries are in compliance and no violations or changes to the pretreatment program have occurred during the quarter must be submitted. The information required in the fourth quarter report shall be included as part of the annual report. This quarterly reporting requirement shall commence upon issuance of this Order.

5. A summary of the inspection and sampling activities conducted by the Discharger during the past year to gather information and data regarding the industrial users. The summary shall include:

    a. the names and addresses of the industrial users subjected to surveillance and an explanation of whether they were inspected, sampled, or both and the frequency of these activities at each user; and

b. the conclusions or results from the inspection or sampling of each industrial user.

6. A summary of the compliance and enforcement activities during the past year. The summary shall include the names and addresses of the industrial users affected by the following actions:

   a. Warning letters or notices of violation regarding the industrial users' apparent noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the apparent violation concerned the federal categorical standards or local discharge limitations.

   b. Administrative orders regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

   c. Civil actions regarding the industrial users' noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

   d. Criminal actions regarding the industrial users noncompliance with federal categorical standards or local discharge limitations. For each industrial user, identify whether the violation concerned the federal categorical standards or local discharge limitations.

   e. Assessment of monetary penalties. For each industrial user identify the amount of the penalties.

   f. Restriction of flow to the POTW.

   g. Disconnection from discharge to the POTW.

7. A description of any significant changes in operating the pretreatment program which differ from the information in the Discharger's approved Pretreatment Program including, but not limited to, changes concerning: the program's administrative structure, local industrial discharge limitations, monitoring program or monitoring frequencies, legal authority or enforcement policy, funding mechanisms, resource requirements, or staffing levels.

8. A summary of the annual pretreatment budget, including the cost of pretreatment program functions and equipment purchases.

   Duplicate signed copies of these reports shall be submitted to the Board and the

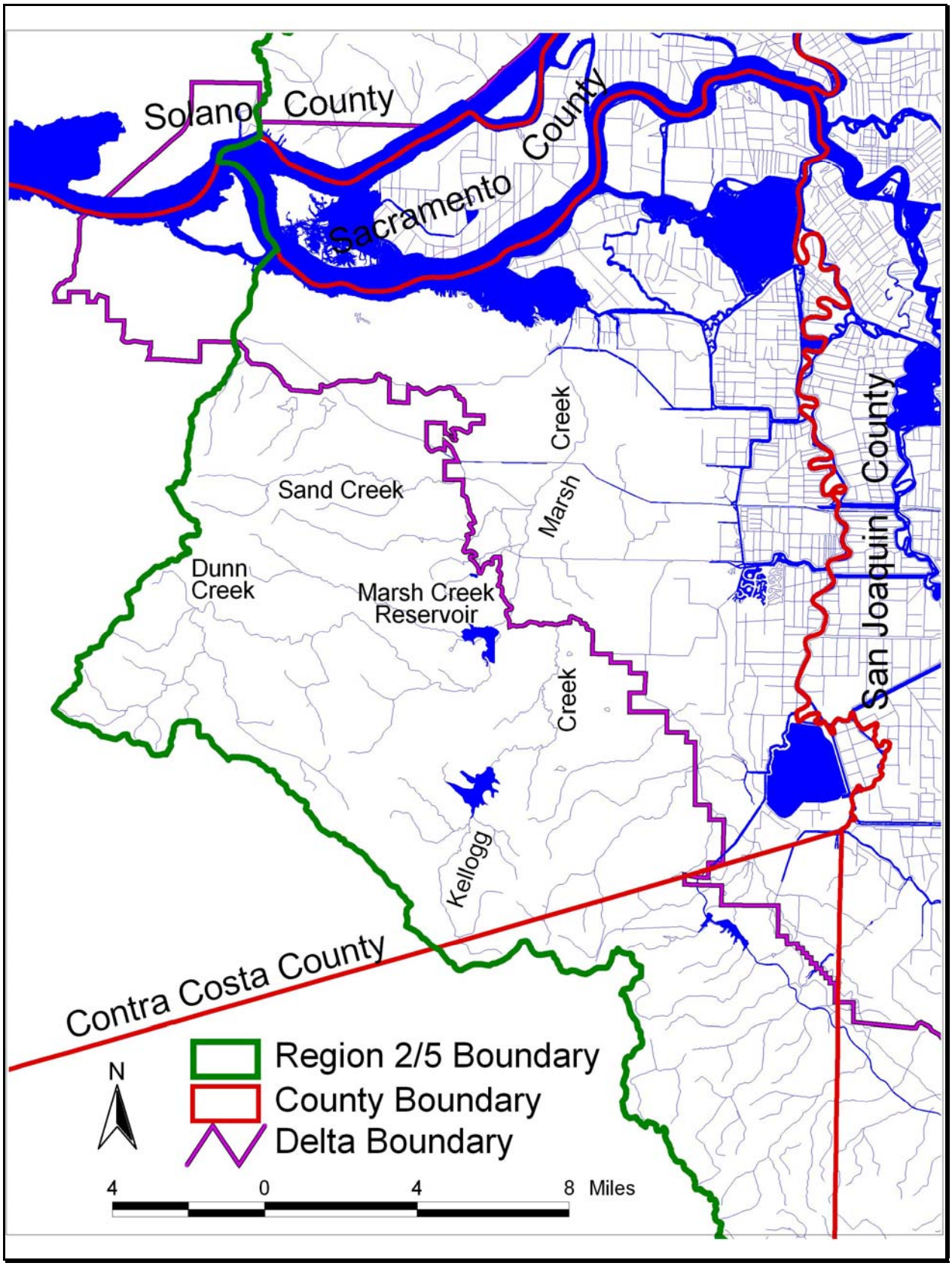
State Water Resources Control Board
Division of Water Quality
P.O. Box 100
Sacramento, CA 95812-0100

and the

Regional Administrator
U.S. Environmental Protection Agency W-5
75 Hawthorne Street
San Francisco, CA 94105

ATTACHMENT H

Central Valley Regional Boundary, County Boundary, and Delta Boundary


Solano County
Sacramento County
San Joaquin County
Contra Costa County
Sand Creek
Dunn Creek
Marsh Creek Reservoir
Marsh Creek
Kellogg Creek
Region 2/5 Boundary
County Boundary
Delta Boundary
N
4 0 4 8 Miles