STATE WATER RESOURCES CONTROL BOARD
WATER QUALITY ORDER NO. 2013-0001-DWQ
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT NO. CAS000004

WASTE DISCHARGE REQUIREMENTS (WDRs) FOR STORM WATER DISCHARGES FROM SMALL MUNICIPAL SEPARATE STORM SEWER SYSTEMS (MS4s) (GENERAL PERMIT)

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FINDINGS

The State Water Resources Control Board (State Water Board) finds that:

1. Storm water is a resource and an asset and should not be treated as a waste product. Managing rainwater and storm water at the source is a more effective and sustainable alternative to augmenting water supply, preventing impacts from flooding, mitigating storm water pollution, creating green space, and enhancing fish and wildlife habitat. California encourages alternative, innovative, multi-objective solutions to help use and protect this valuable resource, while at the same time controlling pollution due to urban runoff.

2. As human population increases, urban development creates new pollution sources and brings with it proportionately higher levels of car emissions, car maintenance wastes, municipal sewage, pesticides, household hazardous wastes, pet wastes, trash, etc. which can either be washed or directly dumped into the municipal separate storm sewer system (MS4). As a result, the runoff leaving the developed urban area is greater in pollutant load than the pre-development runoff from the same area. Also, when natural vegetated pervious ground cover is converted to impervious surfaces such as paved highways, streets, rooftops, walkways and parking lots, the natural absorption and infiltration abilities of the land are lost. Therefore, runoff leaving developed urban area is significantly greater in runoff volume, velocity, peak flow rate, and duration than pre-development runoff from the same area. The increased volume, velocity, rate, and duration of runoff greatly accelerate the erosion of downstream natural channels. In addition, the greater the impervious cover the greater the significance of the degradation.

3. Pollutants of concern found in urban runoff include sediments, non-sediment solids, nutrients, pathogens, oxygen-demanding substances, petroleum hydrocarbons, heavy metals, floatables, polycyclic aromatic hydrocarbons (PAHs), trash, pesticides and herbicides.

4. Trash and litter are a pervasive problem in California. Controlling trash is a priority, because trash adversely affects our use of California's waterways. Trash impacts aquatic life in streams, rivers, and the ocean as well as terrestrial species in adjacent riparian and shore areas. Trash, particularly plastics, persists for years. It concentrates organic toxins, entangles and ensnares wildlife, and disrupts feeding when animals mistake plastic for food and ingest it. Additionally, trash creates aesthetic impacts, impairing our ability to enjoy our waterways.

5. The State Water Resources Control Board (State Board) is developing a statewide policy for trash control in California's waterways. The draft Trash Policy will identify trash as a separate pollutant and establish methods to control trash pollution in waterways, statewide. Following adoption of the draft Trash Policy, the State Water Board may re-open this Order to incorporate water body trash pollution control methods and introduce Trash Reduction Program requirements.

6. A higher percentage of impervious area in urban areas correlates to a greater pollutant loading, resulting in turbid water, nutrient enrichment, bacterial contamination, organic matter loads, toxic compounds, temperature increases, and increases in trash or debris.

7. Conventional landscaping features large lawns, non-native plants, abundant irrigation, and heavy use of fertilizers, herbicides, and pesticides. It frequently requires significant mowing,

blowing, trimming, and removal of plants debris. Adopting more storm water-friendly landscape practices reduces pollutants and also provides tangible water conservation, wildlife habitat, and energy saving benefits.

8. The State Water Board recognizes that this Order affects varied and diverse entities, including agencies that are required to carry out water conservation regulations, wastewater discharge regulations, and land use regulations that may implement, all or in part, provisions of this Order. The State Water Board seeks to minimize duplicate efforts and maximize resources to achieve the greatest water quality benefit; thus the State Water Board recognizes specified related regulations, cited in the body of this Order, as equivalent to implementing designated provisions of this Order.

9. When water quality impacts are considered during the planning stages of a project, new development and many redevelopment projects can more efficiently incorporate measures to protect water quality.

10. In California, urban storm water is listed as the primary source of impairment for ten percent of all rivers, ten percent of all lakes and reservoirs, and 17 percent of all estuaries (2010 Integrated Report). Although these numbers may seem low, urban areas cover just six percent of the land mass of California and so their influence is disproportionately large. Urbanization causes changes in the landscape, including increased loads of chemical pollutants, increased toxicity, changes to flow magnitude, frequency, and seasonality of various discharges, physical changes to stream, lake, or wetland habitats, changes in the energy dynamics of food webs, sunlight, and temperature; and biotic interactions between native and exotic species. In addition to surface water impacts, urbanization can alter the amount and quality of storm water that infiltrates and recharges groundwater aquifers.

11. Education and awareness programs help change human behavior with respect to reducing the amount of pollution generated from storm water sources within the Permittee's MS4 system. In addition to education, encouraging public participation in local storm water programs can lead to program improvement as well as enabling people to identify and report a pollution-causing activity, such as spotting an illicit discharge.

12. Field experience in conducting outfall surveys indicates that illicit discharges may be present at 2 to 5 percent of all outfalls at any given time. Given that pollutants are being introduced into the receiving water during dry weather, illicit discharges may have an amplified effect on water quality and biological diversity.[1] Therefore, implementation of an effective Illicit Discharge and Detection Elimination program in conjunction with focused wet weather monitoring, as necessary, is an essential component of an effective municipal storm water program.

13. In 1990, the U.S. Environmental Protection Agency (U.S. EPA) promulgated rules establishing Phase I of the National Pollutant Discharge Elimination System (NPDES) storm water program. The Phase I program for MS4s requires operators of "medium" and "large" MS4s, that is, those that generally serve populations of 100,000 or greater, to implement a storm water management program as a means to control polluted discharges from these MS4s.

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[1] Urban Stormwater Management in the United States, National Research Council, 2008

14. A MS4 is a conveyance or system of conveyances that is: 1) owned by a state, city, town, village, or other public entity that discharges to waters of the United States; 2) designed or used to collect or convey storm water (including storm drains, pipes, ditches, etc.); 3) not a combined sewer; and 4) not part of a Publicly Owned Treatment Works or sewage treatment plant.

15. On December 8, 1999, U.S. EPA promulgated Phase II storm water regulations under authority of the Clean Water Act section 402(p)(6). The Phase II Storm Water requires State Water Board to issue NPDES storm water permits to operators of Small MS4s.

16. On April 30, 2003, the State Water Board adopted Water Quality Order No. 2003-0005-DWQ, NPDES General Permit CAS000004 WDRs for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems (General Permit) to comply with Clean Water Act section 402(p)(6).

17. Title 40 of the Code of Federal Regulations (40 C.F.R.) section122.26(b)(16) defines Small MS4s as those not defined as "large" or "medium" MS4s under section122.26(b)(4) or (b)(7) or designated under 40 Code of Federal Regulations section122.26(a)(1)(v). The term Small MS4s includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. (40 C.F.R. §122.26(b)(16)(iii).) These latter subsets of Small MS4s are referred to herein as Non-traditional Small MS4s. Non-traditional Small MS4s discharge the same types of pollutants that are typically associated with urban runoff. Separate storm sewers in very discrete areas, such as individual buildings, are not defined as Small MS4s.

18. Of the Small MS4s defined by federal regulations, only "Regulated Small MS4s" (also referred to as "Permittees" herein) must obtain an NPDES permit. Small MS4s are designated as Regulated Small MS4s in this Order in accordance with the criteria described in Findings 19-25.[2]

19. Under 40 Code of Federal Regulations section 122.32(a)(1) all Small MS4s located within an "urbanized area" as determined by the latest Decennial Census by the Bureau of the Census (Urbanized Area) are automatically designated as Regulated Small MS4s.

20. Under 40 Code of Federal Regulations sections 122.32(a)(2) and 123.35(b) the State Water Board is directed to develop a process, as well as criteria, to designate Small MS4s located outside of an Urbanized Area as Regulated Small MS4s. These criteria are to evaluate whether a storm water discharge results in or has the potential to result in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including habitat and biological impacts.

21. Under guidance provided in 40 Code of Federal Regulations secton123.35(b)(1)(ii), for determining other significant water quality impacts, U.S. EPA recommends a balanced consideration of the following designation criteria on a watershed or other local basis: discharge to sensitive waters, high growth or growth potential, high population density,

[2] In addition to the designation criteria specified in this Order, the State Water Board may designate a Small MS4 as a Regulated Small MS4 in response to a petition received under 40 Code of Federal Regulations section 122.26(f). Any person may petition the State Water Board to require an NPDES permit for a discharge composed entirely of storm water that contributes to a violation of a water quality standard or is a significant contributor of pollutants to the waters of the United States. (*Id.*). The State Water Board must make a final determination on any petition within 180 days after receiving the petition. (40 C.F.R. §123.35(c).)

contiguity to an urbanized area, significant contributor of pollutants to waters of the U.S., and ineffective protection of water quality by other programs.

22. The State Water Board is required to apply the designation criteria at a minimum to all Small MS4s located outside of Urbanized Areas serving jurisdictions with a population density of at least 1,000 people per square mile and a population of at least 10,000. (40 C.F.R. §123.35(b)(2).) The State Water Board has discretion to apply the criteria to jurisdictions with smaller population or lower density. All such jurisdictions are then Regulated Small MS4s.

23. In developing the designation criteria, the State Water Board included factors indicative of the potential to result in exceedances of water quality standards and other significant water quality impacts. The following criteria are used to designate Small MS4s outside of Urbanized Areas as Regulated Small MS4s in this Order.

    a. The Small MS4 has high population *and* high population density – High population means a population of 10,000 or more. High population density means a density of 1,000 residents per square mile or greater. Also to be considered in this definition is a high density created by a non-residential population, such as tourists or commuters.

    b. The Small MS4 discharges to Areas of Special Biological Significance (ASBS) as defined in the California Ocean Plan.

24. Designation of additional Small MS4s as Regulated Small MS4s may be made by the Regional Water Boards on a case by case basis. Case by case determinations of designation shall be based on the potential of a Small MS4's discharges to result in exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including habitat and biological impacts. Where such case by case designations have been recommended by the Regional Water Boards prior to adoption of this Order, the designated Small MS4s are listed on the relevant Attachments to the Order and the reasons for designation are laid out in the Fact Sheet. The Regional Water Boards may continue to make case by case determinations of designation during the permit term. Such designations must be approved by the Regional Water Board after public review and comment.

25. 40 Code of Federal Regulations section 123.35(b)(4) requires designation as a Regulated Small MS4 of any Small MS4 outside an Urbanized Area that contributes substantially to the pollutant loadings of a physically interconnected MS4 regulated by the NPDES storm water program. A Small MS4 is interconnected with a separately permitted MS4 if storm water that has entered the Small MS4 is allowed to flow directly into a permitted MS4. In general, if the Small MS4 discharges more than ten percent of its storm water to the permitted MS4, or its discharge makes up more than ten percent of the permitted MS4's total storm water volume, it is a significant contributor of pollutants to the permitted MS4. In specific cases, the MS4s involved or third parties may show that the ten percent threshold is inappropriate for the MS4 in question.

26. Regulated Small MS4s may seek a waiver from Phase II requirements if they meet criteria specified in 40 Code of Federal Regulations sections 122.32(c)-(e).[3] The State

[3] Waiver criteria also found at 40 C.F.R. 123.35(d).

Water Board has additionally provided for a waiver for those communities outside of urbanized areas with a population of 20,000 or less with an annual median household income (MHI) that is less than 80 percent of the statewide annual MHI. (Wat. Code, § 79505.5, subd. (a)).

27. Small MS4s face highly variable conditions both in terms of threats to water quality from their storm water discharges and resources available to manage those discharges. Therefore, one set of prescriptive requirements is not an appropriate regulatory approach for all Regulated Small MS4s. This Order distinguishes between New and Renewal Traditional Small MS4 Permittees. Additionally, this Order addresses differences between Traditional and Non-traditional Small MS4s by detailing Non-traditional Small MS4 specific provisions in Section F Non-Traditional Small MS4 Provisions. Provisions are tailored to address the diverse program structures of Non-traditional Small MS4s to allow for an appropriate regulatory approach.

28. There are variable levels of resources available to Regulated Small MS4s for public outreach and education and water quality monitoring. Recognizing this, the Order gives Permittees numerous compliance options in these two program areas. However, all Regulated Small MS4s that discharge to ASBS or impaired water bodies[4] must conduct monitoring as specified in Attachment C and Attachment G, respectively. All Regulated Small MS4s with a population of 50,000 or more must conduct monitoring specified in Sections E.13.d.1. or E.13.d.2. of the Order or as approved by the Executive Officer of the applicable Regional Board. Additionally, for the public outreach program, the Regional Water Boards may require the Regulated Small MS4s to utilize the approach of Community-Based Social Marketing.

29. Renewal Traditional Small MS4 Permittees shall comply with Section E. Certain provisions within Section E contain compliance dates that are past the effective date of this Order, in these cases, the Permittee shall implement its existing program until that date.

30. This Order modifies the existing General Permit, Order 2003-0005-DWQ by establishing the storm water management program requirements in the Order and defining the minimum acceptable elements of the municipal storm water management program. Minimum permit requirements are known at the time of permit issuance and not left to be determined later through Regional Water Board review and approval of Storm Water Management Plans (SWMPs).

31. The State Water Board recognizes the necessity of a storm water program guidance document specific to each Permittee to provide planning and guidance for each program area and to identify responsible implementing parties. Permittees must develop and implement a storm water program guidance document and must submit the document during the application process.

32. The State Water Board recognizes that in some instances Renewal Permittees' SWMPs that were approved under the prior General Permit, Order 2003-0005-DWQ have incorporated BMPs designed to address locality-specific storm water issues and that in some cases these

[4] A waterbody that has been determined under state policy and federal law not meet water quality standards. An impaired water is a water that has been listed on the California 303(d) list or has not yet been listed but otherwise meets the criteria for listing. A water is a portion of a surface water of the state, including ocean, estuary, lake, river, creek, or wetland. The water currently may not be meeting state water quality standards or may be determined to be threatened and have the potential to not meet standards in the future. The State of California's 303(d) list can be found at http://www.swrcb.ca.gov/quality.html.

BMPs may, because of locality-specific factors, be more protective of water quality than the minimum requirements established by this Order. Renewal Permittees will additionally include in the guidance document the following: identification and brief description of each BMP and associated measurable goal included in the Permittee's previously approved SWMP under the prior General Permit, Order 2003-0005-DWQ, that constitutes a more specific local or tailored level of implementation that may be more protective of water quality than the minimum requirements of this Order; and identification of whether the Permittee proposes to maintain, reduce, or cease implementation for each more protective, locally-tailored BMP. In no instance may a BMP be reduced or ceased if it is required by the minimum standards set by this Order.

33. Minimum measures have been established in this Order to simplify assessment of compliance and allow the public to more easily assess each Permittee's compliance.

34. Each provision establishes the required task description, minimum implementation levels (i.e., escalating enforcement, reporting requirements for tracking projects, number of monitoring sites, etc.), and reporting elements to substantiate that the Permittee meets these implementation levels. Regional Water Board staff will be able to evaluate each individual Permittee's compliance through Annual Report review and the program evaluation (audit) process.

35. The provisions contained in this Order were derived from two main U.S. EPA documents: MS4 Program Evaluation Guide[5] and the MS4 Permit Improvement Guide[6] along with interviews and information gathered from a lengthy collaborative stakeholder process.

36. Consistent with Clean Water Act section 402(p)(3)(B)(iii), this Order requires controls to reduce pollutants from the MS4 to the maximum extent practicable (MEP). The MEP standard requires Permittees to apply Best Management Practices (BMPs) that are effective in reducing or eliminating the discharge of pollutants to the waters of the U.S. MEP emphasizes pollutant reduction and source control BMPs to prevent pollutants from entering storm water runoff. MEP may require treatment of the storm water runoff if it contains pollutants. The MEP standard is an ever-evolving, flexible, and advancing concept, which considers technical and economic feasibility. BMP development is a dynamic process and may require changes over time as the Permittees gain experience and/or the state of the science and art progresses. To do this, the Permittees must conduct and document evaluation and assessment of each relevant element of its program, and their program as a whole, and revise activities, control measures/BMPs, and measurable goals, as necessary to meet MEP. MEP is the cumulative result of implementing, evaluating, and creating corresponding changes to a variety of technically appropriate and economically feasible BMPs, ensuring that the most appropriate BMPs are implemented in the most effective manner.

37. The Order's Receiving Water Limitations language is consistent with State Water Board Order WQ 99-05 (*Orange County)* adopted by the State Water Board on June 17, 1999. Receiving Water Limitations apply to all Permittees subject to this Order. The State Water Board held a workshop on November 20, 2012, to hear comments on the receiving water limitations provisions in MS4 permits. This Order has a reopener clause that will allow the State Water Board to reopen the Order if the Board directs changes to the Receiving Water Limitations language based on comments received.

38. Non-storm water discharges consist of all discharges from an MS4 that do not originate from precipitation events. This Order effectively prohibits non-storm water discharges through an

[5] Municipal Separate Storm Sewer System (MS4) Program Evaluation Guidance, USEPA, EPA-833-R-07-003, January 1, 2007
[6] MS4 Permit Improvement Guide, USEPA, April 1, 2010

MS4 into waters of the U.S. Certain categories of non-storm water discharges are conditionally exempt as specified at 40 Code of Federal Regulations section 122.26(d)(2)(iv)(B)(1). Non-storm water discharges that are regulated by a separate NPDES permit are not subject to the discharge prohibition. Prohibited non-storm water discharges include conditionally exempt discharges that are found to be a significant source of pollutants to waters of the U.S.

39. Non-storm water discharges to ASBS are prohibited except as specified in the General Exception. Certain enumerated non-storm water discharges are allowed under the General Exception if essential for emergency response purposes, structural stability, slope stability, or if occur naturally. In addition, an NPDES permitting authority may authorize non-storm water discharges to an MS4 with a direct discharge to an ASBS to the extent the NPDES permitting authority finds that the discharge does not alter natural ocean water quality in the ASBS. This Order allows utility vault discharges to an MS4 with a direct discharge to an ASBS, provided the discharge is authorized by the General NPDES Permit for Discharges from Utility Vaults and Underground Structures to Surface Water, NPDES No. CAG 990002. The State Water Board is in the process of reissuing the General NPDES Permit for Utility Vaults. As part of the renewal, the State Water Board will require a study to characterize representative utility vault discharges to an MS4 with a direct discharge to an ASBS and will impose conditions on such discharges to ensure the discharges do not alter natural ocean water quality in the ASBS. Given the limited number and intermittent nature of utility vault discharges to MS4s that discharge directly to an ASBS, the State Water Board finds that discharges from utility vaults and underground structures to an MS4 with a direct discharge to an ASBS are not expected to result in a substantial alteration of natural ocean water quality in the ASBS in the interim period while the General NPDES Permit for Discharges from Utility Vaults is renewed and the study is completed. Other short-duration, intermittent non-storm water discharges related to LUPs (e.g. groundwater dewatering, potable water system flushing, hydrotest discharges) are regulated under NPDES permits issued by the Regional Water Boards. Although such discharges are not specifically enumerated in the General Exception as essential for emergency response purposes, structural stability, or slope stability, they may be required to ensure the safety and stability of the utility systems or for operations and maintenance and for extending these essential services. For this reason, and because the short-duration and intermittent nature of these discharges renders them unlikely to result in substantial alteration of natural ocean water quality in the ASBS, this Order permits such discharges to a segment of the MS4 with a direct discharge to an ASBS provided they are authorized by an NPDES permit issued by the State Water Board or relevant Regional Water Board. However, if a Regional Water Board determines a specific discharge from a utility vault or underground structure does alter the natural ocean water quality in an ASBS, the Regional Water Board may prohibit the discharge as specified in this Order.

40. Total Maximum Daily Loads (TMDL) are numerical calculations of the maximum amount of a pollutant that a water body can assimilate and still meet water quality standards. A TMDL is the sum of the allowable loads of a single pollutant from all contributing point sources (waste load allocations) and non-point sources (load allocations), background contribution, plus a margin of safety. Discharges from Small MS4s are point source discharges subject to TMDLs. This Order requires Permittees to comply with all applicable TMDLs approved pursuant to 40 Code of Federal Regulations section 130.7 that assign a Waste Load Allocation to Permittee and that have been identified in Attachment G. The high variance in the level of detail and specificity of TMDLs necessitates the development of more specific permit requirements in many cases to provide clarity to the Permittees regarding responsibilities for compliance. The Regional Water Boards have submitted TMDL-specific permit requirements to the State Water Board, for applicable TMDLs, along with statements explaining how the requirements are designed to achieve the goals of the TMDLs (incorporated into the Fact Sheet). The TMDL-specific permit requirements are summarized

in Attachment G and are an enforceable component of this Order. The Regional Water Boards are additionally being directed through this Order to review the TMDL-specific permit requirements of Attachment G in consultation with the Permittees and the State Water Board staff and propose any revisions to the State Water Board within one year of the effective date of this Order. TMDLs applicable to non-traditional dischargers in the region of the Los Angeles Regional Water Board are listed in Attachment G without TMDL-specific permit requirements. The Los Angeles Water Board is being directed to develop and propose TMDL-specific permit requirements for Attachment G in consultation with the Permittees and the State Water Board staff within one year of the effective date of this Order. Any such revisions will be incorporated into the permit through a reopener.

41. Degraded watershed processes lead to degraded water quality. To fully protect beneficial uses, post-construction runoff retention and hydromodification control criteria for individual projects must be derived with a knowledge of dominant watershed processes. Watershed management zones will be delineated by the State Board during this permit term. The Watershed management zones will be used to identify applicable areas and appropriate criteria for runoff retention and hydromodification control to be incorporated into the next permit. Regional Water Boards that approve watershed process-based criteria for post-construction during this permit term will be permitted to require Permittees to implement these criteria.

42. The post-construction requirements and design standards contained in this Order are consistent with State Water Board Order WQ 2000-11 (*Bellflower)*.

43. State Water Board, California State Parks and the State Historic Preservation Officer may coordinate efforts to manage post-construction projects involving historic sites, structures or landscapes that cannot alter their original configuration in order to maintain their historic integrity.

44. Permittees will submit Annual Reports electronically using the State Water Board's Storm Water Multi-Application Reporting and Tracking System (SMARTS). The purpose of the Annual Report is to evaluate (1) the implementation of Permittees' storm water program; (2) the effectiveness of BMPs and Measurable Goals, (3) the Permittee's improvement opportunities to achieve MEP, and (4) any supplemental information required by a Regional Water Board in accordance with the Regional Water Board's specific requirements.

45. To apply for General Permit coverage authorizing storm water discharges to surface waters pursuant to this Order, the Permittees shall electronically file a Notice of Intent (NOI) using SMARTS and mail the appropriate permit fee to the State Water Board. The NOI represents the Permittee's commitment to comply with the BMPs specified in this Order to achieve compliance with the minimum control measures specified at 40 Code of Federal Regulations sections122.34 (b)(1) through (b)(6).

46. Under 40 Code of Federal Regulations section 122.35, a Separate Implementing Entity (SIE) can implement a storm water management program for another entity such as a municipality, agency, or special district. The SIE implements parts or all of a storm water program for a Permittee. Permittees relying on a SIE to implement their entire program must electronically file an NOI using SMARTS and mail appropriate fee to the State Water Board.

47. Each Permittee is individually responsible for adoption and enforcement of ordinances and/or policies, implementation of identified control measures/BMPs needed to prevent or reduce pollutants in storm water and operation and maintenance (O&M). Enforcement actions concerning this Order will be pursued only against the individual Permittee responsible for specific violations of this Order.

48. In accordance with 40 Code of Federal Regulations section122.28(b)(3), a Regional Water Board may issue an individual MS4 NPDES Permit to a Permittee otherwise subject to this Order, or adopt an alternative general permit that covers storm water discharges regulated by this Order. In accordance with Code of Federal Regulations section 122.34(b)(3), a Regulated Small MS4 in the same urbanized area as a medium or large MS4 may jointly with the medium or large MS4 seek a modification of the other MS4s permit to be added as a limited co-permittee. The applicability of this Order is automatically terminated on the effective date of the individual permit or joint permit or the date of approval for coverage under the alternative general permit.

49. Certain BMPs implemented or required by Permittees for urban runoff management may create a habitat for vectors (e.g., mosquitoes and rodents) if not properly designed or maintained. Close collaboration and cooperation among the Permittees, local vector control agencies, Regional Water Board staff, and the California Department of Public Health is necessary to identify and implement appropriate vector control measures that minimize potential nuisances and public health impacts resulting from vector breeding.

50. 40 Code of Federal Regulations section 131.12 requires that state water quality standards include an anti-degradation policy consistent with the federal policy. The State Water Board established California's anti-degradation policy in State Water Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal anti-degradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Water Quality Control Plans (Basin Plans) implement, and incorporate by reference, both the State and federal anti-degradation policies.

51. This action to adopt an NPDES permit is exempt from the provisions of the California Environmental Quality Act (Public Resources Code § 21100, et seq.) in accordance with Water Code section13389. (*County of Los Angeles v. Cal. Water Boards*, (2006), 143 Cal.App.4th 985.)

52. Following public notice in accordance with State and federal laws and regulations, the State Water Board, in a public hearing on August 8, 2012, heard and considered all comments. The State Water Board has prepared written responses to all significant comments.

53. The State Water Board has considered the costs of complying with this Order and whether the required BMPs meet the minimum MEP Standard required by federal law. Further discussion of cost of compliance is included in the Fact Sheet.

54. This Order shall serve and become effective as an NPDES permit and the Permitees shall comply with all its requirements pursuant to the timeframes identified within the permit.

IT IS HEREBY ORDERED that operators of Small MS4s subject to this Order shall comply with the following:

A. APPLICATION REQUIREMENTS FOR ALL SMALL MS4 PERMITTEES

Any Small MS4s designated under this Order that chooses to apply for an individual permit or request to join the permit of a Phase I Permittee must notify the Regional Water Board of its intent to do so by July 1, 2013. Census Designated Places (CDPs) listed on Attachment A that are located within an existing NPDES permit area are not required to file for separate coverage and pay separate fees.

A.1. Small MS4 Permittees (Except for Department of Defense and Department of Corrections and Rehabilitation Permittees)

a. New Permittees shall electronically file an NOI via SMARTS and mail the appropriate fee to the State Water Board by July 1, 2013. Renewal Permittees shall electronically file an NOI via SMARTS and pay the appropriate application fee to the State Water Board. Any Renewal Permittees with paid 2013 application fee invoices shall receive a prorated refund. If the Permittee is designated as a Regulated Small MS4 by a Regional Water Board after adoption of this Order, the Permittee shall file the NOI and mail the appropriate fee within six months of the date of designation.

b. General Permit coverage will be in effect upon receipt of the following:
   1) NOI via SMARTS
   2) Appropriate Fee (in accordance with the most recent fee schedule[7])
   3) Permit boundary map delineating permit jurisdiction: At a minimum the map shall include the following:

      (a) Phase II MS4 permit boundary based on 2010 Census data. For cities, the permit area boundary is the city boundary. For Counties, permit boundaries must include urbanized areas and places identified in Attachment A located within their jurisdictions. The boundaries must be proposed in the permit boundary map and may be developed in conjunction with the applicable Regional Water Board
      (b) City/County Boundaries
      (c) Main Arterial Streets
      (d) Highways
      (e) Waterways
      (f) Phase I MS4 Permit Boundary (if applicable)

   4) Guidance document: The document shall at least include the following:

      New Permittees:
      (a) Overall program planning
      (b) Identifification of all permit requirements and responsible implementing parties

      Renewal Permittees:
      (a) Overall program planning
      (b) Identification of all permit requirements and responsible implementing parties

[7] California Code of Regulations. Title 23. Division 3. Chapter 9 Waste Discharge Reports and Requirements. Article 1 Fees.

(c) Identification and brief description of each BMP and associated measurable goal included in the Permittee's most current SWMP that constitutes a more specific local or tailored level of implementation that may be more protective of water quality than the minimum requirements of this Order.
(d) Identification of whether the Permittee will maintain, reduce, or cease implementation for each more protective, locally-tailored BMP.
(e) For any more protective, locally-tailored BMP and associated measurable goal for which the Renewal Permittee will reduce or cease implementation, the Renewal Permittee shall demonstrate to the Executive Officer of the relevant Regional Water Board that the reduction or cessation is in compliance with this Order and the maximum extent practicable standard, and will not result in increased pollutant discharges. The demonstration by the Permittee will be subject to public comment before any approval by the Executive Officer of reduction or cessation of BMPs In no instance may the Renewal Permittee reduce or cease a BMP if it is required by the minimum standards set by this Order.

The guidance document may be in spreadsheet, tabular or narrative format.

A.2. Department of Defense and Department of Corrections and Rehabilitation Permittees

a. Permittee shall electronically file an NOI via SMARTS and mail the appropriate fee to the State Water Board by July 1, 2013. If the Permittee is designated as a Regulated Small MS4 by a Regional Water Board after adoption of this Order, the Permittee shall file the NOI and mail the appropriate fee within six months of the date of designation.

b. General Permit coverage will be in effect upon receipt of the following:
   1) NOI via SMARTS
   2) Appropriate fee (in accordance with the most recent fee schedule[8])
   3) Permit boundary map as developed by the Permittee

Renewal MS4s must continue implementing their current storm water management programs until submittal of a NOI via SMARTS.

A.3. Waiver Certification

Regulated Small MS4s may seek a waiver from the General Permit requirements if they meet criteria specified in 40 C.F.R. §122.32(c)-(e) or additional criteria specified in A.3.b.(3) below.

In order for a Regional Water Board to waive requirements for a Regulated Small MS4, (1) the Regulated Small MS4 must certify that its discharges do not cause or contribute to, or have the potential to cause or contribute to, a water quality impairment, and (2) the Regulated Small MS4 must meet one of the waiver options in Section b below:

a. Waiver Certification Application Requirements - A Waiver Certification will only be in effect upon completion of the following:

[8] California Code of Regulations. Title 23. Division 3. Chapter 9 Waste Discharge Reports and Requirements. Article 1 Fees.

1) Annual Waiver Certification submitted via SMARTS.
2) Annual Waiver Certification renewal fee of $200 plus any applicable surcharge.
3) Letter via SMARTS from Regional Water Board or its Executive Officer waiving requirements.

Requirements are automatically waived if the Regional Water Board does not respond within six months.

b. Waiver Criteria

(1) Option 1

(a) The jurisdiction served by the system is less than 1,000 people;
(b) The system is not contributing substantially (as defined in Finding 25) to the pollutant loadings of a physically interconnected regulated MS4; and
(c) If the small MS4 discharges any pollutants identified as a cause of impairment of any water body to which it discharges, storm water controls are not needed based on WLAs that are part of a U.S.EPA approved or established TMDL that addresses the pollutant(s) of concern.

(2) Option 2

(a) The jurisdiction served by the system is less than 10,000 people;
(b) The Regional Water Board has evaluated all waters of the U.S. that receive a discharge from the system;
(c) The Regional Water Board has determined that storm water BMPs are not needed based on WLAs that are part of a U.S. EPA approved or established TMDL that addresses the pollutant(s) of concern or an equivalent analysis; and
(d) The Regional Water Board has determined that future discharges from the Regulated Small MS4 do not have the potential to result in exceedances of water quality standards.

(3) Option 3 (applicable to Small MS4s outside an Urbanized Area only)

Small Disadvantaged Community – The Regulated Small MS4 certifies that it is a community with a population of 20,000 or less with an annual median household income (MHI) that is less than 80 percent of the statewide annual MHI. (Wat. Code, § 79505.5 , subd.(a)).

If the Waiver Certification Application Requirements or conditions of any waiver option are not met by the Regulated Small MS4, then the Regulated Small MS4 must submit a NOI via SMARTS and appropriate fee for coverage under this General Permit or apply for an individual NPDES permit.

The State Water Board or a Regional Water Board can, at any time, require a previously waived Regulated Small MS4 to comply with this General Permit or an individual NPDES permit if circumstances change so that the conditions of the waiver are no longer met. Changed circumstances can also allow a Regulated Small MS4 to request a waiver at any time.

B. DISCHARGE PROHIBITIONS

1. Discharges of waste from the MS4 that are prohibited by Statewide Water Quality Control Plans or applicable Regional Water Quality Control Plans (Basin Plans) are prohibited.

2. Discharges of storm water from the MS4 to waters of the U.S. in a manner causing or threatening to cause a condition of pollution or nuisance as defined in Water Code § 13050 are prohibited.

3. Discharges through the MS4 of material other than storm water to waters of the U.S. shall be effectively prohibited, except as allowed under this Provision or as otherwise authorized by a separate NPDES permit. The following non-storm water discharges are not prohibited provided any pollutant discharges are identified and appropriate control measures to minimize the impacts of such discharges, are developed and implemented under the Permittee's storm water program. This provision does not obviate the need to obtain any other appropriate permits for such discharges.

    a. water line flushing;
    b. individual residential car washing;
    c. diverted stream flows;
    d. rising ground waters;
    e. uncontaminated ground water infiltration (as defined at 40 C.F.R. §35.2005(20)) to separate storm sewers;
    f. uncontaminated pumped ground water;
    g. discharges from potable water sources;
    h. foundation drains;
    i. air conditioning condensation;
    j. springs;
    k. water from crawl space pumps;
    l. footing drains;
    m. flows from riparian habitats and wetlands;
    n. dechlorinated swimming pool discharges; and
    o. incidental runoff from landscaped areas(as defined and in accordance with Section B.4 of this Order).

    Discharges or flows from fire-fighting activities are excluded from the effective prohibition against non-storm water and need only be addressed where they are identified as significant sources of pollutants to waters of the U.S.

    If a Permittee or a Regional Water Board Executive Officer determines that any individual or class of non-storm water discharge(s) listed above may be a significant source of pollutants to waters of the U.S. or physically interconnected MS4, or poses a threat to water quality standards (beneficial uses), the Regional Water Board Executive Officer may require the appropriate Permittee to monitor and submit a report and to implement BMPs on the discharge.

4. Discharges in excess of an amount deemed to be incidental runoff shall be controlled. Regulated Small MS4s shall require parties responsible for such to implement Sections B.4.a-d below. Incidental runoff is defined as unintended amounts (volume) of runoff,

such as unintended, minimal over-spray from sprinklers that escapes the area of intended use. Water leaving an intended use area is not considered incidental if it is part of the facility design, if it is due to excessive application, if it is due to intentional overflow or application, or if it is due to negligence.

Parties responsible for controlling runoff in excess of incidental runoff shall:

a. Detect leaks (for example, from broken sprinkler heads) and correct the leaks within 72 hours of learning of the leak;

b. Properly design and aim sprinkler heads;

c. Not irrigate during precipitation events; and

d. Manage pond containing recycled water such that no discharge occurs unless the discharge is a result of a 25-year, 24-hour storm event or greater, and the appropriate Regional Water Board is notified by email no later than 24 hours after the discharge. The notification is to include identifying information, including the Permittee's name and permit identification number.

Non-storm water runoff discharge that is not incidental is prohibited, unless otherwise specified in Section B.3 above.

Incidental runoff may be regulated by waste discharge requirements or, where necessary, waste discharge requirements that serve as a NPDES permit, including MS4 permits.

5. Discharge to Areas of Special Biological Significance (ASBS) is prohibited except in compliance with the ASBS Special Protection Provisions in Attachment C. Regulated Small MS4s that discharge to an ASBS are listed in Attachment D and are subject to the ASBS Special Protection Provisions.

C. EFFLUENT LIMITATIONS

1. Permittees shall implement controls as required by this Order to reduce the discharge of pollutants from their MS4s to waters of the U. S. to the MEP. Permittees shall additionally reduce the discharge of pollutants (1) to achieve TMDL waste load allocations (WLAs) established for discharges by the MS4s and (2) to comply with the Special Protections for discharges to ASBS.

2. Storm water discharges regulated by this Order shall not contain a hazardous substance in amounts equal to or in excess of a reportable quantity listed in 40 C.F.R. Part 117 or 40 C.F.R. Part 302.

D. RECEIVING WATER LIMITATIONS

Discharges shall not cause or contribute to an exceedance of water quality standards contained in a Statewide Water Quality Control Plan, the California Toxics Rule (CTR), or in the applicable Regional Water Board Basin Plan.

The Permittee shall comply with Receiving Water Limitations through timely implementation of control measures/BMPs and other actions to reduce pollutants in the discharges and other requirements of this Order including any modifications. The storm water program shall be designed to achieve compliance with Receiving Water Limitations. If exceedance(s) of water quality objectives or water quality standards persist notwithstanding implementation of other storm water program requirements of this Order, the Permittee shall assure compliance with Receiving Water Limitations by complying with the following procedure:

1. Upon a determination by either the Permittee or the Regional Water Board that MS4 discharges are causing or contributing to an exceedance of an applicable water quality standard, the Permittee shall promptly notify and thereafter submit a report to the Regional Water Board that describes BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of water quality standards. The report shall include an implementation schedule. The Regional Board may require modifications to the report;

2. Submit any modifications to the report required by the Regional Water Board within 30 days of notification;

3. Implement the actions specified in the report in accordance with the approved schedule;

4. So long as the Permittee has complied with the procedure set forth above and is implementing the actions, the Permittee does not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the State Water Board or the Regional Water Board to develop additional BMPs.

E. PROVISIONS FOR ALL TRADITIONAL SMALL MS4 PERMITTEES

E.1. RENEWAL TRADITIONAL SMALL MS4 PERMITTEES

All Renewal Traditional Small MS4s Permittees shall comply with this Section. Where the requirements of a certain subsection provide a compliance date that is past the effective date of this Order, the Renewal Traditional Small MS4 shall implement its existing program until that date.

E.2. NEW TRADITIONAL SMALL MS4 PERMITTEES

New Traditional Small MS4s shall comply with this Section.

E.3. NON-TRADITIONAL SMALL MS4S PERMITTEES

E.3.a. All Renewal Non-Traditional Small MS4 Permittees shall comply with Section F of this Order. Where the requirements of a certain subsection provide a compliance date that is past the effective date of this Order, the Renewal Non-Traditional Small MS4 shall implement its existing program until that date.

E.3.b. New Non-Traditional Small MS4s Permittees shall comply with Section F of this Order.

E.4. SMALL MS4 ASBS PERMITTEES

Both Traditional and Non-traditional Small MS4s Permittees that discharge to ASBS as listed on Attachment D shall comply with Attachment C in addition to all other applicable provisions of this Order.

E.5. SEPARATE IMPLEMENTING ENTITY (SIE)

Permittees, both Traditional and Non-traditional Small MS4s, may rely on a SIE to satisfy one or more of the permit obligations, if the SIE can appropriately and adequately address the storm water issues of the Permittee. The SIE must agree to implement the BMPs, or components thereof, to achieve compliance with this Order. If the SIE fails to implement the BMPs, the Permittee remains responsible for compliance with this Order.

E.6. PROGRAM MANAGEMENT ELEMENT

To effectively implement a coordinated storm water program, the Permittee shall have an overarching Program Management element in its storm water management program. The Program Management element shall include the following:

E.6.a. Legal Authority

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall review and revise relevant ordinances or other regulatory mechanisms, or adopt any new ordinances or other regulatory mechanisms, to obtain adequate legal authority, to the extent allowable under state or local law, to control pollutant discharges into and from, as applicable, its MS4, and to meet the requirements of this Order.

(ii) **Implementation Level** –At a minimum, the Permittee shall have adequate legal authority to:

(a) Effectively prohibit non-storm water discharges through the MS4. Exceptions to this prohibition are NPDES-permitted discharges of non-storm water and non-storm water discharges in B.3 that are considered non-significant contributors of pollutants. Where the non-storm water discharge is to a segment of an MS4 that discharges directly to an ASBS, exceptions to the non-storm water prohibition are specified in Attachment C.

(b) Detect and eliminate illicit discharges and illegal connections to the MS4. Illicit connections include pipes, drains, open channels, or other conveyances that have the potential to allow an illicit discharge to enter the MS4. Illicit discharges include all non-storm water discharges not otherwise authorized in this Order, including discharges from organized car washes, mobile cleaning and pressure wash operations,

(c) Respond to the discharge of spills, and prohibit dumping or disposal of materials other than storm water into the MS4.

(d) Require parties responsible for runoff in excess of incidental runoff to implement Discharge Prohibition B.4.a-e.

(e) Require operators of construction sites, new or redeveloped land; and industrial and commercial facilities to minimize the discharge of pollutants to the MS4 through the installation, implementation, or maintenance of BMPs consistent with the California Storm Water Quality Association (CASQA) Best Management Practice Handbooks or equivalent.

(f) Require information deemed necessary to assess compliance with this Order. The Permittee shall only require information in compliance with the Homeland Security Act or any other federal law that concerns security in the United States. The Permittee shall also have the authority to review designs and proposals for new development and redevelopment to determine whether adequate BMPs will be installed, implemented, and maintained during construction and after final stabilization (post-construction).

(g) Enter private property for the purpose of inspecting, at reasonable times, any facilities, equipment, practices, or operations for active or potential storm water discharges, or non-compliance with local ordinances/standards or requirements in this Order, as consistent with any applicable state and federal laws.

(h) Require that dischargers promptly cease and desist discharging and/or cleanup and abate a discharge, including the ability to:

1) Effectively require the discharger to abate and clean up their discharge, spill, or pollutant release within 72 hours of notification; high risk spill should be cleaned up as soon as possible.

2) Require abatement within 30 days of notification, for uncontrolled sources of pollutants that could pose an environmental threat;

3) Perform the clean-up and abatement work and bill the responsible party, if necessary;

4) Provide the option to order the cessation of activities until such problems are adequately addressed if a situation persists where pollutant-causing sources or activities are not abated;

5) Require a new timeframe and notify the appropriate Regional Water Board when all parties agree that clean-up activities cannot be completed within the original timeframe and notify the appropriate Regional Water Board in writing within five business days of the determination that the timeframe requires revision.

(i) When warranted, have the ability to:

1) Levy citations or administrative fines against responsible parties either immediately at the site, or within a few days.

2) Require recovery and remediation costs from responsible parties.

(j) Impose more substantial civil or criminal sanctions (including referral to a city or district attorney) and escalate corrective response, consistent with its Enforcement Response Plan developed pursuant to Section E.6.c., for persistent non-compliance, repeat or escalating violations, or incidents of major environmental harm.

E.6.b. Certification

(i) **Task Description –** Within the second year of the effective date of the permit, the Permittee shall certify by its Principal Executive Officer, Ranking Elected Official, or Duly Authorized Representative as described in 40 Code of Federal Regulations section 122.22(b) that the Permittee has and will maintain full legal authority to implement and enforce each of the requirements contained in this Order.

(ii) **Implementation Level** – The Permittee's certification statement shall include the following:

(a) Identification of all departments within the Permittee's jurisdiction that conduct storm water-related activities and their roles and responsibilities under this Order.

(b) Citation of storm water runoff related ordinances, identification of the topics each ordinance addresses;

(c) Identification of the local administrative and legal procedures and ordinances available to mandate compliance with storm water-related ordinances and therefore with the conditions of this Order.

(d) A description of how storm water related-ordinances are reviewed and implemented.

(e) A statement that the municipality will implement enforcement actions consistent with its Enforcement Response Plan developed pursuant to Section E.6.c.

(iii) **Reporting** – All Permittees shall submit in the second year online Annual Report, a statement signed by an authorized signatory certifying the Permittee has adequate legal authority to comply with all Order requirements.

E.6.c. Enforcement Measures and Tracking

(i) **Task Description** – Within the third year of the effective date of the permit, the Permittee shall develop and implement an Enforcement Response Plan. The Enforcement Response Plan shall contain enforcement procedures and actions and identify the Permittee's responses to violations and describe how the Permittee will address repeat and continuing violations by implementing progressively stricter responses as needed to achieve compliance.

(ii) **Implementation Level -** The Enforcement Response Plan shall describe how the Permittee will use each of the following types of enforcement responses based on the type of violation:

(a) Verbal Warnings – Verbal warnings are primarily consultative in nature. At a minimum, verbal warnings shall specify the nature of the violation and required corrective action.

(b) Written Notices – Written notices shall include nature of the violation and the required corrective action, with deadlines for taking such action.

(c) Escalated Enforcement Measures – The Permittee shall establish legal authority to employ any combination of the enforcement actions below (or their functional equivalent), and to escalate enforcement responses where necessary to correct persistent non-compliance, repeat or escalating violations, or incidents of major environmental harm:

1) Citations (with Fines) – The Enforcement Response Plan shall describe when the Permittee will assess monetary fines, which may include civil and administrative penalties.

2) Stop Work Orders – The Enforcement Response Plan shall describe when the Permittee will issue stop work orders that require construction activities to be halted, except for those activities directed at cleaning up, abating discharge, and installing appropriate BMPs.

3) Withholding of Plan Approvals or Other Authorizations – Where a facility is in non-compliance, the Enforcement Response Plan shall describe how the Permittee's own approval or authorization processes that affect the facility's ability to discharge to the MS4 can be used to abate the violation.

4) Additional Measures – The Enforcement Response Plan may also describe other escalated measures the Permittee has under its local legal authorities. For example, the Permittee may need to improve erosion control measures and collect the funds to pay for work and materials from the responsible party by either collecting against the project's bond or directly billing the responsible party.

(d) NPDES Permit Referrals–For those construction projects or industrial facilities subject to the State's Construction General Permit (CGP) or Industrial General Permit (IGP), the Permittee shall:

1) Refer non-filers (i.e., those facilities that cannot demonstrate that they obtained permit coverage) to the appropriate Regional Water Board within 30 days of making that determination, or file a complaint on the State Water Board's website: http://www.dtsc.ca.gov/database/CalEPA_Complaint/index.cfm. In making such referrals, at a minimum include the following documentation:

a) Construction project or industrial facility location.

b) Name of owner or operator.

c) Estimated construction project size or type of industrial activity (including the Standard Industrial or the North American Industry Classification, if known).

d) Records of communication with the owner or operator regarding filing requirements.

2) Refer ongoing violations to the appropriate Regional Water Board provided that the Permittee has made a good faith effort of progressive enforcement to achieve compliance with its own ordinances. At a minimum, the Permittee's good faith effort shall include documentation

of two follow-up inspections and two warning letters or notices of violation. In making such referrals, the Permittee shall include, at a minimum, the following information:

a) Construction project or industrial facility location

b) Name of owner or operator

c) Estimated construction project size or type of industrial activity (including Standard Industrial Classification or North American Industry Classification System if known)

d) Records of communication with the owner or operator regarding the violation, including at least two follow-up inspections, two warning letters or notices of violation, and any response from the owner or operator

e) Enforcement Tracking –Track instances of non-compliance via hard-copy files or electronically. The enforcement tracking documentation shall include, at a minimum, the following:

(1) Name of owner/operator

(2) Location of construction project or industrial facility

(3) Description of violation

(4) Required schedule for returning to compliance

(5) Description of enforcement response used, including escalated responses if repeat violations occur or violations are not resolved within the time specified in the enforcement action.

(6) Accompanying documentation of enforcement response (e.g., notices of noncompliance, notices of violations, etc.)

(7) Any referrals to different departments or agencies

f) Recidivism Reduction – The Permittee shall identify chronic violators of any provision of this Order or of any related local ordinance or regulation and reduce the rate of noncompliance recidivism. The Permittee shall develop incentives, disincentives, or increase inspection frequency at the operator's sites to prevent chronic violations.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.7. EDUCATION AND OUTREACH PROGRAM

Traditional Small MS4 Permittees may be required to implement Community-Based Social Marketing (CBSM) requirements as detailed in Attachment E upon determination by a Regional Board Executive Officer. The Regional Board Executive Officer shall notify Permittees within

three months of the permit adoption date of their determination to require CBSM.[9] The notification shall include a statement of reasons why the Executive Officer finds that implementation of CBSM is appropriate. If the Permittee disagrees with the Executive Officer determination, the Permittee may bring the dispute to the State Water Board Executive Director or his designee as specified under the Dispute Resolution provision of this Order.

E.7.a. Public Education and Outreach

Within the first year of the effective date of the permit, all Permittees shall comply with the requirements in this Section by selecting one or more of the following Public Education and Outreach options:

1) Contributing to a countywide storm water program, as determined appropriate by the Permittee members, so that the countywide storm water program conducts outreach and education on behalf of its members; or
2) Contributing to a regional outreach and education collaborative effort (a regional outreach and education collaborative effort occurs when all or a majority of the Permittees collaborate to conduct regional outreach and education. Regional outreach and education collaboration includes Permittees defining a uniform and consistent message, deciding how best to communicate the message, and how to facilitate behavioral changes, then collaboratively apply what is learned through local jurisdiction groups, pooling resources and skills.); or
3) Fulfilling outreach and education requirements within their jurisdictional boundaries on their own; or
4) A combination of the previous options, so that all requirements are fulfilled.

Reporting – By the first year Annual Report, the Permittee shall submit information indicating which Public Education and Outreach option(s) it will use to comply with this Section. For each option involving a contribution to a countywide storm water program or regional outreach and education collaborative effort, the Permittee shall complete and have available in the first year Annual Report documentation, such as a written agreement, letter or similar document, which confirms the collaboration with other MS4s.

(i)**Task Description** – Within the second year of the effective date of the permit, the Permittee shall develop and implement a comprehensive storm water public education and outreach program. The public education and outreach program shall be designed to reduce pollutant discharges in storm water runoff and non-storm water discharges to the MS4 through increased storm water knowledge and awareness in target communities. The Public Education and Outreach Program shall be designed to measurably increase the knowledge and awareness of targeted audience regarding the municipal storm drain system, impacts of urban runoff and non-storm water discharges on receiving waters, and potential BMP solutions for the target audiences, thereby reducing pollutant releases to the MS4 and the environment.

[9] Getting in Step, A Guide to, Conducting Watershed Outreach Campaigns, 3rd Edition, November 2010, EPA 841-B-10-002, USEPA, Office of Water.

(ii) **Implementation Level** –The Permittee shall, at a minimum:

(a) Develop and implement a public education strategy that establishes education tasks based on water quality problems, target audiences, and anticipated task effectiveness. The strategy must include identification of who is responsible for implementing specific tasks and a schedule for task implementation. The strategy must demonstrate how specific high priority storm water quality issues in the community or local pollutants of concern are addressed.

(b) Implement surveys at least twice during the permit term to gauge the level of awareness in target audiences and effectiveness of education tasks.

(c) Develop and convey a specific storm water message that focuses on the following:
1) Local pollutants of concern
2) Target audience
3) Regional water quality issues

(d) Develop and disseminate appropriate educational materials to target audiences and translate into applicable languages when appropriate (e.g. the materials can utilize various media such as printed materials, billboard and mass transit advertisements, signage at select locations, stenciling at storm drain inlets, radio advertisements, television advertisements, and websites);
(e) Utilize public input (e.g., the opportunity for public comment, or public meetings) in the development of the program;
(f) Distribute the educational materials, using whichever methods and procedures determined appropriate during development of the public education strategy;
(g) Convey messages to explain the benefits of water-efficient and storm water-friendly landscaping[10], using existing information if available;
(h) Develop and convey messages specific to reducing illicit discharges with information about how the public can report incidents to the appropriate authorities. The Permittee must promote, publicize, and facilitate public reporting of illicit discharges or water quality impacts associated with discharges into or from MS4s through a central contact point, including phone numbers for complaints and spill reporting, and publicize to both internal Permittee staff and the public. If 911 is selected, the Permittee must also create, maintain, and publicize a staffed, nonemergency phone number with voicemail, which is checked daily;
(i) Develop and convey messages specific to proper application of pesticides, herbicides, and fertilizers;
(j) Within the Permittee's jurisdiction, provide independent, parochial, and public schools with materials to effectively educate school –age children about storm water runoff and how they can help protect water quality habitat in their local watershed (s). The Permittee is encouraged to use environmental and place-based, experiential learning materials that are integrated into school curricula and school facility management[11]. In the case that an environmental and place-

[10] For example, Surfrider's Ocean Friendly Garden Program (http://www.surfrider.org/programs/entry/ocean-friendly-gardens) and the Water Efficient Landscape Ordinance (WELO)
[11] For example, Splash (*www.sacsplash.org/*),Effie Yeaw Nature Center (www.sacnature.net) or Yolo Basin (www. yolobasin.org)

based, experiential learning local program does not exist, the Permittee may use California's Education and Environment Initiative Curriculum[12] or equivalent.

(k) Develop (or coordinate with existing, effective programs) and convey messages specific to reducing discharges from organized car washes, mobile cleaning and pressure washing operations, and landscape irrigation.

(l) Conduct storm water-friendly education for organized car wash participants and provide information pertaining to car wash discharge reduction. The Permittee may use the Sacramento Stormwater Quality Partnership's River Friendly Carwash Program[13], or equivalent, for guidance.

(m) Develop and convey messages specific to mobile cleaning and pressure wash businesses.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.7.b. Staff and Site Operator Training and Education

E.7.b.1. Illicit Discharge Detection and Elimination Training

(i) **Task Description** – Within the third year of the effective date of the permit, the Permittee shall develop and implement a training program for all Permittee staff who, as part of their normal job responsibilities, may be notified of, come into contact with, or otherwise observe an illicit discharge or illegal connection to the storm drain system.

(ii) **Implementation Level** – The training program shall include at a minimum:

(a) Identification of an illicit discharge or illegal connection.

(b) Proper procedures for reporting and responding to the illicit discharge or illegal connection.

(c) Follow-up training shall be provided as needed to address changes in procedures, techniques, or staffing.

(d) An annual assessment of their trained staff's knowledge of illicit discharge response and refresher training as needed.

(e) Training for new staff who, as part of their normal job responsibilities may be notified of, come into contact with, or otherwise observe an illicit discharge or illegal connection shall be trained no later than six months after the start of employment.

(f) Contact information, including the procedure for reporting an illicit discharge, shall be included in each of the Permittee's fleet vehicles that are used by field staff.

(g) Focused education on identified illicit discharges and associated illicit discharge locations.

[12] http://www.californiaeei.org/
[13] http://www.beriverfriendly.net/riverfriendlycarwashing/

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.7.b.2. Construction Outreach and Education

(a) Permittee Staff Training

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall ensure that all staff implementing the construction site storm water runoff control program are adequately trained.

(ii) **Implementation Level** – The Permittee may conduct in-house training or contract with consultants. Training shall be provided to the following staff positions of the MS4:

(a) Plan Reviewers and Permitting Staff - The Permittee shall ensure plan reviewers and permitting staff are qualified individuals, knowledgeable in the technical review of local erosion and sediment control plans, (including proper control measure selection, installation, implementation, and maintenance, as well as administrative requirements such as inspection reporting/tracking and the use of the Permittee's enforcement responses), and are certified pursuant to a State Water Board sponsored program as a Qualified Storm Water Pollution Prevention Plan (SWPPP) Developer (QSD), or a designated person on staff possesses the QSD credential.

(b) Erosion Sediment Control/Storm Water Inspectors - The Permittee shall ensure inspectors are qualified individuals, knowledgeable in inspection procedures, and are certified pursuant to a State Water Board sponsored program as either (1) a Qualified SWPPP Developer (QSD); (2) a Qualified SWPPP Practitioner (QSP); or (3) a designated person on staff possesses each credential (QSD to supervise plan review, QSP to supervise inspection operations).

(c) Third-Party Plan Reviewers, Permitting Staff, and Inspectors - If the Permittee utilizes outside parties to review plans and/or conduct inspections, the Permittee shall ensure these staff are trained.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

(b) Construction Site Operator Education

(i) **Task Description** – Within the third year of the effective date of the permit, the Permittee shall develop and distribute educational materials to construction site operators.

(ii) **Implementation Level** – The Permittee shall do the following:

(a) Each year, provide information on training opportunities for construction operators on BMP selection, installation, implementation, and maintenance as well as overall program compliance.

(b) Develop or utilize existing outreach tools (i.e. brochures, posters, etc.) aimed at educating construction operators on appropriate selection, installation, implementation, and maintenance of storm water BMPs, as well as overall program compliance.

(c) Distribute appropriate outreach materials to all construction operators who will be disturbing land within the MS4 boundary. The Permittee's contact information and website shall be included in these materials.

(d) Update the existing storm water website, as necessary, to include information on appropriate selection, installation, implementation, and maintenance of BMPs.

(iii) **Reporting –** The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element . The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.7.b.3. Pollution Prevention and Good Housekeeping Staff Training

The Permittee shall train employees on how to incorporate pollution prevention/good housekeeping techniques into Permittee operations.

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall develop a biennial employee training program for appropriate employees involved in implementing pollution prevention and good housekeeping practices as specified in Section E.11. Pollution Prevention/Good Housekeeping for Permittee Operations of this Order. The Permittee shall determine the need for interim training during alternate years when training is not conducted, through an evaluation of employee Pollution Prevention/Good Housekeeping knowledge. All new hires whose jobs include implementation of pollution prevention and good housekeeping practices must receive this training within the first year of their hire date.

(ii) **Implementation Level** – The training program shall include the following:

(a) Biennial training for all employees implementing this program element. This biennual training shall include a general storm water education component, any new technologies, operations, or responsibilities that arise during the year, and the permit requirements that apply to the staff being trained. Employees shall

receive clear guidance on appropriate storm water BMPs to use at municipal facilities and during typical O&M activities.

(b) A biennual assessment of trained staff's knowledge of pollution prevention and good housekeeping and shall revise the training as needed.

(c) A requirement that any contractors hired by the Permittee to perform O&M activities shall be contractually required to comply with all of the storm water BMPs, good housekeeping practices, and standard operating procedures described above.

(d) The Permittee shall provide oversight of contractor activities to ensure that contractors are using appropriate BMPs, good housekeeping practices and following standard operating procedures.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.8. PUBLIC INVOLVEMENT AND PARTICIPATION PROGRAM

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall involve the public in the development and implementation of activities related to the program. The public participation and involvement program shall encourage volunteerism, public comment and input on policy, and activism in the community. The Permittee shall also be involved in their Integrated Regional Water Management Plan (IRWMP) or other watershed-level planning effort, if applicable.

(ii) **Implementation Level** – At a minimum, the Permittee shall:

(a) Develop a public involvement and participation strategy that establishes who is responsible for specific tasks and goals.

(b) Consider development of a citizen advisory group (either a stand-alone group or utilize an existing group or process). The advisory group may consist of a balanced representation of all affected parties, including residents, business owners, and environmental organizations in the MS4 service area and/or affected watershed. The Permittee may invite the citizen advisory group to participate in the development and implementation of all parts of the community's storm water program.

(c) Create opportunities for citizens to participate in the implementation of BMPs through sponsoring activities (e.g., stream/beach/lake clean-ups, storm drain stenciling, volunteer monitoring and educational activities).

(d) Ensure the public can easily find information about the Permittee's storm water program.

(e) Actively engage in the Permittee's IRWMP or other watershed-level planning effort.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.9. ILLICIT DISCHARGE DETECTION AND ELIMINATION

The Permittee shall develop an Illicit Discharge Detection and Elimination program to detect, investigate, and eliminate illicit discharges, including illegal dumping, into its system, to the extent allowable under law.[14] The Permittee may utilize the CWP's guide on Illicit Discharge Detection and Elimination as guidance.

E.9.a. Outfall Mapping

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall create and maintain an up-to-date and accurate outfall map[15]. The map may be in hard copy and/or electronic form or within a geographic information system (GIS) the development of the outfall map shall include a visual outfall inventory involving a site visit to each outfall. Renewal Permittees that have an existing up-to-date outfall map that includes the minimum requirements specified in Section E.9.a.(ii)(a-e) are not required to re-create the outfall map. This does not exempt Renewal Permittees with an existing outfall map from conducting the field sampling specified in Section E.9.c.

(ii) **Implementation Level** - The outfall map shall at a minimum show:

(a) The location of all outfalls[16] that are operated by the Permittee within the urbanized area, drainage areas, and land use(s) contributing to those outfalls that are operated by the Permittee, and that discharge within the Permittee's jurisdiction to a receiving water. Each mapped outfall shall be located using coordinates obtained from a global positioning system (GPS) and given an individual alphanumeric identifier, which shall be noted on the map. Photographs or an electronic database shall be utilized to provide baseline information and track operation and maintenance needs over time.

(b) The location (and name, where known to the Permittee) of all water bodies receiving direct discharges from those outfall pipes.

(c) Priority areas, including, but not limited to the following:

[14] The Permittee shall use the Center for Watershed Protection's guide on Illicit Discharge Detection and Elimination (IDDE): A Guidance Manual for Program Development and Technical Assistance (available at www.cwp.org) or equivalent when developing an IDDE program. Guidance can also be found at: http://cfpub.epa.gov/npdes/stormwater/idde.cfm.

[15] The Permittee may utilize existing forms such as the CWP Outfall Reconnaissance Inventory/Sample Collection Field Sheet while conducting the mapping inventory and Field Sampling as specified below, in Section E.9.c.(http://cfpub.epa.gov/npdes/stormwater/idde.cfm).

[16] Submerged outfalls or other outfalls that may pose a threat to public safety and/or that are inaccessible are not required to be inventoried.

1) Areas with older infrastructure that are more likely to have illegal connections and a history of sewer overflows or cross-connections
2) Industrial, commercial, or mixed use areas;
3) Areas with a history of past illicit discharges;
4) Areas with a history of illegal dumping;
5) Areas with onsite sewage disposal systems;
6) Areas upstream of sensitive water bodies;
7) Areas that drain to outfalls greater than 36 inches that directly discharge to the ocean; and
8) Other areas that are likely to have illicit discharges

The priority area list shall be updated annually.

(d) Field sampling stations

(e) The permit boundary

Submerged outfalls or other outfalls that may pose a threat to public safety and/or that are inaccessible are not required to be inventoried.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.9.b. Illicit Discharge Source/Facility Inventory

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall maintain an inventory of all industrial/commercial facilities/sources within the Permittee's jurisdiction (regardless of ownership) that could discharge pollutants in storm water to the MS4. The Permittee shall utilize the inventory to identify facilities for inspections of potential illicit discharges.

(ii) **Implementation Level** - The inventory shall include the following:

(a) Minimum information for each industrial facility/source:

- Facility name;
- Address;
- Nature of business or activity;
- Physical location (decimal latitude-longitude) of storm drain receiving discharge;
- Name of receiving water and if the facility/source is tributary to a Clean Water Act Section 303(d) listed water body segment or water body segment subject to a TMDL;
- Incorporation of facility information into GIS is optional.

(b) At a minimum, the following industrial and commercial facilities/sources shall be included in the inventory.

- Vehicle salvage yards
- Metal and other recycled materials collection facilities
- Waste transfer facilities
- Vehicle mechanical repair, maintenance or cleaning
- Building trade central facilities or yards
- Corporation yards
- Landscape nurseries and greenhouses
- Building material retailers and storage
- Plastic manufacturers
- Other facilities designated by the Permittees or Regional Water Boards to have reasonable potential to contribute to pollution of storm water runoff

(c) The Permittee shall determine if the facilities that are required to be covered under the Statewide Industrial General Permit have done so. Upon discovering any facilities requiring permit coverage but are not yet permitted, the Permittee shall notify the appropriate Regional Water Board, and include copies of the notification in the online Annual Report.

(d) The Permittee shall update the inventory annually. The update shall be accomplished through collection of new information obtained during inspections and contacts with commercial and industrial facility operators and owners, or through other readily available intra-agency informational databases (e.g., business licenses, pretreatment permits, sanitary sewer hook-up permits, and SMARTS database.

(e) The Permittee shall develop and implement procedures to proactively identify illicit discharges originating from priority areas identified in Section E.9.a.(ii).(c). The Permittee shall implement the procedures to assess priority areas for the presence of illicit discharges at least once over the length of the permit term. The procedures shall include field observations, field screening, inspections, and any other appropriate and effective survey methods. Alternatively, Permittees may establish a self--certification program where Permittees require reports from authorized parties demonstrating the prevention and elimination of illicit discharges at their facilities in priority areas at least once over the length of the permit term.

(iii) **Reporting –** The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.9.c. Field Sampling to Detect Illicit Discharges

(i) **Task Description** – Within the second year of the effective date of the permit (e.g. while conducting the outfall inventory under Section E.9.a.), the Permittee shall sample

any outfalls that are flowing or ponding more than 72 hours after the last rain event. The Permittee shall also conduct dry weather sampling (more than 72 hours since the last rain event) of outfalls annually identified as priority areas.

(ii) **Implementation Level** – The Permittee shall:

(a) Conduct monitoring[17] for the following indicator parameters identified in Table 1 to help determine the source of the discharge. Alternatively, the Permittee may select parameters based on local knowledge of pollutants of concern in lieu of sampling for the parameters listed in Table 1. Modifications and associated justifications shall be identified within SMARTS prior to conducting field sampling as specified in Section E.9.c.(i).

Table 1. Indicator Parameters

Indicator Parameters Used to Detect Illicit Discharges					
Parameter	**Discharge Types It Can Detect**				
	Sewage	**Washwater**	**Tap Water**	**Industrial or Commercial Liquid Wastes**	**Laboratory/Analytical Challenges**
Ammonia	●	⦿	○	⦿	Can change into other nitrogen forms as the flow travels to the outfall
Color	⦿	⦿	○	⦿	
Conductivity	⦿	⦿	○	⦿	Ineffective in saline waters
Detergents – Surfactants	●	●	○	⦿	Reagent is a hazardous waste
Fluoride*	○	○	●	⦿	Reagent is a hazardous waste Exception for communities that do not fluoridate their tap water
Hardness	⦿	⦿	⦿	⦿	
pH	○	⦿	○	⦿	
Potassium	⦿	○	○	●	May need to use two separate analytical techniques, depending on the concentration
Turbidity	⦿	⦿	○	⦿	

● Can almost always (>80% of samples) distinguish this discharge from clean flow types (e.g., tap water or natural water). For tap water, can distinguish from natural water.
⦿ Can sometimes (>50% of samples) distinguish this discharge from clean flow types depending on regional characteristics, or can be helpful in combination with another parameter
○ Poor indicator. Cannot reliably detect illicit discharges, or cannot detect tap water
N/A: Data are not available to assess the utility of this parameter for this purpose.
Data sources: Pitt (
*Fluoride is a poor indicator when used as a single parameter, but when combined with additional parameters (such as detergents, ammonia and potassium), it can almost always distinguish between sewage and wash water.

[17] A description of indicator parameter sampling equipment is described in Chapter 12: Indicator Monitoring in the CWP IDDE: Guidance Manual found at: http://www.epa.gov/npdes/pubs/idde_manualwithappendices.pdf. Sampling may be conducted using field test kits.

(b) Verify that indicator parameters, as specified in Table 2. Action Level Concentrations for Indicator Parameters are not exceeded. Alternatively, the Permittee may tailor Table 2 to align with parameters based on local knowledge of pollutants of concern. Modifications and associated justifications shall be identified within SMARTS prior to conducting field sampling as specified in Section E.9.c.(i).

Table 2. Action Level Concentrations for Indicator Parameters

Indicator Parameter	Action Level Concentration
Ammonia	>= 50 mg/L
Color	>= 500 units
Conductivity	>= 2,000 µS/cm
Hardness	<= 10 mg/L as CaCO3 or >= 2,000 mg/L as CaCO3
pH	<= 5 or >=9
Potassium	>= 20 mg/L
Turbidity	>= 1,000 NTU

(c) Conduct follow up investigations per Section E.9.d. if the action level concentrations are exceeded.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.9.d. Illicit Discharge Detection and Elimination Source Investigations and Corrective Actions

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall develop written procedures for conducting investigations into the source of all non-storm water discharges suspected to be illicit discharges, including approaches to requiring such discharges to be eliminated, and procedures to implement corrective actions (e.g., BMPs). These procedures shall be included as part of the Illicit Discharge Detection and Elimination program. The Permittee may leverage existing inspection procedures and personnel to conduct illicit discharge detection and elimination source investigations and corrective actions.

(ii) **Implementation Level -** At a minimum, the Permittee shall conduct an investigation(s) to identify and locate the source of any suspected illicit discharge within 72 hours of becoming aware of the suspected illicit discharge. For investigations that require more than 72 hours, the Permittee shall identify the actions being taken to identify and locate the source of the suspected illicit discharge.

(a) Non-storm water discharges suspected of being sanitary sewage and/or significantly contaminated shall be investigated within 24 hours.

(b) The Permittee shall prioritize investigations of suspected sanitary sewage and/or significantly contaminated discharges over investigations of non-storm water discharges suspected of being cooling water, wash water, or natural flows.

(c) Report immediately the occurrence of any flows believed to be an immediate threat to human health or the environment to local Health Department.

(d) Determine and document through its investigations the source of all non-storm water discharges. If the source of the non-storm water discharge is found to be a discharge authorized under this General Permit, or authorized under another NPDES permit, no further action is required.

(e) Corrective Action to Eliminate Illicit Discharge – Once the source of the illicit discharge has been determined, the Permittee shall immediately notify the responsible party of the problem, and require the responsible party to conduct all necessary corrective actions to eliminate the non-storm water discharge within 72 hours of notification. Upon being notified that the discharge has been eliminated, conduct a follow-up investigation and field screening to verify that the discharge has been eliminated using BMPs or some other corrective action. The Permittee shall document its follow-up investigation. The Permittee may seek recovery and remediation costs from responsible parties or require compensation for the cost of field screening and investigations. Resulting enforcement actions shall follow the program's Enforcement Response Plan as specified in E.6.c.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.9.e. Spill Response Plan

(i) **Task Description** – Within the first year of the effective date of the permit, the Permittee shall develop and implement a spill response plan.

(ii) **Implementation Level** - At a minimum, the spill response plan will incorporate the information from Section E.9.c. and outline the following:

(a) Agency roles and responsibilities (e.g. County Department of Environmental Health, local police department, local fire department, etc.)
(b) The procedures for responding to complaints
(c) How investigations are to be conducted
(d) How clean up is initiated or conducted
(e) How reporting is completed and what information is required

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this

program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.10. CONSTRUCTION SITE STORM WATER RUNOFF CONTROL PROGRAM

The Permittee shall develop, implement, and enforce a program to prevent construction site discharges of pollutants and impacts on beneficial uses of receiving waters. The program shall include the development of an enforceable construction site storm water runoff control ordinance for all projects that disturb less than one acre of soil. The construction site storm water runoff control ordinance shall include, at a minimum, requirements for erosion and sediment controls, soil stabilization, dewatering, source controls, pollution prevention measures and prohibited discharges.

Projects that disturb one acre or more of soil or disturb less than one acre but are part of a larger common plan or development or sale are subject to the CGP in addition to the construction site storm water runoff control ordinance.

E.10.a. Construction Site Inventory

(i) **Task Description -** Within the first year of the effective date of the permit, the Permittee shall maintain an inventory of all projects subject to the local construction site storm water runoff control ordinance within its jurisdiction.

(ii) **Implementation Level** –The Permittee shall maintain an inventory of all construction projects and continuously update as new projects are permitted and projects are completed. The inventory shall address all projects subject to the local construction site storm water runoff control ordinance. For projects subject to the CGP the Permittee may obtain the inventory from the SMARTS database and shall supplement as needed by the Permittee.

The inventory shall contain, at a minimum:
(a) Relevant contact information for each project (e.g., name, address, phone, email, etc. for the owner and contractor);
(b) The basic site information including location, status, size of the project and area of disturbance;
(c) The location of the project with respect to all waterbodies, waterbodies listed as impaired by sediment-related pollutants, and waterbodies listed as impaired for sediment or turbidity under the CWA Section 303(d) and approved by U.S. EPA;
(d) Project threat to water quality;
(e) Current construction phase;
(f) The required inspection frequency per the local construction site storm water runoff control ordinance;
(g) The project start and anticipated completion dates; and
(h) The date the Permittee approved the erosion and sediment control plan in accordance with this Section.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.10.b. Construction Plan Review and Approval Procedures

(i) **Task Description** – Within the first year of the effective date of the permit, the Permittee shall develop procedures to review and approve relevant construction plan documents.

(ii) **Implementation Level** – The review procedures shall meet the following minimum requirements:

(a) Prior to issuing a grading or building permit, the Permittee shall require each operator of a construction activity within its jurisdiction to prepare and submit an erosion and sediment control plan for the Permittee's review and written approval. The Permittee shall not approve any erosion and sediment control plan unless it contains appropriate site-specific construction site BMPs that meet the minimum requirements of the Permittee's construction site storm water runoff control ordinance. If the erosion and sediment control plan is revised, the Permittee shall review and approve those revisions.

(b) Require that the erosion and sediment control plan include the rationale used for selecting BMPs including supporting soil loss calculations, if necessary.

(c) Require that the erosion and sediment control plan list applicable permits directly associated with the grading activity, including, but not limited to the State Water Board's CGP, State Water Board 401 Water Quality Certification, U.S. Army Corps 404 permit, and California Department of Fish and Game 1600 Agreement. Include as a condition of the grading permit that the operator submit evidence to the MS4 that all permits directly associated with the grading activity have been obtained prior to commencing the soil disturbing activities authorized by the grading permit.

(d) Conduct and document review of each erosion and sediment control plan using a checklist or similar process.

(e) The SWPPP developed pursuant to the CGP may substitute for the erosion and sediment control plan for projects where a SWPPP is developed. The Permittee is responsible for reviewing applicable portions of the SWPPP for compliance with the Permittee's construction site storm water runoff control ordinance and this Order.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.10.c. Construction Site Inspection and Enforcement

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall use legal authority to implement procedures for inspecting public and private construction projects and conduct enforcement if necessary. The Permittee may leverage existing inspection procedures and personnel to conduct construction site inspections and enforcement.

(ii) **Implementation Level –** The inspection procedures shall be implemented to verify compliance with the Permittee's construction site storm water control ordinance. At a minimum, inspections must be conducted at priority construction sites (defined below) prior to land disturbance (during the rainy season), during active construction and following active construction. Construction site inspections shall include assessment of compliance with the Permittee's construction site storm water runoff control ordinance, and other applicable ordinances. A Permittee may propose, for Regional Water Board Executive Officer approval, an alternative approach for construction site oversight, provided the Permittee demonstrates the approach will be equally effective at reducing the discharge of pollutants from construction sites to the maximum extent practicable.

Prior to allowing an operator to commence land disturbance during the rainy season, the Permittee must perform an inspection, to ensure all necessary sediment controls are in place. During active construction, the Permittee shall conduct inspections, based on prioritization of construction sites. Active construction inspections shall include at a minimum: inspection of maintenance of BMPs, effectiveness of BMPs installed and verification that pollutants of concern are not discharged into receiving water bodies.

Prioritization criteria shall be based on project threat to water quality. Project threat to water quality includes soil erosion potential, site slope, projects size and type, sensitivity of receiving water bodies, proximity to receiving water bodies, non-storm water discharges, projects more than one acre that are not subject to the CGP (sites that have obtained an Erosivity Waiver) and past record of non-compliance by the operator of the construction site. Inspection frequencies shall be conducted based on the prioritization criteria described above.

At the conclusion of the project, the Permittee must inspect to ensure that all disturbed areas have been stabilized and that all temporary erosion and sediment control measures that are no longer needed have been removed as required by the local construction site storm water control ordinance.

(iii) **Reporting –** The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.11. POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR PERMITTEE OPERATIONS PROGRAM

The Permittee shall develop and implement a program to prevent or reduce the amount of pollutant runoff from Permittee operations. The Permittee shall implement appropriate BMPs for preventing or reducing the amount of storm water pollution generated by Permittee operations.

E.11.a. Inventory of Permittee-Owned and Operated Facilities

(i) **Task Description** - Within the second year of the effective date of the permit, the Permittee shall develop and maintain an inventory of Permittee-owned or operated facilities within their jurisdiction that are a threat to water quality, if applicable.

(ii) **Implementation Level** - The inventory shall include all Permittee-owned or operated facilities within their jurisdiction that are potential significant sources of pollution in storm water, including the following if applicable:

- Airports
- Animal control facilities
- Chemical storage facilities
- Composting facilities
- Equipment storage and maintenance facilities (including landscape-related operations)
- Fuel farms
- Hazardous waste disposal facilities
- Hazardous waste handling and transfer facilities
- Incinerators
- Landfills
- Materials storage yards
- Pesticide storage facilities
- Public buildings, including schools, libraries, police stations, fire stations, Permittee (municipal) buildings, restrooms, and similar buildings (i.e., buildings with a similar potential to be sources of storm water pollution as the examples provided)
- Public parking lots
- Public golf courses
- Public swimming pools
- Public parks
- Public works yards
- Public marinas
- Recycling facilities
- Salt or de-icing storage facilities
- Solid waste handling and transfer facilities
- Transportation hubs (e.g. bus transfer stations)
- Vehicle storage and maintenance areas
- Vehicle fueling facilities
- Other (as directed by appropriate Regional Water Board)

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.11.b. Map of Permittee-Owned or Operated Facilities

(i) **Task Description –** Within the second year of the effective date of the permit, submit a map of the area within the permit boundary and identify where the inventoried Permittee-owned or operated facilities are located.

(ii) **Implementation Level** - The map identifying the location of the inventoried Permittee-owned or operated facilities shall identify the storm water drainage system (e.g., storm water outfalls or other mechanisms in which storm water leaves the site) corresponding to each of the facilities as well as the receiving waters to which these facilities discharge. The map shall also show the facility and the manager of each facility, including contact information.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.11.c. Facility Assessment

(i) **Task Description** – Within the third year of the effective date of the permit, for all the inventoried Permittee-owned or operated facilities, the Permittee shall conduct a comprehensive inspection and assessment of pollutant discharge potential and identification of pollutant hotspots using the Center for Watershed Protection's (CWP) guide on Urban Subwatershed and Site Reconnaissance, or equivalent.[18]

(ii) **Implementation Levels** - Conduct an annual review and assessment of all municipally owned or operated facilities to determine their potential to impact surface waters. The assessment shall include the following:

(a) Identification of pollutant hotspots:

Based on the annual assessment, the Permittee shall identify those facilities that have a high potential to generate storm water and non-storm water pollutants as pollutant hotspots and assign them a high priority. Among the factors to be considered are the type and volume of pollutants stored at the site, the presence of improperly stored materials,

[18] The Permittee shall use the Center for Watershed Protection's Restoration Manual Series guide on Urban Subwatershed and Site Reconnaissance: a User's Manual (available as a free download at www.cwp.org) or equivalent when identifying priority areas. Hotspots are specific operations in a subwatershed that may generate high storm water pollution.

activities that should not be performed outside (e.g., changing automotive fluids, vehicle washing), proximity to water bodies, poor housekeeping practices, and the discharge of pollutant(s) of concern to receiving water(s). Pollutant hotspots shall include, at a minimum, the Permittee's maintenance yards, hazardous waste facilities, fuel storage and/or dispensing locations, airports marinas, and any other facilities at which chemicals or other materials have a high potential to be discharged in storm water.

(b) Documentation of the comprehensive assessment procedures and results:

The Permittee shall document the procedures it uses for conducting the comprehensive assessment along with a copy of any site evaluation checklists used to conduct the comprehensive assessment.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.11.d. Storm Water Pollution Prevention Plans

(i) **Task Description** – Within the fourth year of the effective date of the permit, the Permittee shall develop and implement SWPPPs for pollutant hotspots. If a Permittee has an existing document such as Hazardous Materials Business Plan, Spill Prevention Plan, or other equivalent document the Permittee is not required to develop a SWPPP.

(ii) **Implementation Level** – The Permittee shall implement the following:

(a) The Permittee shall develop and implement a site-specific SWPPP that identifies existing storm water BMPs and a set of storm water BMPs to be installed, implemented, and maintained to minimize the discharge of pollutants to protect water quality. The Permittee may utilize the CWP guide on Urban Subwatershed and Site Reconnaissance, or equivalent, as guidance.

(b) The SWPPP(s) shall be kept on-site at each of the Permittee-owned or operated facilities' offices for which it was completed. The SWPPP shall be updated as necessary.

(c) At a minimum the SWPPP will address the following:

1) Facility specific information (location, owner, address, etc.)
2) Purpose of the document
3) Key staff/contacts at the facility
4) Site map with drainage identified

5) Identification of significant materials that are handled and stored at the facility that may be exposed to storm water
6) Description of potential pollutant sources
7) Facility BMPs
8) Spill control and cleanup – response to spills
9) Inspection schedule
10) Inspection procedures and checklist for inspections conducted to ensure proper selection, implementation, and maintenance of all BMPs

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.11.e. Inspections, Visual Monitoring and Remedial Action

(i) **Task Description** – Within the fifth year of the effective date of the Permit, the Permittee shall conduct regular inspections of Permittee-owned and operated facilities.

(ii) **Implementation Level** – Inspections shall be conducted as follows:

(a) Quarterly visual hotspot inspections – Perform quarterly visual inspections, in accordance with the inspection procedures and inspection checklist developed for each Permittee-owned or operated hotspot, to ensure materials and equipment are clean and orderly; to minimize the potential for pollutant discharge; and to ensure effective selection, implementation, and maintenance of BMPs. The Permittee shall look for evidence of spills and immediately clean them up to prevent contact with precipitation or runoff. The quarterly inspections shall be tracked in a log for every facility, and records kept with the SWPPP (records may be kept electronically). The inspection report shall also include any identified deficiencies and the corrective actions taken to correct the deficiencies.

(b) Annual Hotspot comprehensive inspections – At least once per year, the Permittee shall conduct a comprehensive inspection of each hotspot facility, including all storm water BMPs, in accordance with the facility-specific inspection procedures and inspection checklist. The Permittee shall pay specific attention, without limiting its attention, to: waste storage areas, dumpsters, vehicle and equipment maintenance/fueling areas, material handling areas, and similar potential pollutant-generating areas. The annual inspection results shall be documented and records kept with the SWPPP. The inspection report shall also include any identified deficiencies and the corrective actions taken to correct deficiencies.

(c) Quarterly Hotspot visual observation of storm water and non-storm water discharges – At least once per quarter visually observe discharge locations from hotspot facilities. Where discharges are observed identify any observed

problems (e.g., color, foam, sheen, turbidity) associated with pollutant sources or BMPs shall be remedied as soon as practicable or before the next storm event, whichever is sooner. Visual observations shall be documented, and records kept with the SWPPP. This inspection shall be done in accordance with the developed standard operating procedures. The inspection report shall also include any identified deficiencies and the corrective actions taken to correct the deficiencies.

(d) Non-Hotspot Inspection – At a minimum, inspect each inventoried municipal facility that is not a hotspot, once per permit term.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.11.f. Storm Drain System Assessment and Prioritization

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall develop and implement procedures to assess and prioritize MS4 storm drain system maintenance, including but not limited to, catch basins, pipe and pump infrastructure, above-ground conveyances, including receiving water bodies within the Permittee's urbanized area and detention basins.

If flood conveyance maintenance is undertaken by another entity, the Permittee shall coordinate with the flood conveyance management entity by year three to assess and prioritize maintenance of the MS4 storm drain system.

(ii) **Implementation Level** – The Permittee shall:

Assess/prioritize storm drain system facilities for cleanout – Assign a priority to MS4 storm drain facilities within the Permittee's urbanized areas based on accumulation of sediment, trash and/or debris. In particular, assign high priority to catch basin meeting any of the following criteria:

1) Catch basins known to accumulate a significant amount of sediment, trash, and/or debris;
2) Catch basins collecting large volumes of runoff;
3) Catch basin collecting runoff from area that do not receive regular sweet sweeping;
4) Catch basins collecting runoff from drainage areas with exposed or disturbed soil; or
5) Catch basins that receive citizen complaints/reports.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment

and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.11.g. Maintenance of Storm Drain System

(i) **Task Description** – Within the third year of the effective date of the permit, the Permittee shall begin maintenance of all high priority storm drain systems on an ongoing schedule.

(ii) **Implementation Level** – The Permittee shall begin maintenance of storm drain systems according to the procedures and priorities developed according to this Section. At a minimum the Permittee shall:

(a) Inspect storm drain systems – Based on the priorities assigned above in Section E.11.f.(ii)(a), develop and implement a strategy to inspect storm drain systems within the Permittee's jurisdiction. At a minimum, inspect all high priority catch basins and systems annually.

(b) Clean storm drains – Develop and implement a schedule to clean high priority catch basins and other systems. Cleaning frequencies shall be based on priority areas, with higher priority areas receiving more frequent maintenance.

(c) Labeling catch basins – Ensure that each catch basin in high foot traffic areas includes a legible storm water awareness message (e.g., a label, stencil, marker, or pre-cast message such as “drains to the creek” or “only rain in the drain”). Catch basins with illegible or missing labels shall be recorded and re-labeled within one month of inspection.

(d) Maintain surface drainage structures – High priority facilities, such as those with recurrent illegal dumping, shall be reviewed and maintained annually as needed. Non-priority facilities shall be reviewed as needed. Removal of trash and debris from high priority areas shall occur annually prior to the rainy season.

(e) Dispose of waste materials – Develop and implement a procedure to dewater and dispose of materials extracted from catch basins. This procedure shall ensure that water removed during the catch basin cleaning process and waste material will not reenter the MS4.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.11.h. Permittee Operations and Maintenance Activities (O&M)

(i) **Task Description –** Within the third year of the effective date of the permit, the Permittee shall assess their O&M activities for potential to discharge pollutants in storm water and inspect all O&M BMPs on a quarterly basis.

(ii) **Implementation Level** - The Permittee shall:

(a) Develop and implement a program to assess O&M activities and subsequently develop applicable BMPs. The following Permittee O&M activities shall be included in the assessment for their potential to discharge pollutants in storm water:

1) Road and parking lot maintenance, including sidewalk repair, curb and gutter repair, pothole repair, pavement marking, sealing, and re-paving
2) Bridge maintenance, including re-chipping, grinding, saw cutting, and painting
3) Cold weather operations, including plowing, sanding, and application of deicing compounds and maintenance of snow disposal areas
4) Right-of-way maintenance, including mowing, herbicide and pesticide application, and planting vegetation
5) Storm water relevant Permittee-sponsored or sanctioned events such as large outdoor festivals, parades, or street fairs (eg. Earth Day, Coastal Cleanup Day, Creek Week)
6) Green waste deposited in the street
7) Graffiti removal
8) Hydrant flushing

(b) Identify all materials that could be discharged from each of these O&M activities, and which materials contain pollutants. Typical pollutants associated with these activities include metals, chlorides, hydrocarbons (e.g. benzene, toluene, ethylbenzene, and xylene), sediment, green waste, herbicide, pesticide, dried paint, and trash.

(c) Develop and implement a set of BMPs that, when applied during Permittee O&M activities, will reduce pollutants in storm water and non-storm water discharges. The Permittee shall use the CASQA Municipal Handbook or equivalent.

(d) Evaluate BMPs – All BMPs implemented during O&M activities shall be evaluated quarterly.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.11.i. Incorporation of Water Quality and Habitat Enhancement Features in New Flood Management Facilities

(i) **Task Description** – Within the third year of the effective date of the permit, the Permittee shall develop and implement a process for incorporating water quality and habitat enhancement features into new and rehabilitated flood management facilities.

(ii) **Implementation Level** – The Permittee shall develop and implement a process to incorporate water quality and habitat enhancement features in the design of all new

and rehabilitated flood management projects that are associated with the MS4 or that discharge to the MS4.

(iii) **Reporting –** The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.11.j. Landscape Design and Maintenance

(i) **Task Description** – Within the second year of the effective date of the permit**,** the Permittee shall implement a landscape design and maintenance program to reduce the amount of water, pesticides, herbicides and fertilizers used during Permittee operations and activities[19].

(ii) **Implementation Tasks** – At a minimum, the Permittee shall:

(a) Evaluate pesticides, herbicides and fertilizers used and application activities performed and identify pollution prevention and source control opportunities.

(b) Implement practices that reduce the discharge of pesticides, herbicides and fertilizers. At a minimum the Permittee shall:

1) Implement educational activities for municipal applicators and distributors.

2) Implement landscape management measures that rely on non-chemical solutions, including:

a) Create drought-resistant soils by amending soils with compost;
b) Create soil microbial community through the use of compost, compost tea, or inoculation;
c) Use native and/or climate appropriate plants to reduce the amount of water, pesticides, herbicides and fertilizers used;
d) Practice grasscycling on decorative turf landscapes to reduce water use and the need for fertilizers;
e) Keeping grass clippings and leaves away from waterways and out of the street using mulching, composting, or landfilling;
f) Preventing application of pesticides, herbicides and fertilizers during irrigation or within 48 hours of predicted rainfall with greater than 50% probability as predicted by National Oceanic and Atmospheric Administration (NOAA)[20];
g) Limiting or replacing herbicide and pesticide use (e.g., conducting manual weed and insect removal);
h) Prohibiting application of pesticides, herbicides and fertilizers as required by the regulations DPR 11-004 Prevention of Surface Water Contamination by Pesticides enacted by the Department of Pesticide Regulation;

[19] Water Efficient Landscape Ordinance can be found at: http://www.water.ca.gov/wateruseefficiency/docs/MWELO09-10-09.pdf
[20] www.srh.noaa.gov/forecast

i) Reducing mowing of grass to allow for greater pollutant removal, but not jeopardizing public safety.

3) Collect and properly dispose of unused pesticides, herbicides, and fertilizers.

4) Minimize irrigation run-off by using an evapotranspiration-based irrigation schedule and rain sensors.

(c) Record the types and amounts of pesticides, herbicides and fertilizers used in the permit area.

(iii) **Reporting** - The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.12. POST CONSTRUCTION STORM WATER MANAGEMENT PROGRAM

E.12.a. Post-Construction Measures

Permittees shall regulate development to comply with the following Sections:

- E.12.b Site Design Measures
- E.12.c. Regulated Projects
- E.12.d. Source Control Measures
- E.12.e. Low Impact Development (LID) Design Standards
- E.12.f. Hydromodification Measures
- E.12.g. Enforceable Mechanisms
- E.12.h. Operation and Maintenance of Storm Water Control Measures
- E.12.i. Post-Construction Best Management Practice Condition Assessment
- E.12.j. Planning and Development Review Process
- E.12.k. Post-Construction Storm Water Management Requirements Based on Assessment and Maintenance of Watershed Processes
- E.12.l. Alternative Post-Construction Storm Water Management Program

E.12.b. Site Design Measures

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall require implementation of site design measures for all projects that create and/or replace (including projects with no net increase in impervious footprint) between 2,500 square feet and 5,000 square feet of impervious surface, including detached single family homes that create and/or replace 2,500 square feet or more of impervious surface and are not part of a larger plan of development. Site design measures as specified in this section are not applicable to linear underground/overhead projects (LUPs).

(ii) **Implementation Level** - Projects shall implement one or more of the following site design measures to reduce project site runoff:

(a) Stream Setbacks and Buffers - a vegetated area including trees, shrubs, and herbaceous vegetation, that exists or is established to protect a stream system, lake reservoir, or coastal estuarine area;
(b) Soil Quality Improvement and Maintenance - improvement and maintenance soil through soil amendments and creation of microbial community;
(c) Tree Planting and Preservation - planting and preservation of healthy, established trees that include both evergreens and deciduous, as applicable;
(d) Rooftop and Impervious Area Disconnection - rerouting of rooftop drainage pipes to drain rainwater to rain barrels, cisterns, or permeable areas instead of the storm sewer;
(e) Porous Pavement - pavement that allows runoff to pass through it, thereby reducing the runoff from a site and surrounding areas and filtering pollutants;
(f) Green Roofs - a vegetative layer grown on a roof (rooftop garden);
(g) Vegetated Swales - a vegetated, open-channel management practice designed specifically to treat and attenuate storm water runoff;
(h) Rain Barrels and Cisterns - system that collects and stores storm water runoff from a roof or other impervious surface.

Project proponents shall use the State Water Board SMARTS Post-Construction Calculator[21], or equivalent to quantify the runoff reduction resulting from implementation of site design measures.

(iii) **Reporting** - The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.12.c. Regulated Projects

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall implement standards to effectively reduce runoff and pollutants associated with runoff from Regulated Projects as defined below.

(ii) **Implementation Level** - The Permittee shall regulate all projects that create and/or replace 5,000 square feet or more of impervious surface (Regulated Projects). The Permittee shall require these Regulated Projects to implement measures for site design, source control, runoff reduction, storm water treatment and baseline hydromodification management as defined in this Order.

Regulated Projects do not include:

- Detached single family home projects that are not part of a larger plan of development;
- Interior remodels;

[21] The State Water Board SMARTS Post-Construction Calculator can be found at: https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp

- Routine maintenance or repair such as: exterior wall surface replacement, pavement resurfacing within the existing footprint.
- LUPs - Unless the LUP has a discrete location that has 5,000 square feet or more of newly constructed contiguous impervious surface. When the LUP has a discrete location that has 5,000 sq-ft or more of new contiguous impervious surface, only that specific discrete location is subject to Section E.12.c.

Regulated Projects include development projects. Development includes new and redevelopment projects on public or private land that fall under the planning and permitting authority of a Permittee. 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. Redevelopment does not include trenching, excavation and resurfacing associated with LUPs; pavement grinding and resurfacing of existing roadways; construction of new sidewalks, pedestrian ramps, or bike lanes on existing roadways; or routine replacement of damaged pavement such as pothole repair or replacement of short, non-contiguous sections of roadway. The following (a-c) describe specific Regulated Project requirements for redevelopment, road projects and LUPs:

(a) Where a redevelopment project results in an increase of more than 50 percent of the impervious surface of a previously existing development, runoff from the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included to the extent feasible.

(b) Where a redevelopment project results in an increase of less than 50 percent of the impervious surface of a previously existing development, only runoff from the new and/or replaced impervious surface of the project must be included.

(c) Road Projects and LUPs - Any of the following types of road projects and LUPs that create 5,000 square feet or more of newly constructed contiguous impervious surface and that are public road projects and/or fall under the building and planning authority of a Permittee shall comply with Section E.12.e. Low Impact Development Standards except that treatment of runoff of the 85th percentile that cannot be infiltrated onsite shall follow U.S. EPA guidance regarding green infrastructure to the extent feasible. Types of projects include:

1) Construction of new streets or roads, including sidewalks and bicycle lanes built as part of the new streets or roads.
2) Widening of existing streets or roads with additional traffic lanes.
   a) 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, runoff from the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design.
   b) Where the addition of traffic lanes results in an alteration of less than 50 percent (but 5,000 square feet or more) of the impervious surface

of an existing street or road, only the runoff from new and/or replaced impervious surface of the project must be included in the treatment system design.

3) Construction of linear underground/overhead projects (LUPs)
4) Specific exclusions are:
   a) Sidewalks built as part of new streets or roads and built to direct storm water runoff to adjacent vegetated areas.
   b) Bicycle lanes that are built as part of new streets or roads that direct storm water runoff to adjacent vegetated areas.
   c) Impervious trails built to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees.
   d) Sidewalks, bicycle lanes, or trails constructed with permeable surfaces.
   e) Trenching, excavation and resurfacing associated with LUPs; pavement grinding and resurfacing of existing roadways and parking lots; construction of new sidewalks, pedestrian ramps, or bike lanes on existing roadways; or routine replacement of damaged pavement such as pothole repair or replacement of short, non-contiguous sections of roadway.

Effective Date for Applicability of Low Impact Development Runoff Standards to Regulated Projects: By the second year of the effective date of the permit, the Permittee shall require these Post-Construction Standards be applied on applicable new and redevelopment Regulated Projects, both private development requiring municipal permits and public projects, to the extent allowable by applicable law. These include discretionary permit projects that have not been deemed complete for processing and discretionary permit projects without vesting tentative maps that have not requested and received an extension of previously granted approvals. Discretionary projects that have been deemed complete prior to the second year of the effective date of this Order are not subject to the Post-Construction Standards herein. For the Permittee's Regulated Projects, the effective date shall be the date their governing body or designee approves initiation of the project design.

Permittee's Development Projects - The Permittee shall develop and implement an equivalent approach, to the approach used for private development projects, to apply the most current version of the low impact development runoff standards to applicable public development projects, to the extent allowable by applicable law.

E.12.d. Source Control Measures

(i) **Task Description** – Regulated Projects with pollutant-generating activities and sources shall be required to implement standard permanent and/or operation source control measures as applicable.

(ii) **Implementation Level** - Measures for the following pollutant generating activities and sources shall be designed consistent with recommendations from the CASQA

Stormwater BMP Handbook for New Development and Redevelopment or equivalent manual, and include:

(a) Accidental spills or leaks
(b) Interior floor drains
(c) Parking/storage areas and maintenance
(d) Indoor and structural pest control
(e) Landscape/outdoor pesticide use
(f) Pools, spas, ponds, decorative fountains, and other water features
(g) Restaurants, grocery stores, and other food service operations
(h) Refuse areas
(i) Industrial processes
(j) Outdoor storage of equipment or materials
(k) Vehicle and equipment cleaning
(l) Vehicle and equipment repair and maintenance
(m) Fuel dispensing areas
(n) Loading docks
(o) Fire sprinkler test water
(p) Drain or wash water from boiler drain lines, condensate drain lines, rooftop equipment, drainage sumps, and other sources
(q) Unauthorized non-storm water discharges
(r) Building and grounds maintenance

E.12.e. Low Impact Development (LID) Design Standards

(i) **Task Description –** The Permittee shall require all Regulated Projects to implement low impact development (LID) standards designed to reduce runoff, treat storm water, and provide baseline hydromodification management to the extent feasible, to meet the Numeric Sizing Criteria for Storm Water Retention and Treatment under Section E.12.e(ii)(c).

(ii) **Implementation Level –** The Permittee shall adopt and implement requirements and standards to ensure design and construction of development projects achieve the following LID Design Standards.

(a) **Site Assessment**

At the earliest planning stages, the Permittee shall require Regulated Projects to assess and evaluate how site conditions, such as soils, vegetation, and flow paths, will influence the placement of buildings and paved surfaces. The evaluation will be used to meet the goals of capturing and treating runoff and assuring these goals are incorporated into the project design. The Permittee may adopt or reference an existing LID site assessment methodology[22]Permittees shall require Regulated Projects to consider optimizing the site layout through the following methods:

1) Define the development envelope and protected areas, identifying areas that are most suitable for development and areas to be left undisturbed.

[22] Low Impact Development Manual for Southern California (Low Impact Development Center – See CASQA's LID website at: http://www.casqa.org/LID/tabid/240/Default.aspx.

2) Concentrate development on portions of the site with less permeable soils and preserve areas that can promote infiltration.
3) Limit overall impervious coverage of the site with paving and roofs.
4) Set back development from creeks, wetlands, and riparian habitats.
5) Preserve significant trees.
6) Conform the site layout along natural landforms.
7) Avoid excessive grading and disturbance of vegetation and soils.
8) Replicate the site's natural drainage patterns.
9) Detain and retain runoff throughout the site.

(b) **Drainage Management Areas**

The Permittee shall require each Regulated Project to provide a map or diagram dividing the developed portions of the project site into discrete Drainage Management Areas (DMAs), and to manage runoff from each DMA using Site Design Measures, Source Controls and/or Storm Water Treatment and Baseline Hydromodification Measures.

(c) **Numeric Sizing Criteria for Storm Water Retention and Treatment**

The Permittees shall require facilities designed to evapotranspire, infiltrate, harvest/use, and biotreat storm water to meet at least one of the following hydraulic sizing design criteria:

1) Volumetric Criteria:

   a) The maximized capture storm water volume for the tributary area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998) pages 175-178 (that is, 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 in Section 5 of the CASQA's Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.

2) Flow-based Criteria:

   a) The flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity; or

   b) The flow of runoff produced from a rain event equal to at least 2 times the 85th percentile hourly rainfall intensity as determined from local rainfall records.

(d) **Site Design Measures**

The Permittee shall implement Site Design Measures (as defined in Section E.12.b. Site Design Measures and Section E.12.e(ii)(a) Site Assessment), site layout and design measures, based on the objective of achieving infiltration, evapotranspiration and/or harvesting/reuse of the 85th percentile 24-hour storm runoff event. Site design measures shall be used to reduce the amount of runoff, to the extent technically feasible, for which retention and runoff is required . Any remaining runoff from impervious DMAs may then be directed to one or more bioretention facilities as specified in Section E.12.e.(ii)(f), below.

(e) **Source Controls**

The Permittee shall implement Source Controls as defined in Section E.12.d. Source Control Measures.

(f) **Storm Water Treatment Measures and Baseline Hydromodification Management Measures**

After implementation of Site Design Measures, remaining runoff from impervious DMAs must be directed to one or more facilities designed to infiltrate, evapotranspire, and/or bioretain the amount of runoff specified in Section E.12.e(ii)(c) Numeric Sizing Criteria for Storm Water Retention and Treatment. The facilities must be demonstrated to be at least as effective as a bioretention system with the following design parameters:

1) Maximum surface loading rate of 5 inches per hour, based on the flow rates calculated. A sizing factor of 4% of tributary impervious area may be used.
2) Minimum surface reservoir volume equal to surface area times a depth of 6 inches.
3) Minimum planting medium depth of 18 inches. The planting medium must sustain a minimum infiltration rate of 5 inches per hour throughout the life of the project and must maximize runoff retention and pollutant removal. A mixture of sand (60%-70%) meeting the specifications of American Society for Testing and Materials (ASTM) C33 and compost (30%-40%) may be used.
4) Subsurface drainage/storage (gravel) layer with an area equal to the surface area and having a minimum depth of 12 inches.
5) Underdrain with discharge elevation at top of gravel layer.
6) No compaction of soils beneath the facility, or ripping/loosening of soils if compacted.
7) No liners or other barriers interfering with infiltration.
8) Appropriate plant palette for the specified soil mix and maximum available water use.

(g) **Alternative Designs —** Facilities, or a combination of facilities, of a different design than in Section E.12.e.(ii)(f) may be permitted if all of the following

measures of equivalent effectiveness are demonstrated:

1) Equal or greater amount of runoff infiltrated or evapotranspired;
2) Equal or lower pollutant concentrations in runoff that is discharged after biotreatment;
3) Equal or greater protection against shock loadings and spills;
4) Equal or greater accessibility and ease of inspection and maintenance.

(h) **Allowed Variations for Special Site Conditions** - The bioretention system design parameters in Section E.12.e.(ii)(f) may be adjusted for the following special site conditions:

1) Facilities located within 10 feet of structures or other potential geotechnical hazards established by the geotechnical expert for the project may incorporate an impervious cutoff wall between the bioretention facility and the structure or other geotechnical hazard.
2) Facilities with documented high concentrations of pollutants in underlying soil or groundwater, facilities located where infiltration could contribute to a geotechnical hazard, and facilities located on elevated plazas or other structures may incorporate an impervious liner and may locate the underdrain discharge at the bottom of the subsurface drainage/storage layer (this configuration is commonly known as a “flow-through planter”).
3) Facilities located in areas of high groundwater, highly infiltrative soils or where connection of underdrain to a surface drain or to a subsurface storm drain are infeasible, may omit the underdrain.
4) Facilities serving high-risk areas such as fueling stations, truck stops, auto repairs, and heavy industrial sites may be required to provide additional treatment to address pollutants of concern unless these high-risk areas are isolated from storm water runoff or bioretention areas with little chance of spill migration.

(i) **Exceptions to Requirements for Bioretention Facilities** - Contingent on a demonstration that use of bioretention or a facility of equivalent effectiveness is infeasible, other types of biotreatment or media filters (such as tree-box-type biofilters or in-vault media filters) may be used for the following categories of Regulated Projects:

1) Projects creating or replacing an acre or less of impervious area, and located in a designated pedestrian-oriented commercial district (i.e., smart growth projects), and having at least 85% of the entire project site covered by permanent structures;
2) Facilities receiving runoff solely from existing (pre-project) impervious areas;and
3) Historic sites, structures or landscapes that cannot alter their original configuration in order to maintain their historic integrity.

By the second year of the effective date of the permit, each Permittee shall adopt or reference appropriate performance criteria for such biotreatment and media filters.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.12.f. Hydromodification Management

(i) **Task Description** – Within the third year of the effective date of the permit, the Permittee shall develop and implement Hydromodification Management procedures. Hydromodification management projects are Regulated Projects that create and/or replace one acre or more of impervious surface. A project that does not increase impervious surface area over the pre-project condition is not a hydromodification management project.

(ii) **Implementation Level** - The Permittee shall implement the following Hydromodification Standard:

(a) Post-project runoff shall not exceed estimated pre-project flow rate for the 2-year, 24-hour storm in the following geomorphic provinces (Figure 1):

- Coast Ranges
- Klamath Mountains
- Cascade Range
- Modoc Plateau
- Basin and Range
- Sierra Nevada
- Great Valley

(b) Post-project runoff shall not exceed estimated pre-project flow rate for the 10-year, 24-hour storm in the following geomorphic provinces (Figure 1):

- Transverse Ranges
- Peninsular Ranges
- Mojave Desert
- Colorado Desert

Figure 1. California Geomorphic Provinces

Alternatively, the Permittee may use a geomorphically based hydromodification standard or set of standards and analysis procedures designed to ensure that Regulated Projects do not cause a decrease in lateral (bank) and vertical (channel bed) stability in receiving stream channels. The alternative hydromodification standard or set of standards and analysis procedures must be reviewed and approved by the Regional Board Executive Officer.

(iii) **Reporting** –The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.12.g. Enforceable Mechanisms

(i) **Task Description** - Within the third year of the effective date of the permit, the Permittee shall develop and/or modify enforceable mechanisms that will effectively implement the requirements in Section E.12.b through f (if necessary).

(ii) **Implementation Level** - The Permittee shall develop and/or modify enforceable mechanisms that will effectively implement the requirements in Section E.12.b through E.12.f and may include municipal codes, regulations, standards, and specifications. The Permittee shall:

(a) Conduct an analysis of all applicable codes, regulations, standards, and/or specifications to identify modifications and/or additions necessary to fill gaps and remove impediments to effective implementation of project-scale development requirements.
(b) Approve new and/or modified enforceable mechanisms that effectively resolve regulatory conflicts and implement the requirements in Sections E.12.b through E.12.f (if necessary)
(c) Apply new and/or modified enforceable mechanisms to all applicable new and redevelopment projects. Develop and make available specific guidance for LID BMP design
(d) Complete a Tracking Report indicating the Permittee's accomplishments in education and outreach supporting implementation of LID requirements for new and redevelopment projects.

E.12.h. Operation and Maintenance of Post-Construction Storm Water Management Measures

(i) **Task Description** –Within the second year of the effective date of the permit, the Permittee shall implement an O&M Verification Program for storm water treatment and baseline hydromodification management structural control measures defined in Section E.12.e(ii)(f). Storm Water Treatment Measures and Baseline Hydromodification Management Measures on all Regulated Projects.

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

(a) All Regulated Projects shall at a minimum, require at least one of the following from all project proponents and their successors in control of the Project or successors in fee title:

1) The project proponent's signed statement accepting responsibility for the O&M of structural control measure(s) until such responsibility is legally transferred to another entity;
2) 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 installed treatment system(s) and hydromodification control(s) (if any) until such responsibility is legally transferred to another entity;

3) Written text in project deeds, or conditions, covenants and restrictions 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 treatment system(s) and hydromodification control(s) (if any) until such responsibility is legally transferred to another entity; or
4) Any other legally enforceable agreement or mechanism, such as recordation in the property deed, that assigns the O&M responsibility for the installed treatment system(s) and hydromodification control(s) (if any) to the project owner(s) or the Permittee.

(b) Coordination with the appropriate mosquito[23] and vector control agency with jurisdiction to establish a protocol for notification of installed treatment systems and hydromodification management controls. On an annual basis, before the wet season, prepare a list of newly installed (installed within the reporting period) storm water treatment systems and hydromodification management controls to the local mosquito and vector control agency and the appropriate Regional Water Board. The Permittee may submit the list of Regulated Projects as described in Section E.12.h.(ii)(e). This list shall include the facility locations and a description of the storm water treatment measures and hydromodification management controls installed.

(c) 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 for the sole purpose of performing O&M inspections of the installed treatment system(s) and hydromodification control(s) (if any).

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

(e) A database or equivalent tabular format of all Regulated Projects (public and private) that have installed treatment systems. This database or equivalent tabular format shall include the following information for each Regulated Project:

1) Name and address of the Regulated Project;
2) Specific description of the location (or a map showing the location) of the installed treatment system(s) and hydromodification control(s) (if any);
3) Date(s) that the treatment system(s) and hydromodification controls (if any) is/are installed;
4) Description of the type and size of the treatment system(s) and hydromodification control(s) (if any) installed;
5) Responsible operator(s) of each treatment system and hydromodification control (if any);
6) Dates and findings of inspections (routine and follow-up) of the treatment system(s) and hydromodification control(s) (if any) by the Permittee; and
7) Any problems and corrective or enforcement actions taken.

[23] California Department of Public Health. (2012). Best Management Practices for Mosquito Control in California. Retrieved on July 20, 2012 from http://www.westnile.ca.gov/resources.php

8) Maintenance Approvals: The Permittee shall ensure that systems and hydromodification controls installed at Regulated Projects are properly operated and maintained for the life of the projects. In cases where the responsible party for a treatment system or hydromodification control has worked diligently and in good faith with the appropriate state and federal agencies and the Permittee to obtain approvals necessary to complete maintenance activities for the treatment system or hydromodification management control, but these approvals are not granted, the Permittee shall be deemed to be in compliance with this Provision.

(iii) **Reporting –** The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.12.i. Post-Construction Best Management Practice Condition Assessment

(i) **Task Description** – Within the third year of the effective date of the permit, the Permittee shall inventory and assess the maintenance condition of structural post-construction BMPs (including BMPs used for flood control) within the Permittee's jurisdiction.

(ii) **Implementation Level** – The Permittee shall develop and implement a plan to inventory, map, and determine the relative maintenance condition of structural post-construction BMPs. Maintenance condition shall be determined through a self-certification program where Permittees require annual reports from authorized parties demonstrating proper maintenance and operations. The plan shall include:

(a) An inventory and map of existing structural post-construction BMPs, in GIS if available.
(b) Assessments of the self-certification program annual reports. Assessment shall include a ranking of structural BMPs and verification that BMPs are operating to remove pollutants as designed. Regional BMPs should receive higher priority than lot-scale BMPs, and BMPs designed to remove pollutants for which receiving water is impaired should receive priority attention over other BMPs.
(c) Appropriate escalating enforcement based on the Permittee Enforcement Response Plan to ensure proper maintenance of BMPs and submittal of self-certification annual reports.
(d) Self-Certification Annual Reports. At a minimum, the self-certification annual reports shall include:

1) Field observations to determine the effectiveness of the structural post construction BMPs in removing pollutants of concern from storm water runoff and/or reducing hydromodification impacts as designed.

2) Long-term plan for conducting regular maintenance of BMPs, including the frequency of such maintenance.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section E.16.a.for compliance directions.

E.12.j. Planning and Development Review Process

(i) **Task Description** – The Permittee shall review their planning and permitting process to assess any gaps or impediments impacting effective implementation of these post-construction requirements specified in Section E.12, and where these are found to exist, seek solutions to promote implementation of these requirements within the context of public safety and community goals for land use. The Permittee shall prioritize review of the landscape code (code detailing landscaping requirements and considerations which should be implemented to protect environmental quality) to correct gaps and impediments impacting effective implementation of post-construction requirements.

(ii) **Implementation Level** – During years 1 – 3, the Permittee shall conduct the review using an existing guide or template already developed for MS4s (such as the Municipal Regulatory Update Assistance Program (MRUAP)[24] conducted by AHBL, Inc. for the Low Impact Development Initiative (LIDI) on the Central Coast). By the fourth year of the effective date of the permit, any changes to the planning and permitting process will be completed to effectively administer these provisions. Priority shall be placed on review of the landscape code, with the following implementation level.

(a) Within the first year of the effective date of this permit, the Permittee shall conduct an analysis of the landscape code to correct gaps and impediments impacting effective implementation of post-construction requirements.

(b) Within the second year of the effective date of the permit, the Permittee shall complete any changes to the landscape code to effectively administer post-construction requirements.

(iii) **Reporting** – By the second year Annual Report and annually thereafter, complete and have available a summary of the review process, and any proposed or completed changes to the Permittee's program.

[24] http://www.casqa.org/LIDDemo/LIDTraining/tabid/246/Default.aspx

E.12.k. Post-Construction Storm Water Management Requirements Based on Assessment and Maintenance of Watershed Processes

Small MS4s subject to Section E of this Order, in place of complying with the requirements set forth in Section E.12, except for Sections E.12.j. Planning and Development Review Process and E.12.e(ii)(e) Source Control Requirements, shall comply with post-construction storm water management requirements based on a watershed-process approach developed by Regional Water Board that include the following:

- Completion of a comprehensive assessment of dominant watershed processes affected by urban storm water
- LID site design and runoff reduction measures, numeric runoff treatment and retention controls, and hydromodification controls that will maintain watershed processes and protect water quality and beneficial uses.
- A process by which Regional Board staff will actively engage Permittees to adaptively manage requirements as determined by the assessment of watershed processes.
- An annual reporting program that involves Regional Board staff and State Board staff to inform statewide watershed process based criteria.

The regional watershed-process based approach must be approved by the Regional Water Board following a public process.

E.12.l. Alternative Post-Construction Storm Water Management Program

A Permittee may propose alternative post-construction measures in lieu of some or all of Section E.12. requirements for multiple benefit projects. Multiple-benefit projects include projects that may address any of the following, in addition to water quality: water supply, flood control, habitat enhancement, open space preservation, recreation, climate change. Multiple-benefit projects may be applied at various scales including project site, municipal or sub-watershed level. Multiple-benefit projects may include, but are not limited to, projects developed under Watershed Improvement Plans (Water Code §16100 et seq.), IRWMP implementation and green infrastructure projects. Multiple benefit projects must be equally or more protective of water quality than Section E.12. requirements.

The Regional Water Board or the Executive Officer, may approve alternative post-construction measures for multiple-benefit projects, as described above, after an opportunity for public comment, if the Regional Water Board or Executive Officer finds that the alternative measures are consistent with the MEP standard.

E.13. WATER QUALITY MONITORING

Traditional Small MS4 Permittees that are required to conduct monitoring of discharges to ASBS, TMDL, or 303(d) impaired water bodies, as described in Sections E.13.(a)-(c), are not required to perform additional monitoring as specified in Sections E.13.d.1. and E.13.d.2.

Permittees are encouraged to participate in a regional monitoring program in order to cost-effectively combine resources and water quality information. Regional monitoring is the

collaboration of local and regional monitoring programs that are designed to create a more comprehensive picture of water quality conditions within a watershed. The following management questions may be used to assist in guiding the development of a regional monitoring program, as applicable[25]:

1) Are water quality standards being met in receiving waters?
2) What is the extent and magnitude of the current or potential receiving water problems[26]?
3) What is the relative urban runoff contribution to the receiving water problem(s)?
4) What are the sources to urban runoff that contribute to the receiving water problem(s)?
5) Are conditions in receiving waters getting better or worse?

Regional monitoring programs shall be reviewed and approved by the Executive Officer of the applicable Regional Water Board[27].

Where a regional monitoring group has initiated plans, before the effective date of this Order, to conduct monitoring that achieves Section E.13. compliance, the Permittee may request the Executive Officer of the applicable Regional Board tailor compliance dates to synchronize with such efforts. Additionally, existing regional water monitoring efforts shall be reviewed and approved by a Regional Water Board Executive Officer.

Where a Permittee receives grant funding to conduct monitoring that achieves Section E.13. compliance, the Permittee may request the Regional Water Board Executive Officer tailor compliance dates to synchronize with such efforts.

E.13.a. ASBS Monitoring

All Permittees that discharge to an ASBS and are covered by an Ocean Plan exception shall comply with the monitoring requirements described in the terms, prohibitions and special conditions in Attachment C.

E.13.b. TMDL Monitoring

All Permittees that are assigned a wasteload allocation or identified as a responsible party in a TMDL approved by the U.S. EPA where urban runoff is listed as the source, shall comply with the monitoring requirements included in Attachment G and consult with the Regional Water Board within one year of the effective date of the permit to determine the monitoring study design and a monitoring implementation schedule. Where a TMDL is limited to a single

[25] The five core management questions are based on the Stormwater Monitoring Coalition's Model Monitoring Technical Committee Technical Report # 419: Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California.
[26] Water quality problems include exceedances of water quality standards, including impairment of designated uses, or other significant water quality impacts, including habitat and biological impacts.
[27] The regional monitoring programs may deviate from the specific requirements in Section E.13.a. to the extent approved by the Executive Officer, except that the regional monitoring program shall be SWAMP comparable and that all data shall be placed in the California Environmental Data Exchange Network (CEDEN).

constituent within a single reach of the watershed, the Regional Water Board Executive Officer may require additional monitoring, per Water Code § 13383. Permittees shall implement TMDL monitoring as specified by the Regional Water Board Executive Officer.

E.13.c. 303(d) Monitoring

All Permittees that discharge to waterbodies listed as impaired on the 303(d)[28] list where urban runoff is listed as the source, shall consult with the Regional Water Board within one year of the effective date of the permit to assess whether monitoring is necessary and if so, determine the monitoring study design and a monitoring implementation schedule. Permittees shall implement monitoring of 303(d) impaired water bodies as specified by the Regional Water Board Executive Officer.

E.13.d. Receiving Water Monitoring and Special Studies

Traditional Small MS4 Permittees with a population greater than 50,000 listed in Attachment A that are not already conducting ASBS, TMDL or 303(d) monitoring efforts shall participate in one of the following monitoring programs, subject to Regional Water Board Executive Officer approval:

- E.13.d.1. Receiving Water Monitoring
- E.13.d.2. Special Studies

E.13.d.1. Receiving Water Monitoring

(i) **Task Description –** Within the second year of the effective date of the permit, the Permittee shall develop and implement a receiving water monitoring program to (1) Monitor receiving water quality at upstream location in an area undergoing development and evaluate changes in receiving water quality over time, and (2) Monitor receiving water quality at a downstream location in an urban area and evaluate changes in receiving water quality over time. Permittees may, to the extent allowed by law, establish a monitoring fund into which all new development contributes on a proportional basis (% development fee, size/number of lots, etc.). Monitoring funding may be overseen by municipalities or coalition of municipalities.

(ii) **Implementation Level -** By the first year of the permit, the Permittee shall select one (1) urban/rural interface monitoring site to monitor receiving water quality at an upstream location in an area undergoing development and evaluate changes in receiving water quality over time, and; one (1) urban area monitoring site to monitor receiving water quality at a downstream location in an urban area and evaluate changes in receiving water quality over time. Site selection shall include the following:

(a) Urban/Rural Interface. Identify one characteristic waterway at the top, or upstream, of a HUC 12 level watershed planned for development in the near future that traverses an urban/rural interface, using the 2010 Census Data and urban area maps, and establish a permanent monitoring location at the

[28] http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml

identified urban/rural interface[29]. Monitoring at the urban/rural interface shall address the question: Does receiving water quality change as LID BMPs are integrated into new development?

(b) Urban Downstream. Identify one characteristic waterway at the bottom, or downstream, of the same HUC 12 watershed as the urban/rural interface monitoring location and within an urbanized area and establish a permanent monitoring location at the identified urbanized area waterway. Monitoring at the urban area site shall address the question: Does receiving water quality improve as a result of efforts to control the sources of pollution and educate the public?

By the second year of the permit term and after establishment of site selection, the Permittee shall monitor the urban/rural interface site to address the hypothesis that receiving water quality will remain the same as new development proceeds, and the urban area site to address the hypothesis that receiving water quality will improve over time as storm water and other water quality programmatic efforts are implemented. Monitoring shall be implemented in accordance with Table 3. Receiving Water Monitoring Parameters and Protocols.

Table 3: Receiving Water Monitoring Parameters and Protocol

Urban/Rural Interface:

Objective: Monitor receiving water quality at upstream location in an area undergoing development. Evaluate changes in receiving water quality over time.

Question: Does receiving water quality change as LID BMPs are integrated into new development?

Hypothesis: Receiving water quality will remain the same as new development proceeds.

Urban Downstream:

Objective: Monitor receiving water quality at a downstream location in an urban area. Evaluate changes in receiving water quality over time.

Question: Does receiving water quality improve as a result of efforts to control the sources of pollution and educate the public?

Hypothesis: Receiving water quality will improve over time as storm water and other water quality programmatic efforts are implemented.

PARAMETER	ENDPOINT	BENEFICIAL USED PROTECTED	JUSTIFICATION	PROTOCOL
Water Quality	Pyrethroids* (sediment)	Aquatic Life	Pyrethroids** among the most ubiquitous urban contaminant in storm water. Highly toxic to aquatic life.	Method with detection limit of 1 pptr (5 pptr for permethrin only) such as the GC-MS-MS method of Water Pollution Control Lab. Yearly in spring at urban/rural interface only. Refer to pending SWAMP guidelines.
	Dissolved oxygen (DO)	Aquatic life, recreation	DO reports on presence of excessive nutrients (N, P) and effects of organic matter loading into a waterbody. High DO during day, low DO at night suggests algae overgrowth.	Option 1: One week of evening grab samples (a minimum of 2 hours after dusk or 2 hours before sunrise) in spring (as soon as safe to get into waterway), summer, & fall. OR Option 2: Continuous sampling. 1

[29] The urban/rural interface is identified as the geographical location at which urban land use and rural land use interact

				week in spring summer, fall. In rivers or lakes, 2 samplers to obtain depth-integrated values.
	Temperature	Aquatic life	Aquatic life can survive within a temperature window, exceedances lethal. If loggers are deployed, DO probes often also measure temperature.	Option 1: Daytime measurement between noon – 5 pm, at the same time of day, for 2 weeks in the spring, summer, and fall. Option 2: Continuous sample. Same as for dissolved oxygen.
	Bacteria	Recreation	Increase cell count linked to poor management practices, high bacteria levels limit recreational use of waterways.	Once yearly in later summer or fall. Collect 1 sample weekly x 4 weeks. Calculate geometric mean. Measure e. coli.
	Nutrients	Aquatic life Recreation Other	Excess nutrients can cause eutrophication of waterways leading to low dissolved oxygen which harms aquatic life. Algal overgrowth can also impair flows, adversely affect aesthetics, limiting recreation.	Benthic algal biomass and % cover (benthic chlorophyll a) from sediment in wadeable and non-wadeable streams or planktonic algal biomass (water column chlorophyll) from non-wadeable rivers and lakes. 3 times per year at beginning, middle, and end of growing season. Use SWAMP protocol.
Physical Habitat	PHAB assessment	Aquatic life	Expect to see few changes in habitat with effective LID implementation	Once yearly in spring. Use SWAMP protocol.
	Channel cross sections	Aquatic life	Reports on stability of creek/river channel	Once yearly in spring.
	Flow	Aquatic life	Expect minimal changes in flow rate if LID practices minimizes changes in hydrograph usually seen with urbanization	Option 1: Pressure transducer. Use channel cross sections put in same time as DO probe. Measure spring, summer, and fall Option 2: Install stage gage, develop rating curve. Evaluate spring, summer, and fall for 2 weeks.
	Photo documentation	Overall conditions	Pictures and flood prone area will aid in the interpretation of the data	Once yearly in spring.
Aquatic Life	Bioassessment	Aquatic life	BMIs integrate the sum of all conditions. Use early measurements as the baseline. In some cases, expect improved BMIs, depending on previous use of land.	In spring as soon as safe to enter water, use SWAMP protocol

* Pyrethroid monitoring is required at the urban/rural interface site only.

**Currently, pyrethroids are the pesticide of greatest concern and abundance in urban/suburban waterways. However, new regulations enacted by the Dept. of Pesticide Regulation restrict how pyrethroids may be applied. Initial models by UC Davis researchers suggest that this could result in a runoff reduction of 80-90%, depending on the amount of impervious cover in the watershed. In the future, other pesticides may become more of a threat to aquatic life in urban waterways. One pesticide that is being used with greater frequency is fipronil, a phenylpyrazole insecticide, that is more water soluble than pyrethroids. In order to use the resources of the permittees most efficiently, the State Water Resource Control Board reserves the right to modify the terms and conditions of the permit based on new information on pesticide use and toxicity. This could include substituting another pesticide for monitoring or eliminating this endpoint.

(iii) **Reporting –** By the second year Annual Report, the Permittee shall complete and have available a report (50 page maximum) that includes a summary of baseline data collections and discussion of monitoring program results;

By the fifth year Annual Report, the Permittee shall complete and have available a report (50 page maximum) that includes a comparison of data collection to baseline data, and discussion of monitoring program results.

At a minimum, the second and fifth year Annual Reports shall include the following information:

(a) The purpose of the monitoring, brief contextual background and a brief description of the study design and rationale.
(b) Sampling site(s) locations, including latitude and longitude coordinates, water body name and water body segment if applicable. Sampling design, including sampling protocol, time of year, sampling frequency and length of sampling.
(c) Methods used for sample collection: list methods used for sample collection, sample or data collection identification, collection date, and media if applicable.
(d) Results of data collection, including concentration detected, measurement units, and detection limits if applicable.
(e) Quantifiable assessment, analysis and interpretation of data for each monitoring parameter.
(f) Comparison to reference sites (if applicable), guidelines or targets
(g) Discussion of whether data collected addresses the objective(s) or question(s) of study design
(h) Quantifiable discussion of program/study pollutant reduction effectiveness.

Where applicable, the Permittee shall prepare, maintain, and implement a Quality Assurance Project Plan (QAPP) in accordance with the Surface Water Ambient Monitoring Program. All monitoring samples shall be collected and analyzed according to the Program QAPP developed for the purpose of compliance with this Order. SWAMP Quality Assurance Program Plan (2008) is available at:

http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/qapp/qaprp082209.pdf

A formatted Microsoft Word document that includes guidelines and boilerplate language for developing the permit QAPP is available at:

http://www.waterboards.ca.gov/water_issues/programs/swamp/tools.shtml#qa

Water quality data shall be uploaded to SMARTS and must conform to California Environmental Data Exchange Network (CEDEN) Minimum Data Templates format. CEDEN Minimum Data Templates are also available at: http://ceden.org/

E.13.d.2. Special Studies

(i) **Task Description –** Within the first year of the effective date of the permit, the Permittee, as an alternative to Section E.13.d.1. Receiving Water Monitoring, may develop and implement a special study monitoring program to assess and evaluate the effectiveness of water quality projects or storm water program elements designed to reduce specific water quality pollutants that are causing or contributing to beneficial use impairment. The special studies must demonstrate the nexus between storm water program implementation, water quality protection and pollutant reduction effectiveness and may include, but are not limited to:

(a) Assessment of effectiveness of habitat enhancement efforts and assessment of effectiveness of stream restoration projects (i.e., stream channel restoration as related to implementation of hydromodification standards);
(b) Assessment of effectiveness of low impact development pilot projects, and assessment of storm water program components through pollutant load reduction quantification and/or discharge water quality monitoring (i.e., reduction of impervious surface related to implementation of Post-Construction Storm Water Management Program).

(ii) **Implementation Level** – By the first year of the permit, the Permittee shall develop and implement a special study plan and shall submit to an applicable Regional Board for review and approval. Within the second year of the effective date of the permit, the Permittee shall begin implementation of the approved special study plan. The study plan shall include, at a minimum:

(a) Purpose/objective of the monitoring (sampling rationale), including reasoning to implement a special study in lieu of the Receiving Water Monitoring described in Section E.13.d.1.
(b) Brief project background information and overall study design (i.e., surrounding land uses, reference monitoring data, if applicable, and site conditions)
(c) Parameters that are being measured, how parameters are measured and rationale for parameter selection.
(d) Frequency that parameters are being measured (sampling frequency)
(e) Sampling site location
(f) Description of how the data will be managed, analyzed (including statistical analysis) and reported
(g) Expected results based on study plan design and hypothesis

(iii) **Reporting –** By the second year Annual Report, the Permittee shall complete and have available a report (50 page maximum) that includes a summary of baseline data collections and discussion of monitoring program results.

By the fifth year Annual Report, the Permittee shall complete and have available a report (50 page maximum) that includes a comparison of data collection to baseline data, and discussion of monitoring program results.

At a minimum, the second and fifth year Annual Reports shall include the following information:

(a) The purpose of the monitoring, contextual background and a description of the study design and rationale.
(b) Sampling site(s) locations, including latitude and longitude coordinates, water body name and water body segment if applicable. Sampling design, including sampling protocol, time of year, sampling frequency and length of sampling.
(c) Methods used for sample collection: list methods used for sample collection, sample or data collection identification, collection date, and media if applicable.
(d) Results of data collection, including concentration detected, measurement units, and detection limits if applicable.
(e) Quantifiable assessment analysis and interpretation of data for each monitoring parameter or other data type.
(f) Comparison to reference sites (if applicable), guidelines or targets
(g) Discussion of whether data collected addresses the objective(s) or question(s) in the study plan
(h) Quantifiable discussion of program/study pollutant reduction effectiveness.

Where applicable, the Permittee shall prepare, maintain, and implement a QAPP in accordance with SWAMP. All monitoring samples shall be collected and analyzed according to the Program QAPP developed for the purpose of compliance with this Order. SWAMP Quality Assurance Program Plan (2008) is available at:

http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/qapp/qaprp082209.pdf

A formatted Microsoft Word document that includes guidelines and boilerplate language for developing the permit QAPP is available at:

http://www.waterboards.ca.gov/water_issues/programs/swamp/tools.shtml#qa

Water quality data shall be uploaded to the Storm Water Multi-Application Reporting and Tracking System (SMARTS) and must conform to “CEDEN Minimum Data Templates” format. CEDEN Minimum Data Templates are also available at: http://ceden.org/

E.14. PROGRAM EFFECTIVENESS ASSESSMENT AND IMPROVEMENT

E.14.a. Program Effectiveness Assessment and improvement Plan

(i) **Task Description -** The Permittee shall develop and implement a Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. The Program Effectiveness Assessment and Improvement Plan will assist the Permittee to document compliance with permit conditions and to adaptively manage its storm water program and make necessary modifications to the program to improve program effectiveness at reducing pollutants of concern, achieving the MEP standard, and protecting water quality. The Program Effectiveness Assessment and Improvement Plan shall identify the strategy used to gauge the effectiveness of prioritized BMPs and program implementation as a whole. Prioritized BMPs include BMPs implemented based on pollutants of concern. Where pollutants of concern are unidentified, prioritized BMPs are based on common urban pollutants (i.e., sediment, bacteria, trash, nutrients). The annual effectiveness assessments will help identify potential modifications to the program to ensure long-term effectiveness.

(ii) **Implementation Level** - The Program Effectiveness Assessment and Improvement Plan may be modeled upon the most recent version (if applicable) Municipal Storm Water Program Effectiveness Assessment Guidance (CASQA, May 2007) or equivalent.

(a) The Program Effectiveness Assessment and Improvement Plan shall include the following elements, at a minimum as applicable:

1) Identification of overall program goals including pollutants of concern and prioritized BMPs
2) Documentation of the level of implementation of storm water program elements
3) Identification and targeting of target audience(s)
4) Assessment of BMP performance at achieving outcome levels
5) Assessment of pollutant source reductions achieved by individual BMPs
6) Quantification of pollutant loads and pollutant load reductions achieved by the program as a whole
7) MS4 discharge quality, where available, including analysis of the data
8) Receiving water quality data, including analysis of the data
9) Identification of long-term effectiveness assessment, to be implemented beyond the permit term

(b) The Program Effectiveness Assessment and Improvement Plan shall assess BMP and program effectiveness in terms of the following Outcome Levels:

1) Storm water program activities
2) Awareness
3) Behavior
4) Pollutant load reductions
5) MS4 discharge quality (where assessment is supported by MS4 discharge quality data)

6) Receiving water conditions

(c) The Program Effectiveness Assessment and Improvement Plan shall identify assessment methods for privately owned BMPs.

(d) The Program Effectiveness Assessment and Improvement Plan shall identify assessment methods the Permittee will use to quantitatively assess BMP performance at reducing pollutant loads wherever feasible, using the following or equivalent methods:

1) Direct quantitative measurement of pollutant load removal for BMPs that lend themselves to such measurement (e.g., measuring sediment collected through street-sweeping activities);
2) Science-based estimates of pollutant load removal for BMPs where direct measurement of pollutant removal is overly challenging (e.g., removal of heavy metals through a bioswale);
3) Direct quantitative measurement of behaviors that serve as proxies of pollutant removal or reduction (e.g., the percentage of construction sites demonstrated by inspection to be in compliance with permit conditions); or
4) Visual comparison (e.g., using photographs to compare the amount of trash in a creek between one year and the next).

(e) The Program Effectiveness Assessment and Improvement Plan shall ask and answer the following Management Questions for prioritized BMPs for which answers to management questions can be based on quantitative data appropriate to the question being answered.

1) Were prioritized BMPs or group of BMPs implemented in accordance with the permit requirements? The Permittee shall develop quantitative data using the following or equivalent methods:
   a) Confirmation – Documenting whether an activity or task has been completed, expressed as positive or negative outcome (i.e., yes or no)
   b) Tabulation – Simple accounting expressed in absolute (e.g., number of people participating), or relative terms (e.g. percent increase in recycled household hazardous waste)
2) To what extent did prioritized BMPs or group of BMPs change the target audience's behavior? The Permittee shall develop quantitative data using the following or equivalent methods:
   a) Surveys or interviews to discern knowledge, attitudes, awareness, behavior of specific population, etc.
   b) Interviews of site personnel to discern awareness and behavior
   c) Inspections or site visits to directly observe or assess a practice.
3) To what extent did prioritized BMPs or group of BMPs reduce pollutant loads from their sources to the storm drain system?

(f) The Program Effectiveness Assessment and Improvement Plan shall include water quality monitoring data, where available, to answer the following long-term management questions, effectiveness of BMPs and the overall storm water program will be assessed in future permit terms.

1) To what extent did implementation of the BMP, group of BMPs, or storm water program enhance or change the urban runoff and discharge quality?
2) To what extent did implementation of the BMP, group of BMPs, or storm water program enhance or change receiving water quality?
3) Did exceedance(s) of water quality objectives or water quality standards persist notwithstanding implementation of the storm water program?

The Program Effectiveness Assessment and Improvement Plan shall include documentation of the effectiveness of BMPs implemented to reduce the discharge of pollutants to the MS4 to the MEP and protect water quality.

(iii) **Reporting** – By the second year Annual Report complete and submit the Program Effectiveness Assessment and Improvement Plan. The Plan shall include the strategy the Permittee will use to assess the effectiveness of the program, the specific measures the Permittee will use to assess the effectiveness of BMPs and/or groups of BMPs, and how the Permittee will use the information obtained through effectiveness assessment to modify individual BMPs and the program as a whole to increase short and long-term effectiveness. In subsequent Annual Reports, describe implementation of the Program Effectiveness Assessment and Improvement Plan, summarize data obtained through effectiveness assessment measures and the short and long-term progress of the storm water program, and provide an analysis of the data to improve program effectiveness, to achieve the MEP standard, protect water quality, and to document the Permittee's compliance with permit conditions. Permittees that have a Program Effectiveness Assessment and Improvement Plans, or equivalent, approved by the applicable Regional Board, or that have a schedule approved by the applicable Regional Board to develop and implement such a Plan, shall adhere to the Plan and/or schedule approved by the Regional Board unless otherwise directed by the Regional Board. By the fifth year annual report, complete and submit an analysis of the effectiveness of modifications made at improving BMP and/or program effectiveness.

E.14.b. Storm Water Program Modifications

(i) **Task Description** –The Permittee shall modify BMPs and/or the program as a whole to improve compliance with permit conditions and improve program effectiveness at reducing pollutant loads, achieving the MEP standard, and protecting water quality. The Permittee shall use information gained through effectiveness assessment and MS4 discharge and receiving water monitoring to identify priority areas for program improvement. In addition, the Permittee shall identify and make modifications to BMPs, including new BMPs or modification to existing BMPs, to improve effectiveness in each priority area. The Permittee shall consult with the applicable Regional Water Board in setting expectations for the scope, timing, and frequency of BMP modifications.

(ii) **Implementation Level** – Within the fifth year of the effective date of the permit, the Permittee shall identify and summarize BMP and/or program modifications identified in priority program areas. Modifications shall include:

(a) Improving upon BMPs that are underperforming

(b) Continuing and expanding upon BMPs that proved to be effective, including identifying new BMPs or modifications to existing BMPs designed to increase pollutant load reductions;
(c) Discontinuing BMPs that may no longer be productive and replacing with more effective BMPs; and
(d) Shifting priorities to make more effective use of resources

(iii) **Reporting –** By the fifth year Annual Report, complete and submit the list of BMP and/or program modifications, as specified in E.14.c(ii), the Permittee will make for priority program areas, including identification of priority program areas and the schedule the Permittee will follow to complete identified modifications during the next permit term. The modifications shall be aimed at the goal of reducing pollutant loads, achieving the MEP standard and protecting water quality.

E.15. TOTAL MAXIMUM DAILY LOADS COMPLIANCE REQUIREMENTS

E.15.a. The Permittee shall comply with all applicable TMDLs approved pursuant to 40 Code of Federal Regulations section 130.7 that assign a Waste Load Allocation to the Permittee and that have been identified in Attachment G.

E.15.b. WLA, Load Allocations (LA), effluent limitations, implementation requirements, and monitoring requirements are specified in the adopted and approved Regional Water Board Basin Plans and authorizing resolutions which are incorporated herein by reference as enforceable parts of this Order. Applicable Basin Plan amendments and resolutions are identified in Attachment G. Attachment G additionally contains a list of TMDL-specific permit requirements developed by the Regional Water Boards for compliance with the implementation requirements of the relevant TMDLs. These requirements are an enforceable component of this Order. In some cases, dates are given that fall outside the term of this Order. Compliance dates that have already passed are enforceable on the effective date of this Order. Compliance dates that exceed the term of this Order are included for reference, and become enforceable in the event that this Order is administratively extended.

E.15.c. The Regional Water Boards are directed to review, within one year of the effective date of this Order, the TMDL-specific permit requirements contained in Attachment G and to develop or propose revisions, as appropriate, to TMDL-specific permit requirements to the State Water Board after consultation with the Permittees and State Water Board staff. Any proposed revisions by the Regional Water Boards shall be supported by an explanation of how the proposed TMDL-specific permit requirements are consistent with the assumptions and requirements of applicable WLAs and with the goals of the TMDL. Where a TMDL is limited to a single constituent within a single reach of the watershed, the Regional Water Board Executive Officer may require additional monitoring, per Water Code § 13383. The State Water Board will incorporate any necessary revisions through a reopener. The State Water Board may additionally revise this Order through a reopener to incorporate any modifications or revisions to the TMDLs in Attachment G, or to incorporate any new TMDLs adopted during the term of this Order that assign a WLA to a Regulated Small MS4 or that identify a Regulated Small MS4 as a responsible

party. In revising Attachment G, the State Water Board will allow adequate notice and public review.

E.15.d. The Permittee shall complete and report the status of their implementation of the specific TMDL implementation requirements that have been incorporated into the permit with each Annual Report via SMARTS. Reporting on TMDL implementation shall include the following information:

(i) A description of BMPs implemented, including types, number, and locations
(ii) An assessment of the effectiveness of implemented BMPs in progressing towards attainment of wasteload allocations within the TMDLs' specified timeframes
(iii) All monitoring data, including a statistical analysis of the data to assess progress towards attainment of wasteload allocations within the TMDLs' specified timeframes
(iv) Based on results of the effectiveness assessment and monitoring, a description of the additional BMPs that will be implemented to attain wasteload allocations within the TMDLs specified timeframes

E.15.e. The Permittee shall comply with implementation requirements specified in Category 4b demonstrations associated with Clean Water Act Sections 303d, 306b, and 314 Integrated Reporting and Listing Decisions. Implementation requirements described in Category 4b demonstrations are effective upon Regional Water Board approval of that region's Integrated Reporting and Listing Decisions and associated Category 4b demonstrations. The most recent Integrated Reporting and Listing Decisions and associated Category 4b demonstrations are available at http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2010.shtml.

E.16. ANNUAL REPORTING PROGRAM

E.16.a. The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities for each program element and certify compliance with all requirements of this permit. If a Permittee is unable to certify compliance with a requirement, the Permittee must submit in SMARTS the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance.

E.16.b. Permittees shall complete and retain all Annual Report information on the previous fiscal year beginning July 1 and ending June 30. The Annual Reporting requirements are set forth in Provisions E. The Permittee shall retain documentation as necessary to support their Annual Report. The Permittee shall make this supporting information available during normal business hours, unless agreed to by the applicable Regional Water Board's Executive Officer.

E.16.c. The Permittee shall submit when requested by the Executive Officer of the applicable Regional Water Board a detailed written online annual report or in-

person presentation of the annual report that addresses the activities described in Provision E. The detailed Annual Report must clearly refer to the permit requirements and describe in quantifiable terms, the status of activities undertaken to comply with each requirement.

E.16.d. Permittees involved in regional programs may coordinate with the members to identify reporting responsibility. The one report submitted on behalf of Permittees involved in a regional program must include a summary of the past year activities for each program element and certification of compliance with all requirements of this Order for each of the Permittees in the regional program.

F. NON – TRADITIONAL SMALL MS4 PERMITTEE PROVISIONS

F.1. Non-Traditional Small MS4 Categories

The Non-Traditional Small MS4s identified in Attachment B or by a Regional Water Board Executive Officer shall comply with the specific provisions in this Section. For military installations, this permit applies to areas, where the activities and population density resemble that of a traditional small MS4, as defined in the permit boundary map in Section A.2.b.(3). For Department of Corrections and Rehabilitation Permittees, this permit applies to facilities that are in active operation (i.e., does not apply to closed facilities lacking management oversight).

F.2. Security Concerns

Department of Defense, Department of Corrections and Rehabilitation Permittees, ports and transportation agencies are exempt from Annual Reporting of any provision in this section that could pose a security risk and/or compromise facility security.

F.3. Maximize Efficiency

Permittees may incorporate the required storm water provisions into already existing programs and leverage existing staff to implement BMPs during its day to day business and operations.

F.4. Equivalent or Existing Document

A Permittee may utilize an equivalent or existing document such as a Standard Operations and Procedures manual, Operation and Maintenance Plan, or Spill Response Plan if that document includes the necessary information required to comply with the provisions of this section.

F.5. PROVISIONS

F.5.a. PROGRAM MANAGEMENT ELEMENT

F.5.a.1. Legal Authority

(i) **Task Description** - Permittee shall have adequate legal authority to meet the requirements of this Order

(ii) **Implementation Level** – Within the second year of the effective date of the permit, the Permittee shall review, revise or adopt new relevant policies, contractual provisions, base orders, resolutions or other regulatory mechanisms, to the extent allowable under state or local law, to ensure it has at a minimum the legal authority to:

(a) Effectively prohibit non-storm water discharges through the MS4. Exceptions to this prohibition are NPDES-permitted discharges of non-storm water and non-storm water discharges from B.3 that are considered non-significant contributors of pollutants. Where the non-storm water discharge is to a segment of an MS4 that discharges directly to an ASBS, exceptions to the non-storm water prohibition are specified in Attachment C.

(b) Detect and eliminate illicit discharges and illegal connections to the MS4. Illicit connections include pipes, drains, open channels, or other conveyances that have the potential to allow an illicit discharge to enter the MS4. Illicit discharges include all non-storm water discharges not otherwise authorized in this Order, including, but not limited to discharges from mobile cleaning and pressure washing operations.

(c) Respond to spills, and prohibit dumping or disposal of materials other than storm water into the MS4.

(d) Require vendors, contractors and operators of commercial facilities to minimize the discharge of pollutants to the MS4 through the installation, implementation, and maintenance of BMPs consistent with the CASQA Best Management Practice Handbooks or equivalent.

(e) Ensure construction site or industrial facility operators provide a Waste Discharge Identification Number for coverage under the CGP and IGP and comply with the appropriate permit.

(f) Review designs and proposals for new development and redevelopment to determine whether adequate BMPs will be installed, implemented, and maintained during construction and after final stabilization (post-construction).

(g) Promptly cease and desist discharges and/or cleanup and abate a discharge, including the ability to:

1) Effectively require the discharger to abate and clean up their discharge, spill, or pollutant release within 72 hours of notification;

2) Require abatement, within 30 days of notification, for uncontrolled sources of pollutants that could pose an environmental threat;

3) Perform the cleanup and abatement work and bill the responsible party, if necessary;
4) Provide the option to order the cessation of activities until such problems are adequately addressed if a situation persists where pollutant-causing sources or activities are not abated;
5) Require a new timeframe and notify the appropriate Regional Water Board when all parties agree that clean-up activities cannot be completed within the original timeframe and notify the appropriate Regional Water Board in writing within five business days of the determination that the timeframe requires revision.

(iii) **Reporting** – All Permittees shall submit by the second year online Annual Report, a statement signed by both the Permittee's legal counsel and an authorized signatory certifying the Permittee has adequate legal authority to comply with all Order requirements.

F.5.b. EDUCATION AND OUTREACH PROGRAM

F.5.b.1. Compliance Participation Options

All Permittees shall comply with the requirements in this Section by participating in one or more of the following:

(a) Contributing to a countywide storm water program, as determined appropriate by the Permittee members, so that the countywide storm water program conducts education and outreach on behalf of its members; or
(b) Contributing to a regional education and outreach collaborative effort (a regional education and outreach collaborative effort occurs when all or a majority of the Permittees collaborate to conduct regional education and outreach. Regional education and outreach collaboration includes Permittees defining a uniform and consistent message, deciding how best to communicate the message, and how to facilitate behavioral changes. Then collaboratively apply what is learned through local jurisdiction groups, pooling resources and skills.); or
(c) Fulfilling education and outreach requirements within their jurisdictional boundaries on their own. Some level of coordination of education and outreach efforts with an adjacent Phase I MS4 Permittee is recommended/anticipated for watershed/region-wide consistency.; or
(d) A combination of the previous options, so that all requirements are fulfilled.

Reporting – By the first year online Annual Report, the Permittee shall submit information indicating which compliance participation option it will use to comply with the public education and outreach requirements in this Section. For each public education and outreach requirement in this Section that the Permittee will comply with through contribution to a countywide storm water program or regional education and outreach collaborative effort, the Permittee shall include in the first year online Annual Report documentation, such as a written agreement, letter or similar document, which confirms the collaboration with other MS4s.

F.5.b.2. Public Education and Outreach

The public for a Non-traditional MS4 Permittee is considered the following, if applicable:

- Faculty
- Inmates
- Military personnel
- Residents
- Students
- Staff
- Visitors

(i) **Task Description –** Within the second year of the effective date of the permit, the Permittee shall develop and implement a comprehensive storm water public education and outreach program. The public education and outreach program shall be designed to inform the public about storm water pollution and steps that can be taken to reduce storm water pollution. The Public Education and Outreach Program shall measurably increase the public's knowledge regarding the storm drain system, impacts of urban runoff and illicit discharges on receiving waters, and potential BMP solutions for the target audiences.

(ii) **Implementation Level** –The Permittee shall, at a minimum:

(a) Develop and implement a public education strategy that establishes education tasks based on water quality problems, target audiences, and anticipated task effectiveness. The strategy must include identification of who is responsible for implementing specific tasks and a schedule for task implementation. The strategy must demonstrate how specific high priority storm water quality issues in their jurisdiction or local pollutants of concern are addressed.

(b) Implement BMPs that gauge level of awareness in target audiences and effectiveness of education tasks.

(c) Develop and convey a specific storm water message that focuses on the following:
   1) Local pollutants of concern
   2) Target audience
   3) Regional water quality issues

(d) Develop and disseminate appropriate educational materials to target audiences and translate into applicable languages when appropriate (e.g. the materials can utilize various media such as printed materials, billboard and mass transit advertisements, signage at select locations, stenciling at storm drain inlets, radio advertisements, television advertisements, and websites);

(e) Distribute educational materials, using whichever methods and procedures determined appropriate during development of the public education strategy;

(f) Develop and convey messages to explain the benefits of water-efficient landscaping (if appropriate);

(g) Utilize information from storm water-friendly landscaping[30] programs (if appropriate);

[30] For example, Surfrider's Ocean Friendly Garden Program (http://www.surfrider.org/programs/entry/ocean-friendly-gardens)

(h) Develop and convey messages specific to reducing illicit discharges with information about how the public can report incidents to the appropriate authorities;
(i) Develop and convey of messages specific to proper application of pesticides, herbicides, and fertilizers;
(j) Within the Permittee's jurisdiction, provide independent, parochial and public schools with materials to effectively educate school-age children, if applicable, about storm water and how they can help to protect water quality habitat in their local watersheds. The Permittee is encouraged to use environmental and place-based, experiential learning materials that are integrated into school curricula and school facility management[31]. In the case that a local program does not exist, the Permittee may use California's Education and Environment Initiative Curriculum[32] or equivalent;
(k) Develop (or coordinate with existing effective programs) and convey messages specific to reducing discharges from pressure washing operations and landscape irrigation;
(l) If applicable, utilize storm water-friendly education for organized car wash participants and provide information pertaining to car wash discharge reduction. The Permittee may use the Sacramento Stormwater Quality Partnership's River Friendly Carwash Program[33], or equivalent, for guidance;
(m) The Permittee shall conduct focused education in identified illicit discharge flow areas based on identified illicit discharge(s).

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance directions.

F.5.b.3. Staff and Site Operator Training and Education: Illicit Discharge Detection and Elimination Training

(i) **Task Description** – Permittees shall develop and implement a training program for all Permittee staff, who, as part of their normal job responsibilities, may be notified of, come into contact with, or otherwise observe an illicit discharge or illegal connection to the storm drain system.

(ii) **Implementation Level** – Within the third year of the effective date of the permit, the Permittee shall develop the training program. The training program shall include at a minimum:

(a) Identification of an illicit discharge or illegal connection;
(b) Proper procedures for reporting and responding to the illicit discharge or illegal connection;
(c) Follow-up training provided as needed to address changes in procedures, techniques, or staffing;

[31] For example, Splash (*www.sacsplash.org/*),Effie Yeaw Nature Center (www.sacnature.net) or Yolo Basin (www.yolobasin.org)
[32] http://www.californiaeei.org/
[33] http://www.beriverfriendly.net/riverfriendlycarwashing/

(d) Annual assessment of their trained staff's knowledge of illicit discharge response and shall provide refresher training as needed;

(e) Training of new staff who, as part of their normal job responsibilities may be notified of, come into contact with, or otherwise observe an illicit discharge or illegal connection;

(f) Contact information, including the procedure for reporting an illicit discharge, shall be included in each of the Permittee's fleet vehicles that are used by field staff.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance directions.

F.5.b.4. Staff Pollution Prevention and Good Housekeeping

The Permittee shall train employees on how to incorporate pollution prevention/good housekeeping techniques into Permittee operations.

(i) **Task Description** – The Permittee shall provide a biennial training program for appropriate employees involved in implementing pollution prevention and good housekeeping practices in the Pollution Prevention/Good Housekeeping for Permittee Operations sections of this permit. The Permittee shall determine the need for interim training during alternate years when training is not conducted, through an evaluation of employee Pollution Prevention/Good Housekeeping knowledge.

(ii) **Implementation Level** – The biennial training program shall include the following:

(a) General storm water education component, any new technologies, operations, or responsibilities that arise during the year and the permit requirements which apply to the staff being trained. Clear guidance on appropriate storm water BMPs to use at Permittee owned facilities and during typical Operation and Maintenance activities.

(b) An assessment of trained staff's knowledge of pollution prevention and good housekeeping and shall revise the training as needed.

(c) A requirement that any contractors hired by the Permittee to perform Operation and Maintenance activities shall be contractually required to comply with all of the storm water BMPs, good housekeeping practices, and standard operating procedures described above.

(d) The Permittee shall provide oversight of contractor activities to ensure that contractors are using appropriate BMPs, good housekeeping practices and following standard operating procedures.

(iii) **Reporting –** The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of

this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance directions.

F.5.c. PUBLIC INVOLVEMENT AND PARTICIPATION PROGRAM

(i) **Task Description -** Within the third year of the effective date of the permit, the Permittee shall involve its public in the development and implementation of activities related to the program. The public participation and involvement program shall encourage volunteerism, public comment and input on policy, and activism in the community.

(ii) **Implementation Level** – The Permittee shall, at a minimum:

(a) Ensure that high priority storm drain inlets include a labeled, stenciled or other effective method (e.g., clearly visible sign strategically placed in area of high pedestrian activity) of communicating a storm water awareness message such as “drains to creek” or “only rain in the drain”.
(b) Integrate storm water awareness messages and information on a publicly accessible website

(iii) **Reporting –** The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance

F.5.d. ILLICIT DISCHARGE DETECTION AND ELIMINATION PROGRAM

The Permittee shall develop an Illicit Discharge Detection and Elimination program to detect, investigate, and eliminate illicit discharges, including illegal dumping, into its system or coordinate with an adjacent Phase I MS4 Permittees existing program. The existing program, at a minimum, must include the provisions in this section.

F.5.d.1 Outfall Mapping

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall maintain an up-to-date and accurate outfall map. The map may be in hard copy and/or electronic form or within a geographic information system (GIS). The development of the outfall map shall include a visual outfall inventory involving a site visit to each outfall. It is recommended the Permittee coordinate with an adjacent Phase I MS4 Permittee to collect outfall data for which they may discharge to. Renewal Permittees that have an existing and up-to-date outfall map that includes the minimum requirements specified in Section F.5.d.1.(ii)(a-b) are not required to re-create the outfall map. This does not exempt renewal Permittees with an existing outfall map from conducting the field sampling specified in Section F.5.d.2.

(ii) **Implementation Level** - The outfall map shall at a minimum show:

(a) The location of all outfalls and drainage areas within the urbanized area, contributing to those outfalls that are operated by the Permittee, and that directly discharge within the Permittee's jurisdiction to a receiving water. Each mapped outfall shall be given an individual alphanumeric identifier, which shall be noted on the map. Photographs shall be taken or an electronic database shall be utilized to provide baseline information and track operation and maintenance needs over time.

(b) The location (and name, where known to the Permittee) of all water bodies receiving direct discharges from those outfall pipes.

Submerged outfalls or other outfalls that may pose a threat to public safety are not required to be inventoried.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance.

F.5.d.2. Field Sampling to Detect Illicit Discharges

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall conduct field sampling to detect potential illicit discharges while conducting the outfall inventory specified in Section F.5.d. Outfall Inventory. If while conducting the outfall inventory specified in Section F.5.d., an outfall is flowing or ponding and it has been more than 72 hours since the last rain event, then the Permittee shall sample the discharge.

(ii) **Implementation Level** – If an outfall is flowing or ponding and it has been more than 72 hours since the last rain event, the Permittee shall:

(a) Conduct monitoring for the following indicator parameters identified in Table 1. Field Sampling Indicator Parameters (following page) to help determine the source and identification of the discharge. Alternatively, the Permittee may select parameters based on local knowledge of pollutants of concern in lieu of sampling for the parameters listed in Table 1. Modifications and associated justifications shall be identified within SMARTS prior to conducting field sampling as specified in Section F.5.d.2.

Table 1. Field Sampling Indicator Parameters

Indicator Parameters Used to Detect Illicit Discharges					
Parameter	Discharge Types It Can Detect				
	Sewage	Washwater	Tap Water	Industrial or Commercial Liquid Wastes	Laboratory/Analytical Challenges
Ammonia	●	⦿	○	⦿	Can change into other nitrogen forms as the flow travels to the outfall
Color	⦿	⦿	○	⦿	
Conductivity	⦿	⦿	○	⦿	Ineffective in saline waters
Detergents – Surfactants	●	●	○	⦿	Reagent is a hazardous waste
Fluoride*	○	○	●	⦿	Reagent is a hazardous waste Exception for communities that do not fluoridate their tap water
Hardness	⦿	⦿	⦿	⦿	
pH	○	⦿	○	⦿	
Potassium	⦿	○	○	●	May need to use two separate analytical techniques, depending on the concentration
Turbidity	⦿	⦿	○	⦿	

● Can almost always (>80% of samples) distinguish this discharge from clean flow types (e.g., tap water or natural water). For tap water, can distinguish from natural water.
⦿ Can sometimes (>50% of samples) distinguish this discharge from clean flow types depending on regional characteristics, or can be helpful in combination with another parameter
○ Poor indicator. Cannot reliably detect illicit discharges, or cannot detect tap water
N/A: Data are not available to assess the utility of this parameter for this purpose.
Data sources: Pitt (this study)
*Fluoride is a poor indicator when used as a single parameter, but when combined with additional parameters (such as detergents, ammonia and potassium), it can almost always distinguish between sewage and wash water.

(c) Verify that indicator parameters with the following action level concentrations specified in Table 2. Action Level Concentrations for Indicator Parameters are not exceeded. Alternatively, the Permittee may tailor Table 2 to align with parameters based on local knowledge of pollutants of concern. Modifications and associated justifications shall be identified within SMARTS prior to conducting field sampling as specified in Section F.5.d.2.:

Table 2. Action Level Concentrations for Indicator Parameters

Indicator Parameter	Action Level Concentration
Ammonia	>= 50 mg/L
Color	>= 500 units
Conductivity	>= 2,000 µS/cm
Hardness	<= 10 mg/L as CaCO3 or >= 2,000 mg/L as CaCO3
pH	<= 5 or >=9
Potassium	>= 20 mg/L
Turbidity	>= 1,000 NTU

(d) Conduct follow up investigations per Section F.5.d.3. if the action level concentrations are exceeded.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance

F.5.d.3. Illicit Discharge Detection and Elimination Source Investigations and Corrective Actions

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall develop written procedures for conducting investigations into the source of all non-storm water discharges suspected to be illicit discharges, including approaches to requiring such discharges to be eliminated, and procedures to implement corrective actions (e.g., BMPs). These procedures shall be included as part of the Illicit Discharge Detection and Elimination program.

(ii) **Implementation Level -** At a minimum, the Permittee shall conduct an investigation(s) to identify and locate the source of any suspected illicit discharge within 72 hours of becoming aware of the suspected illicit discharge. For investigations that require more than 72 hours, the Permittee shall identify the actions being taken to identify and locate the source of the suspected illicit discharge. The Permittee shall prioritize investigations of suspected sanitary sewage and/or significant contributors over investigations of non-storm water discharges suspected of being cooling water, wash water, or natural flows.

(a) Report immediately the occurrence of any dry weather flows believed to be an immediate threat to human health or the environment to local Health Department.

(b) Determine and document through its investigations the source of all non-storm water discharges. If the source of the non-storm water discharge is found to be a discharge authorized under this permit, or authorized under another NPDES permit, no further action is required.

(c) Corrective Action to Eliminate Illicit Discharge – Once the source of the illicit discharge has been determined, the Permittee shall immediately notify the responsible party of the problem.

(d) Report immediately to the owners/operators of the downstream MS4 a non-storm water discharge suspected of being sanitary sewage and/or significantly contaminated.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of

this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance

F.5.e. CONSTRUCTION SITE RUNOFF CONTROL PROGRAM

The Permittee shall develop, implement, and enforce a program to prevent Construction site discharges of pollutants and impacts on beneficial uses of receiving waters. The program shall include the development of contract language ensuring the Permittee's in-house construction operators or outside contractors comply with the CGP.

(i) **Task Description –** Within the first year of the effective date of the permit, each Permittee shall develop and implement contract language ensuring all outside contractors comply with the CGP and implement appropriate BMPs. Contract language shall apply to all projects that result in a total land disturbance of either one acre or more or that result in a total land disturbance of less than one acre if part of a larger common plan or development or sale.

(ii) **Implementation Level** – The Permittee shall include CGP compliance requirements in construction contract language for all projects one acre or more or that result in a total land disturbance of less than one acre if part of a larger common plan or development or sale.

(iii) **Reporting –** The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance.

F.5.f. POLLUTION PREVENTION/GOOD HOUSEKEEPING FOR PERMITTEE OPERATIONS PROGRAM

The Permittee shall develop and implement a program to prevent or reduce the amount of pollutant runoff from Permittee operations. The Permittee shall train employees on how to incorporate pollution prevention/good housekeeping techniques into Permittee operations. Permittee shall implement appropriate BMPs for preventing or reducing the amount of storm water pollution generated by Permittee operations.

F.5.f.1. Inventory of Permittee-Owned or Operated Facilities

(i) **Task Description** - Prepare an inventory of Permittee-owned or operated facilities within their jurisdiction that are a threat to water quality, and are not covered by another storm water General Permit.

(ii) **Implementation Level** - Within the second year of the effective date of the permit, the Permittee shall develop and maintain an inventory that shall include facilities that may impact storm water.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance.

F.5.f.2. Map of Permittee-Owned or Operated Facilities

(i) **Task Description –** Within the second year of the effective date of the permit, prepare and submit a map of the urban area covered by the MS4 permit and identify where the Permittee-owned or operated facilities are located.

(ii) **Implementation Level** - The Permittee shall complete and have available a map that identifies the storm water drainage system corresponding to each of the facilities as well as the receiving waters to which these facilities discharge. The map shall also show the facility and the manager of each facility, including contact information. Historic storm water collection facilities, conveyances and drainages located at historic places that are being operated for public interpretation and education shall be noted on this map so that the Regional Water Board can differentiate between modern and historic during site reviews or audits.

(iii) **Reporting** - The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance.

F.5.f.3. Facility Assessment

(i) **Task Description** –Within the third year of the effective date of the permit, conduct an inspection and assessment of pollutant discharge potential and pollutant hotspots.

(ii) **Implementation Levels** - The Permittee shall conduct an annual review and assessment of all Permittee-owned or operated facilities to determine their potential to impact surface waters. The assessment shall include the following:

(a) Identification of pollutant hotspots based on the assessment, the Permittee shall identify as pollutant hotspots those facilities that have a high potential to generate storm water and non-storm water pollutants. Among the factors to be considered are the type and volume of pollutants stored at the site, the presence of improperly stored materials, activities that should not be performed outside (e.g., changing automotive fluids, vehicle washing), proximity to water bodies, poor housekeeping practices, and the discharge of pollutant(s) of concern to receiving water(s). Pollutant hotspots shall include, at a minimum, the Permittee's maintenance yards, hazardous waste facilities, fuel storage

locations, and any other facilities at which chemicals or other materials have a high potential to be discharged in storm water.

(b) Documentation of the assessment procedures and results. The Permittee shall document the procedures it uses for conducting the assessment along with a copy of any site evaluation checklists used to conduct the assessment.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance.

F.5.f.4. Storm Water Pollution Prevention Plans

(i) **Task Description** – the Permittee shall develop and implement SWPPPs for pollutant hotspots at high priority sites. If a Permittee has an existing or equivalent document such as Hazardous Materials Business Plan or Spill Prevention Plan, the Permittee is not required to develop a SWPPP if that document includes the necessary information required within a SWPPP.

(ii) **Implementation Level** – Within the fourth year of the effective date of this permit, the Permittee shall implement the following:

(a) The Permittee shall develop and implement a site-specific SWPPP that identifies a set of storm water BMPs to be installed, implemented, and maintained to minimize the discharge of pollutants in storm water.

(b) The SWPPP(s) shall be kept on-site at each of the Permittee-owned or operated facilities' offices for which it was completed. The SWPPP shall be updated as necessary.

(c) At a minimum the SWPPP will address the following:

1) Facility specific information (location, owner, address, etc.)
2) Purpose of the document
3) Key staff/contacts at the facility
4) Site map with drainage identified
5) Identification of significant materials that are handled and stored at the facility that may be exposed to storm water
6) Description of potential pollutant sources
7) BMPs employed at facility
8) Spill control and cleanup – response to spills

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment

and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance.

F.5.f.5. Inspections, Visual Monitoring and Remedial Action

(i) **Task Description** –Within the fifth year of the effective date of the permit, the Permittee shall conduct regular inspections of Permittee-owned and operated facilities not covered by another storm water General Permit. The Permittee may incorporate storm water inspections into existing, routine facility inspections.

(ii) **Implementation Level** – The Permittee shall conduct inspections as follows:

(a) Quarterly hotspot visual inspections – Perform quarterly visual inspections in accordance with the developed standing operating procedures of all hotspot Permittee-owned or operated facilities to ensure materials and equipment are clean and orderly, to minimize the potential for pollutant discharge, and to ensure implementation of BMPs. The Permittee shall look for evidence of spills and immediately clean them up to prevent contact with precipitation or runoff. The quarterly inspections shall be tracked in a log for every facility, and records kept with the SWPPP. The inspection report shall also include any identified deficiencies and the corrective actions taken to correct the deficiencies.

(b) Quarterly Hotspot comprehensive inspections – At least once per quarter, a comprehensive inspection of hotspot facilities, including all storm water BMPs, shall be performed, with specific attention paid to the following, but not limited to waste storage areas, dumpsters, vehicle and equipment maintenance/fueling areas, material handling areas, and similar potential pollutant-generating areas. The quarterly inspection results shall be documented and records kept with the SWPPP. This inspection shall be performed in accordance with the developed standard operating procedures. The inspection report shall also include any identified deficiencies and the corrective actions taken to correct deficiencies.

(c) Quarterly Hotspot visual observation of storm water and non-storm water discharges – At least once per quarter, visually observe discharge location from hotspot facilities. Where discharges are observed identify any observed problems (e.g., color, foam, sheen, turbidity) associated with pollutant sources or BMPs shall be remedied within seven days or before the next storm event, whichever is sooner. Visual observations shall be documented, and records kept with the SWPPP. This inspection shall be done in accordance with the developed standard operating procedures. The inspection report shall also include any identified deficiencies and the corrective actions taken to correct the deficiencies.

(d) Non-Hotspot Inspection – At a minimum, inspect each inventoried facility that is not a hotspot, once per permit term. The inspection shall investigate and assess each of the items identified above.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the

program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance.

F.5.f.6. Storm Drain System Assessment and Prioritization

(i) **Task Description** –Within the second year of the effective date of the permit, the Permittee shall develop and implement procedures to assess and prioritize the MS4 storm drain system, including but not limited to catch basins, pipe and pump infrastructure, above-ground conveyances, including receiving waterbodies within the Permittee's urbanized area and detention basins.

(ii) **Implementation Level** – The Permittee shall:

Assess/prioritize storm drain system facilities for cleanout– Assign a priority to all storm drain system facilities within the Permittee's urbanized areas based on accumulation of sediment, trash and/or debris. In particular, assign high priority to catch basins meeting the following criteria:

1) Catch basins known to accumulate a significant amount of sediment, trash, and/or debris;
2) Catch basins collecting large volumes of runoff;
3) Catch basin collecting runoff from area that do not receive regular sweet sweeping;
4) Catch basins collecting runoff from drainage areas with exposed or disturbed soil; and
5) Catch basins that receive citizen complaints/reports.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance.

F.5.f.7. Maintenance of Storm Drain System

(i) **Task Description** –The Permittee shall begin maintenance of all high priority storm drain systems at least annually prior to the rainy season.

(ii) **Implementation Level** – Within the third year of the effective date of the permit, the Permittee shall begin a maintenance program of high priority storm drain systems that, at a minimum includes:

(a) Storm drain systems inspection – Based on the priorities assigned above, in Section F.5.f.6, develop a strategy to inspect storm drain systems within the Permittee's jurisdiction. At a minimum, inspect all catch basins of high priority systems annually, prior to the rainy season.

(b) Storm drain cleaning – Develop and implement a schedule to clean high priority catch basins and other systems. Cleaning frequencies shall be based on priority areas, with higher priority areas receiving more frequent maintenance.

(c) Maintenance of surface drainage structures –Visually monitor all Permittee-owned open channels, detention basins, and other drainage structures for debris at least once per year and identify and prioritize problem areas. At a minimum, removal of trash and debris from open channels and other drainage structures shall occur annually.

(d) Disposal of waste materials - Develop a procedure to dewater and dispose of materials extracted from catch basins. This procedure shall ensure that water removed during the catch basin cleaning process and waste material will not reenter the MS4.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance.

F.5.f.8. Permittee Operations and Maintenance Activities (O&M)

(i) **Task Description –**The Permittee shall assess their O&M activities for potential to discharge pollutants in storm water and inspect all BMPs on a quarterly basis.

(ii) **Implementation Level** - Within the third year of the effective date of the permit, the Permittee shall:

(a) Develop and implement O&M activity assessment. The O&M activities assessment shall include, but not be limited to, the potential to discharge pollutants in storm water.

(b) Identify all materials that could be discharged from each of these O&M activities.

(c) Develop and implement a set of BMPs that, when applied during Permittee O&M activities, will reduce the discharge of pollutants in storm water. The Permittee shall use the CASQA Municipal Handbook or equivalent.

(d) Evaluate annually all BMPs implemented during O&M activities.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm

water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance.

F.5.f.9. Pesticide, Herbicide, and Fertilizer Application and New Landscape Design and Maintenance Management

(i) **Task Description** –The Permittee shall implement a program which focuses on pollution prevention, source control BMPs, and landscape design and maintenance to reduce the amount of pesticides, herbicides and fertilizers used during their Permittee operations and activities. The Permittee shall implement the landscape design and maintenance on new or decorative landscapes.

(ii) **Implementation Tasks** – Within the second year of the effective date of the permit, the Permittee shall implement the following:

(a) Evaluate pesticides, herbicides and fertilizers used and application activities performed to identify pollution prevention and source control opportunities.

(b) Implement practices that reduce the discharge of pesticides, herbicides and fertilizers. At a minimum the Permittee shall do the following, but not limited to:

1) Educate applicators and distributors of storm water issues.

2) Implement integrated pest management measures that rely on non-chemical solutions, including:

a) Use of native and climate appropriate plants (reduces water usage and fertilization) for decorative landscape applications
b) Keeping clippings and leaves away from waterways and out of the street using mulching, composting, or landfilling
c) Preventing application of pesticides and fertilizers when two or more consecutive days with greater than 50% chance of rainfall are predicted by NOAA[34]
d) Limiting or replacing herbicide and pesticide use (e.g., conducting manual weed and insect removal)
e) Limiting or eliminating the use of fertilizers, including prohibiting application within five feet of pavement, 25 feet of a storm drain inlet, or 50 feet of a water body
f) Reducing mowing of grass to allow for greater pollutant removal, but not jeopardizing public safety

3) Collect and properly dispose of unused pesticides, herbicides, and fertilizers.

4) Minimize irrigation run-off.

(iii) **Reporting** - The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm

[34] www.srh.noaa.gov/forecast

water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance.

F.5.g. POST CONSTRUCTION STORM WATER MANAGEMENT PROGRAM

Permittees shall regulate development to comply with the following Sections:

- F.5.g.1. Site Design Measures
- F.5.g.2. Low Impact Development Design Standards
- F.5.g.3. Alternative Post-Construction Storm Water Management Program
- F.5.g.4. Operation and Maintenance of Post Construction Storm Water Management Measures

Non-traditional Permittees with Regional Water Board approved post-construction storm water management requirements based on a watershed process approach, as described in Section E.12.j. Post-Construction Storm Water Management Requirements Based on Assessment and Maintenance of Watershed Processes, shall implement those post-construction requirements in lieu of Section F.5.g. Post Construction Storm Water Management Program.

F.5.g.1. Site Design Measures

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall require implementation of site design measures for all projects that create and/or replace (including projects with no net increase in impervious footprint) between 2,500 square feet and 5,000 square feet of impervious surface, including detached single family homes that are not part of a larger plan of development.

(ii) **Implementation Level** - Projects shall implement one or more of the following site design measures to reduce project site runoff:

(a) Stream Setbacks and Buffers – a vegetated area including trees, shrubs, and herbaceous vegetation, that exists or is established to protect a stream system, lake reservoir, or coastal estuarine area;
(b) Soil Quality Improvement and Maintenance - improvement and maintenance soil through soil amendments and creation of microbial community;
(c) Tree planting and preservation – planting and preservation of healthy, established trees that include both evergreens and deciduous, as applicable;
(d) Rooftop and Impervious Area Disconnection - rerouting of rooftop drainage pipes to drain rainwater to rain barrels, cisterns, or permeable areas instead of the storm sewer;
(e) Porous Pavement - pavement that allows runoff to pass through it, thereby reducing the runoff from a site and surrounding areas and filtering pollutants;
(f) Green Roofs – a vegetative layer grown on a roof (rooftop garden);
(g) Vegetated Swales - a vegetated, open-channel management practice designed specifically to treat and attenuate storm water runoff;
(h) Rain Barrels and Cisterns - system that collects and stores storm water runoff from a roof or other impervious surface.

Project proponents shall use the State Water Board SMARTS Post-Construction Calculator[35], or equivalent to quantify the runoff reduction resulting from implementation of site design measures.

(iii) **Reporting** - The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance.

F.5.g.2. Low Impact Development (LID) Design Standards

(i) **Task Description** – Within the second year of the effective date of the permit, the Permittee shall implement standards to effectively reduce runoff and pollutants associated with runoff from development projects.

(ii) **Implementation Level** - The Permittee shall regulate all development projects that create and/or replace 5,000 square feet or more of impervious surface (Regulated Projects). The Permittee shall require these Regulated Projects to implement measures for site design, source control, runoff reduction, storm water treatment and baseline hydromodification management as defined in this Order.

Regulated Projects do not include:

(a) Interior remodels;
(b) Routine maintenance or repair such as: exterior wall surface replacement, roof replacement or pavement resurfacing within the existing footprint.

Regulated Projects include development projects. Development includes new and redevelopment projects on public or private land that fall under the planning and permitting authority of a Permittee. 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. The following (a-c) describe specific Regulated Project requirements for redevelopment and road projects:

(a) Where a redevelopment project results in an increase of more than 50 percent of the impervious surface of a previously existing development, runoff from the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included to the extent feasible.

(b) Where a redevelopment project results in an increase of less than 50 percent of the impervious surface of a previously existing development, only runoff from the new and/or replaced impervious surface of the project must be included.

[35] The State Water Board SMARTS Post-Construction Calculator can be found at: https://smarts.waterboards.ca.gov/smarts/faces/SwSmartsLogin.jsp

(c) Road Projects - Any of the following types of road projects that create 5,000 square feet or more of newly constructed contiguous impervious surface and that are public road projects and/or fall under the building and planning authority of a Permittee shall comply with Low Impact Development Standards except that treatment of runoff of the 85th percentile 24-hour storm runoff event) that cannot be infiltrated onsite shall follow U.S. EPA guidance regarding green infrastructure to the extent feasible. Types of projects include:

(1) Construction of new streets or roads, including sidewalks and bicycle lanes built as part of the new streets or roads which create 5,000 square feet or more of impervious surface.

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

a) Where the addition of traffic lanes results in an alteration of more than 50 percent of the impervious surface (5,000 square feet or more) of an existing street or road, runoff from the entire project, consisting of all existing, new, and/or replaced impervious surfaces, must be included in the treatment system design.

b) Where the addition of traffic lanes results in an alteration of less than 50 percent (but 5,000 square feet or more) of the impervious surface of an existing street or road, only the runoff equivalent from new and/or replaced impervious surface of the project must be included in the treatment system design.

(3) Specific exclusions are:

a) Sidewalks built as part of new streets or roads and built to direct storm water runoff to adjacent vegetated areas.

b) Bicycle lanes that are built as part of new streets or roads that direct storm water runoff to adjacent vegetated areas.

c) Impervious trails built to direct storm water runoff to adjacent vegetated areas, or other non-erodible permeable areas, preferably away from creeks or towards the outboard side of levees.

(d) Sidewalks, bicycle lanes, or trails constructed with permeable surfaces.

Effective Date for Applicability of Low Impact Development Runoff Standards to Regulated Projects: By the second year of the effective date of the permit, the Permittee shall require these Post-Construction Standards be applied on applicable new and redevelopment Regulated Projects. These include Regulated Projects that have not been deemed complete for processing, Regulated Projects without vesting tentative maps that have not requested and received an extension of previously granted approvals, and Regulated Projects that have received Project Planning Guide funding. Discretionary projects that have been deemed complete prior to the second year of the effective date of this permit are not subject to the Post-Construction Standards herein. For the Permittee's Regulated Projects, the effective date shall be the date their governing body or designee approves initiation of the project design.

Permittee's Development Projects - The Permittee shall develop and implement an equivalent approach, to the approach used for private development projects, to apply the most current version of the low impact development runoff standards to applicable public development projects.

Where Project Planning Guide funding is applicable, Permittees shall ensure that adequate funding is available to implement post-construction treatment measures for Regulated Projects approved after the effective date of this permit.

Where State of California project approvals are applicable, Permittees shall implement post-construction treatment measures for Regulated Projects approved after the effective date of this permit.

F.5.g.2.a. Source Control Measures

(i) **Task Description** – Regulated Projects with pollutant-generating activities and sources shall be required to implement standard permanent and/or operational source control measures as applicable.

(ii) **Implementation Level** - Measures for the following pollutant-generating activities and sources shall be designed consistent with recommendations from the CASQA Stormwater BMP Handbook for New Development and Redevelopment or equivalent manual, and include:

(a) Accidental spills or leaks
(b) Interior floor drains
(c) Parking/Storage area maintenance
(d) Indoor and structural pest control
(e) Landscape/outdoor pesticide use
(f) Pools, spas, ponds, decorative fountains, and other water features
(g) Restaurants, grocery stores, and other food service operations
(h) Storage and handling of solid waste
(i) Outdoor storage of equipment or materials
(j) Vehicle and equipment cleaning
(k) Vehicle and equipment repair and maintenance
(l) Fuel dispensing areas
(m) Loading docks
(n) Fire sprinkler test water
(o) Drain or wash water from boiler drain lines, condensate drain lines, rooftop equipment, drainage sumps, and other sources
(p) Unauthorized non-storm water discharges
(q) Building and grounds maintenance

F.5.g.2.b. Numeric Sizing Criteria for Storm Water Retention and Treatment

The Permittees shall require facilities designed to evapotranspire, infiltrate, harvest/use, and biotreat storm water to meet at least one of the following hydraulic sizing design criteria:

(1) Volumetric Criteria:

a) The maximized capture storm water volume for the tributary area, on the basis of historical rainfall records, determined using the formula and volume capture coefficients in Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87 (1998) pages 175-178 (that is, 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 in Section 5 of CASQA's Stormwater Best Management Practice Handbook, New Development and Redevelopment (2003), using local rainfall data.

(2) Flow-based Criteria

a) The flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity; or

b) The flow of runoff produced from a rain event equal to at least 2 times the 85th percentile hourly rainfall intensity as determined from local rainfall records.

F.5.g.2.c. Site Design Measures as defined in Section F.5.g.1. shall be based on the objective of achieving infiltration, evapotranspiration and/or harvesting/reuse of the 85th percentile rainfall event, to the extent feasible, to meet Section F.5.g.2.b. Numeric Sizing Criteria for Storm Water Retention and Treatment. Site design measures shall be used to reduce the amount of runoff, to the extent technically feasible, for which retention and runoff is required. Any remaining runoff from impervious DMAs may then be directed to one or bioretention facility as specified in Section F.5.g.2.d. Storm Water Treatment Measures and Baseline Hydromodification Management Measures, described below.

F.5.g.2.d. Storm Water Treatment Measures and Baseline Hydromodification Management Measures After implementation of Site Design Measures in F.5.g.2.c., runoff from remaining impervious DMAs must be directed to one or more facilities designed to infiltrate, evapotranspire, and/or biotreat the amount of runoff specified in Section F.5.g.2.b. Numeric Sizing Criteria for Storm Water Retention and Treatment. The facilities must be demonstrated to be at least as effective as a bioretention system with the following design parameters.

(1) Maximum surface loading rate of 5 inches per hour, based on the flow rates calculated. A sizing factor of 4% of tributary impervious area may be used.
(2) Minimum surface reservoir volume equal to surface area times a depth of 6 inches.
(3) Minimum planting medium depth of 18 inches. The planting medium must sustain a minimum infiltration rate of 5 inches per hour throughout the life of the project and must maximize runoff retention and pollutant removal. A mixture of sand (60%-70%) meeting the specifications of American Society for Testing and Materials (ASTM) C33 and compost (30%-40%) may be used.

(4) Subsurface drainage/storage (gravel) layer with an area equal to the surface area and having a minimum depth of 12 inches.
(5) Underdrain with discharge elevation at top of gravel layer.
(6) No compaction of soils beneath the facility, or ripping/loosening of soils if compacted.
(7) No liners or other barriers interfering with infiltration.
(8) Appropriate plant palette for the specified soil mix and maximum available water use.

a) **Alternative Designs for Bioretention Facilities —** Facilities, or a combination of facilities, of a different design than in Section F.5.g.2.d. may be permitted if the following measures of equivalent effectiveness are demonstrated:

(1) Equal or greater amount of runoff infiltrated or evapotranspired
(2) Equal or lower pollutant concentrations in runoff that is discharged after bioretention
(3) Equal or greater protection against shock loadings and spills
(4) Equal or greater accessibility and ease of inspection and maintenance

b) **Allowed Adjustments for Bioretention Facilities for Special Site Conditions** - The bioretention design parameters as specified in Section F.5.g.2.d. may be adjusted for the following special site conditions:

(1) Facilities located within 10 feet of structures or other potential geotechnical hazards established by the geotechnical expert for the project may incorporate an impervious cutoff wall between the bioretention facility and the structure or other geotechnical hazard.
(2) Facilities in areas with documented high concentrations of pollutants in underlying soil or groundwater, facilities located where infiltration could contribute to a geotechnical hazard, and facilities located on elevated plazas or other structures may incorporate an impervious liner and may locate the underdrain discharge at the bottom of the subsurface drainage/storage layer (this configuration is commonly known as a “flow-through planter”).
(3) Facilities located in areas of highly infiltrative soils or high groundwater, or where connection of underdrain to a surface drain or to a subsurface storm drain are infeasible, may omit the underdrain.

c) **Exceptions to Requirements for Bioretention Facilities** - Contingent on a demonstration that use of bioretention or a facility of equivalent effectiveness is infeasible, other types of biotreatment or media filters (such as tree-box-type biofilters or in-vault media filters) may be used for the following:

(1) Projects creating or replacing an acre or less of impervious area, and located in a designated pedestrian-oriented commercial district (i.e., smart growth projects), and having at least 85% of the entire project site covered by permanent structures;
(2) Facilities receiving runoff solely from existing (pre-project) impervious areas;
(3) Historic sites, structures, or landscapes that cannot alter their original configuration in order to maintain their historic integrity.

(iii) **Reporting** – The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance.

F.5.g.3. Alternative Post-Construction Storm Water Management Program

A Permittee may propose alternative post-construction measures in lieu of some or all of Section F.5.g. requirements for multiple benefit projects. Multiple-benefit projects include projects that may address any of the following, in addition to water quality: water supply, flood control, habitat enhancement, open space preservation, recreation, climate change. Multiple-benefit projects may be applied at various scales including project site, municipal or sub-watershed level. Multiple-benefit projects may include, but are not limited to, projects developed under Watershed Improvement Plans (Water Code §16100 et seq.), IRWMP implementation and green infrastructure projects. Multiple benefit projects must be equally or more protective of water quality than Section E.12. requirements.

The Regional Water Board or the Executive Officer may approve alternative post-construction measures for multiple-benefit projects, as described above, after an opportunity for public comment, if the Regional Water Board or Executive Officer finds that the alternative measures are consistent with the MEP standard.

F.5.g.4. Operation and Maintenance (O&M) of Post-Construction Storm Water Management Measures

(i) **Task Description** –Within the third year of the effective date of the permit, the Permittee shall implement an O&M Verification Program for new development projects regulated under this Order.

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

(a) Projects shall at a minimum, require at least one of the following from all project proponents and their successors in control of the Project or successors in fee title:

(1) 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 installed treatment system(s) and hydromodification control(s) (if any) until such responsibility is legally transferred to another entity;

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

(b) Coordination with the appropriate mosquito[36] and vector control agency with jurisdiction to establish a protocol for notification of installed treatment systems and hydromodification management controls. On an annual basis, before the wet season, prepare a list of newly installed (installed within the reporting period) storm water treatment systems and hydromodification management controls to the local mosquito and vector control agency and the appropriate Regional Water Board. This list shall include the facility locations and a description of the storm water treatment measures and hydromodification management controls installed.

(c) A database or equivalent tabular format of all projects that have installed treatment systems. This database or equivalent tabular format shall include the following information for each project:

(1) Name and address of the project;
(2) Specific description of the location (or a map showing the location) of the installed treatment system(s) and hydromodification control(s) (if any);
(3) Date(s) that the treatment system(s) and hydromodification controls (if any) is/are installed;
(4) Description of the type and size of the treatment system(s) and hydromodification control(s) (if any) installed;
(5) Responsible operator(s) of each treatment system and hydromodification control (if any);
(6) Dates and findings of inspections (routine and follow-up) of the treatment system(s) and hydromodification control(s) (if any) by the Permittee; and
(7) Any problems and corrective or enforcement actions taken.

(d) Maintenance Approvals: The Permittee shall ensure that systems and hydromodification controls installed at projects are properly operated and maintained for the life of the projects. In cases where the responsible party for a treatment system or hydromodification control has worked diligently and in good faith with the appropriate State and federal agencies and the Permittee to obtain approvals necessary to complete maintenance activities for the treatment system or hydromodification management control, but these approvals are not granted, the Permittee shall be deemed to be in compliance with this Provision.

(iii) **Reporting -** The Permittee shall use State Water Board SMARTS to submit a summary of the past year activities and certify compliance with all requirements of this program element. The summary shall also address the relationship between the program element activities and the Permittee's Program Effectiveness Assessment and Improvement Plan that tracks annual and long-term effectiveness of the storm water program. If a Permittee is unable to certify compliance with a requirement in this program element see Section F.5.j.2.for compliance.

[36] "Best Management Practices for Mosquito Control on California State Properties" are available from the California West Nile virus website at http://www.westnile.ca.gov/resources.php. Please see Table 1, page 22, for a list of California mosquito control agencies or visit http://mvcac.org .

F.5.h. PROGRAM EFFECTIVENESS ASSESSMENT AND IMPROVEMENT

F.5.h.1. Program Effectiveness Assessment and Improvement Plan

(i) **Task Description -** The Permittee shall develop and implement a Program Effectiveness Assessment and Improvement Plan that tracks short and long-term progress of the storm water program. The Program Effectiveness Assessment and Improvement Plan will assist the Permittee to adaptively manage its storm water program and make necessary modifications to the program to improve program effectiveness, reduce pollutants of concern, achieve the MEP standard, and protect water quality, and to document the Permittee's compliance with permit conditions. The Program Effectiveness Assessment and Improvement Plan shall identify the strategy used to gauge the effectiveness of prioritized BMPs and program implementation as a whole. Prioritized BMPs include BMPs implemented based on pollutants of concern. Where pollutants of concern are unidentified, prioritized BMPs are based on common pollutants of concern (i.e., sediment, bacteria, trash, nutrients). The effectiveness assessments will build upon each other from one year to the next and shall identify modifications to the program the Permittee must undertake to improve effectiveness.

(ii) **Implementation Level** - The Program Effectiveness Assessment and Improvement Plan may be modeled upon the most recent version (if applicable) Municipal Storm Water Program Effectiveness Assessment Guidance (CASQA, May 2007) or equivalent.

(a) The Program Effectiveness Assessment and Improvement Plan shall include the following minimum elements:

(1) Implementation of storm water program elements
(2) Identification and targeting of Target Audience(s)

(iii) **Reporting -** By the second year Annual Report complete and submit the Program Effectiveness Assessment and Improvement Plan. At a minimum, the Plan shall include implementation of storm water program elements and identification of the Targeted Audience(s).

F.5.h.2 Storm Water Program Modifications

(i) **Task Description** – Within the fifth year of the effective date of the permit, based on the information gained from the effectiveness assessment, the Permittee shall identify modifications to control measures/significant activities, including new BMPs or modification to existing BMPs. The Permittee shall consult with the Regional Water Board in setting expectations for the scope, timing, and frequency of BMP modifications for the next permit cycle.

(ii) **Implementation Level** –The Permittee shall identify program modifications to include:

(a) Improving upon BMPs that did not accomplish goals;
(b) Continuing and expanding upon BMPs that proved to be effective, including identifying new BMPs or modifications to existing BMPs designed to increase pollutant load reductions;

(c) Discontinuing BMPs that may no longer be productive and replacing with more effective BMPs; and
(d) Shifting priorities to make more effective use of resources

(iii) **Reporting** – By the fifth year Annual Report complete and have available a list of maintenance activities of highest priority BMPs. By the fifth year Annual Report, complete and have available a summary of proposed modifications to the storm water program to improve program effectiveness, to achieve the MEP standard, and to protect water quality.

F.5.i. TOTAL MAXIMUM DAILY LOADS COMPLIANCE REQUIREMENTS

F.5.i.1. The Permittee shall comply with all applicable TMDLs approved pursuant to 40 Code of Federal Regulations § 130.7 that assign a Waste Load Allocation to the Permittee and that have been identified in Attachment G.

F.5.i.2. Waste Load Allocations (WLA), Load Allocations (LA), effluent limitations, implementation requirements, and monitoring requirements are specified in the adopted and approved Regional Water Board Basin Plans and authorizing resolutions which are incorporated herein by reference as enforceable parts of this Order. Applicable Basin Plan amendments and resolutions are identified in Attachment G. With the exception of the TMDLs for the Los Angeles Regional Water Board, Attachment G additionally contains a list of TMDL-specific permit requirements developed by the Regional Boards for compliance with the implementation requirements of the relevant TMDLs. These requirements are an enforceable component of this Order. In some cases, dates are given that fall outside the term of this Order. Compliance dates that have already passed are enforceable on the effective date of this Order. Compliance dates that exceed the term of this Order are included for reference, and become enforceable in the event that this Order is administratively extended.

F.5.i.3. The Regional Water Boards are directed to review, within one year of the effective date of this Order, the TMDL-specific permit requirements contained in Attachment G and to propose to the State Water Board any appropriate revisions after consultation with the Permittees and State Water Board staff. The Los Angeles Regional Water Board will develop TMDL-specific permit requirements within one year of the effective date of this Order in consultation with the Permittees and State Water Board staff. Any proposed revisions by the Regional Water Boards shall be supported by a statement of reasons explaining how the proposed TMDL-specific permit requirements are consistent with the assumptions and requirements of applicable WLAs and with the goals of the TMDL. The State Water Board will incorporate into this Order any necessary revisions, including the statements of reasons through a reopener. The State Water Board may additionally revise this Order through a reopener to incorporate any modifications or revisions to the TMDLs in Attachment G, or to incorporate any new TMDLs adopted during the term of this General Permit that assign a WLA to the Permittee or that identify the Permittee as a responsible party. Where a TMDL is limited to a single constituent within a single reach of the watershed, the Regional Water Board Executive Officer may require additional monitoring, per Water Code § 13383. In revising Attachment G, the State Water Board will allow adequate notice and public review.

F.5.i.4. The Permittee shall complete and have available a report that includes the status of their implementation of the specific TMDL implementation requirements that have been incorporated into the Order with each Annual Report. The TMDL implementation report shall include the following information:

(a) A description of BMPs implemented, including types, number, and locations
(b) An assessment of the effectiveness of implemented BMPs in progressing towards attainment of wasteload allocations within the TMDLs' specified timeframes
(c) All monitoring data, including a statistical analysis of the data to assess progress towards attainment of wasteload allocations within the TMDLs' specified timeframes
(d) Based on results of the effectiveness assessment and monitoring, a description of the additional BMPs that will be implemented to attain wasteload allocations within the TMDLs/ specified timeframes

F.5.i.5. The Permittee shall comply with implementation requirements specified in Category 4b demonstrations associated with Clean Water Act Sections 303d, 306b, and 314 Integrated Reporting and Listing Decisions. Implementation requirements described in Category 4b demonstrations are effective upon Regional Water Board approval of that region's Integrated Reporting and Listing Decisions and associated Category 4b demonstrations.

F.5.j. ONLINE ANNUAL REPORTING

F.5.j.1. Department of Defense and Department of Corrections, ports, transportation agencies and Rehabilitation Permittees are exempt from Annual Reporting of any provision that could pose a security risk and compromise facility security. Any requested information to determine compliance with this Order [40 C.F.R. 122.41(h)] by the Water Boards or U.S. EPA shall be furnished during normal business hours.

F.5.j.2. The Permittee shall use State Water Board's SMARTS to submit a summary of the past year activities for each program element and certify compliance with all requirements of this permit. If a Permittee is unable to certify compliance with a requirement, it must submit in SMARTS the reason for failure to comply, a description and schedule of tasks necessary to achieve compliance, and an estimated date for achieving full compliance.

F.5.j.3. Permittees shall complete and retain all Annual Report information on the previous fiscal year beginning July 1 and ending June 30. The Annual Reporting requirements are set forth in Provisions E. The Permittee shall retain documentation as necessary to support their Annual Report. The Permittee shall make this supporting information available during normal business hours, unless agreed to by the Regional Water Board's Executive Officer.

F.5.j.4. The Permittee shall submit when requested by the Executive Officer of the applicable Regional Water Board a detailed written online annual report or in-person presentation of the annual report that addresses the activities described in Provision F. The detailed Annual Report must clearly refer to the permit

requirements and describe in quantifiable terms, the status of activities undertaken to comply with each requirement.

F.5.j.5. Permittees involved in regional programs may coordinate with the members to identify reporting responsibility. The one report submitted on behalf of Permittees involved in a regional program must include a summary of the past year activities implemented for each program element and certification of compliance for each of the Permittees in the regional program.

G. REGIONAL WATER BOARD AUTHORITIES

Regional Water Boards are responsible for overseeing compliance with this Order. Oversight may include, but is not limited to, reviewing reports, requiring modification to storm water program components and various submissions, imposing region-specific monitoring requirements, conducting inspections and program evaluations (audits), taking enforcement actions against violators of this Order. Permittees shall modify and implement their storm water management programs and monitoring as required by the Regional Water Board Executive Officer. The Regional Water Board may designate additional Small MS4s as Regulated Small MS4s under this Order consistent with the criteria articulated in Finding 24 of this Order. Such designations must be approved by the Regional Water Board following public review and comment. The Executive Director of the State Water Board may amend Attachments A and B to add Regional Water Board designations. The Regional Water Boards may also issue individual permits to Regulated Small MS4s, and alternative general permits to categories of Regulated Small MS4s. Upon issuance of such permits by a Regional Water Board, this Order shall no longer regulate the affected Small MS4(s).

H. DISPUTE RESOLUTION

In the event of a disagreement between a Permittee or other interested party and a Regional Water Board over the interpretation or implementation of any provision of this Order, a Permittee or interested party shall first attempt to resolve the issue with the Executive Officer of the Regional Water Board. If a satisfactory resolution is not obtained at the Regional Water Board level, a Permittee or interested party may submit the issue in writing to the Executive Director of the State Water Board or his designee for resolution, with a copy to the Executive Officer of the Regional Water Board. The issue must be submitted to the Executive Director within thirty days of any final determination by the Executive Officer of the Regional Water Board; after thirty days the Permittee or interested party will be deemed to have accepted the Regional Water Board Executive Officer's determination. The Executive Officer of the Regional Water Board will be provided an opportunity to respond. The Executive Director or his/her designee shall make a determination on the request within 60 days. Determinations of the Regional Water Board Executive Officers in interpreting and implementing this permit are considered actions of the State Water Board except where the Regional Water Board itself acts or the Executive Officer acts under Water Code Sections 13300, 13304, or 13383.

I. PERMIT RE-OPENER

This Order may be modified, revoked and reissued, or terminated for cause due to promulgation of amended regulations, receipt of U.S. EPA guidance concerning regulated activities, judicial decision, or in accordance with 40 Code of Federal Regulations 122.62, 122.63, 122.64, and 124.5. The State Board may additionally reopen and modify this Order at any time prior to its expiration under any of the following circumstances:

1. Present or future investigations demonstrate that the discharge(s) regulated by this Order may have the potential to cause or contribute to adverse impacts on water quality and/or beneficial uses.

2. New or revised Water Quality Objectives come into effect, or any TMDL is adopted or revised that is applicable to the Permittees

3. TMDL-specific permit requirements for adopted TMDLs are developed or revised by a Regional Water Board for incorporation into this Order.

4. The State Water Board determines, after opportunity for public comment and a public workshop, that revisions are warranted to those provisions of the Order addressing compliance with water quality standards in the receiving water or those provisions of the Order laying out an iterative process for implementation of management practices to achieve compliance with water quality standards in the receiving water.

5. The State Board completes the delineation of statewide watershed management zones based on watershed processes and the development of watershed based criteria for hydromodification measures.

6. The State Water Board completes the statewide policy for trash control in California's waterways.

J. PERMIT EXPIRATION

This Order expires on June 30, 2018. If this Order is not reissued or replaced prior to the expiration date, it will be administratively continued in accordance with 40 Code of Federal Regulations section 122.6 and remain in full force and effect. If you wish to continue an activity regulated by this Order after the expiration date of this Order, you must apply for and obtain authorization as required by the new permit once it is issued.

CERTIFICATION

The undersigned, Clerk to the Board, does hereby certify that the foregoing is a full, true, and correct copy of an order duly and regularly adopted at a meeting of State Water Board held on February 5, 2013.

AYE:	Chairman Charles R. Hoppin Vice Chair Frances Spivy-Weber Board Member Tam M. Doduc Board Member Steven Moore Board Member Felicia Marcus
NAY:	None
ABSENT:	None
ABSTAIN:	None

Jeanine Townsend

Jeanine Townsend
Clerk to the Board