CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2016-XXXX
NPDES NO. CAXXXXXXXX

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND WASTE DISCHARGE REQUIREMENTS
GENERAL PERMIT
FOR
DISCHARGES FROM MUNICIPAL SEPARATE STORM SEWER SYSTEMS

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I. FINDINGS

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

1. **Water Quality Focused Permit Framework.** Currently, each Phase I Municipal Separate Storm Sewer Systems (MS4) Permittee within the Central Valley region is covered under an individual permit issued by the Central Valley Water Board. In addition, each Phase II MS4 Permittee within the Central Valley region is currently covered under the State Water Resources Control Board's (State Water Board) statewide Phase II MS4 General Order (National Pollution Discharge Elimination System (NPDES) No. CAS000004, *Waste Discharge Requirements for Storm Water Discharges from Small MS4s*, State Water Board Order WQ 2013-0001-DWQ). The Central Valley Water Board has developed a single Region-wide MS4 Permit (Order) that promotes greater watershed/drainage shed coordination, water quality measure protections, and program implementation efficiencies.

   This Order specifies a Performance-Based approach for the Permittee to implement a Storm Water Management Program as described in its Storm Water Management Plan (SWMP). If the Permittee does not succeed in implementation of the Performance-Based approach **(Part V.D)**, this Order requires implementation of a Prescriptive-Based approach which serves as a "backstop". Details for both approaches are described in **Attachments J and K**, respectively.

2. **Fact Sheet.** The Fact Sheet for this Order contains background information, regulatory and legal citations, references, and additional explanatory information and data in support of the requirements of this Order. The Fact Sheet in **Attachment F** is hereby incorporated into this Order by reference and constitutes part of the Findings of this Order.

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3. **Storm Water and Non-Storm Water Discharges**. Storm water discharges consist of those discharges that originate from precipitation events. Federal regulations define "storm water" as "storm water runoff, snow melt runoff, and surface runoff and drainage" (Title 40 of the Code of Federal Regulations (CFR) section 122.26 (b)(13)). Non-storm water discharges that do not originate from precipitation events~~,~~ are not considered storm water discharges, and therefore are not subject to the Maximum Extent Practicable (MEP) standard of CWA section 402(p)(3)(B), which is explicitly for "Municipal…*Storm water Discharges* (emphasis added)" from the MS4s (*See* 33 U.S.C. § 1342(p)). Pursuant to CWA section 402(p)(3)(B)(ii), non-storm water discharges into the MS4s shall be effectively prohibited. This prohibition applies unless the discharges are authorized under a separate NPDES permit; the result of emergency firefighting activities; or conditionally exempted under this Order.

4. **MS4 Ownership or Operation.** The Permittee owns or operates a MS4, through which storm water and authorized non-storm water discharge into waters of the United States within the Central Valley region. This Order regulates municipal discharges of storm and non-storm water from the Permittee's MS4. A MS4 is defined under (40 CFR 122.26(b)(8)) and in **Attachment C** (*Acronyms, Abbreviations, and Definitions*).

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5. **Legal and Regulatory Authority.** This Order is issued pursuant to CWA section 402 and implementing regulations (40 CFR § 122) adopted by the United States Environmental Protection Agency (USEPA), and chapter 5.5, division 7 of the Water Code (commencing with section 13370). This Order serves as a NPDES permit for discharges from MS4s to surface waters. This Order also serves as Waste Discharge Requirements (WDRs) pursuant to article 4, chapter 4, division 7 of the Water Code (commencing with section 13260). The State Water Board and Regional Water Boards administer the NPDES permit program within California pursuant to USEPA authorization granted under 33 United States Code (USC) section 1342.

   The Central Valley Water Board has the legal authority to issue MS4 permits pursuant to CWA section 402(p)(3)(B) and 40 CFR 122.26(a)(1)(v). The CWA and implementing regulations allow a permitting authority, in this case the Central Valley Water Board, to establish system- or jurisdiction-wide permits (33 USC 1342(p)(3)(B)(i); (55 Federal Register (FR) 47990, 48039-48042). The nature of this Order will ensure consistency of regulation across the Central Valley region and may result in cost savings for the Permittee and the Central Valley Water Board.

   Federal, state, regional, or local entities within the Permittees' boundaries, not currently named in this Order, operate storm drain facilities and/or discharge storm water to the storm drains covered by this Order. The Permittees may lack legal jurisdiction over these entities under applicable state and federal authorities. Consequently, the ~~Regional~~ Central Valley Water Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. However, Permittees should notify the ~~Regional~~ Central Valley Water Board upon recognition of discharges, which they reasonably believe are a threat to storm water quality protection.

   The State and Regional Water Boards may consider issuing separate NPDES storm water permits to other federal, state, or regional entities operating and discharging within the Permittees' boundaries that may not be subject to direct regulation by the Permittees. Federal agencies are not subject to municipal storm water requirements although they may be permitted as industrial dischargers.

   The Permittee need only comply with permit conditions relating to discharges from the MS4s for which they are operators (40 CFR 122.26(a)(3)(vi)). This Order does not require the Permittee to manage storm water outside of their jurisdictional boundaries or authority, but rather to improve storm water management within the Permittee's Jurisdictional Runoff Area. This Order also encourages Permittees to coordinate with each other at regional and/or watershed level scales for greater water quality improvement and efficiency.

   There may be runoff or return flows originating from portions of the Permittee's Jurisdictional Runoff Area that are mainly agricultural or rural and which are beyond the Permittee's legal authority to control (hereinafter "agricultural discharges"). It is not the intent of the storm water program to regulate agricultural discharges. Unless an agricultural discharge constitutes a point source discharge to the Permittee's MS4, this Order requires only that the Permittee demonstrate to the Board that it has taken ~~means~~ measures to seek voluntary cooperation or employ regulatory controls, if available, to control the discharge of pollutants in agricultural discharges.

6. **Clean Water Act National Pollutant Discharge Elimination System Permit Conditions.** Pursuant to CWA section 402(p)(3)(B), NPDES permits shall (a) include a

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requirement to effectively prohibit non-storm water discharges into the MS4, and (b) "require controls to reduce the discharge of pollutants to the maximum extent practicable [MEP], including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."

This Order prescribes conditions to assure compliance with the CWA requirements for owners and operators of MS4s to effectively prohibit non-storm water discharges into the MS4s, and requires controls to reduce the discharge of pollutants in storm water from MS4s to the MEP. To evaluate the effectiveness of controls, monitoring and reporting requirements are described in **Part V.E** and are hereby incorporated into this Order and constitute part of the Findings of this Order.

7. **Monitoring and Reporting Requirements.** CWA section 308(a) and 40 CFR sections 122.41(h), (j)-(l) and 122.48 require that NPDES permits shall specify monitoring and reporting requirements. Federal regulations applicable to large and medium MS4s also specify additional monitoring and reporting requirements in 40 CFR sections 122.26(d)(1)(iv)(D), 122.26(d)(1)(v)(B), 122.26(d)(2)(i)(F), 122.26(d)(2)(iii)(D), 122.26(d)(2)(iv)(B)(2), and 122.42(c). Additionally, 40 CFR sections 124.44(i) and 122.48(b) provide monitoring requirements applicable to Phase II MS4s. Water Code sections 13267 and 13383 authorizes the Central Valley Water Board to establish monitoring, inspection, entry, reporting and recordkeeping requirements that implement the federal and State laws and/or regulations. This Order establishes monitoring and reporting requirements to implement these and other federal and State requirements.

8. **Total Maximum Daily Loads.** CWA section 303(d)(1)(A) requires that "[e]ach state shall identify those waters within its boundaries for which the effluent limitations…are not stringent enough to implement any water quality standard applicable to such waters." The CWA also requires states to establish a priority ranking of impaired water bodies known as Water Quality Limited Segments and to establish Total Maximum Daily Loads (TMDLs) for such waters. This priority list of impaired water bodies is called the CWA section 303(d) List of Water Quality Limited Segments, commonly referred to as the CWA section 303(d) List. The CWA requires the 303(d) List to be updated every two (2) years.

   TMDLs 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 (WLAs)) and non-point sources (load allocations), background contribution, plus a margin of safety. Discharges from MS4s are point source discharges. 40 CFR section 122.44(d)(1)(vii)(B) requires that NPDES permits incorporate water quality based effluent limitations (WQBELs) that are consistent with the assumptions and requirements of any available WLA for the discharge. In the context of MS4 discharges, WQBELs in NPDES permits may be expressed in the form of either numeric limitations or, where authorized by the applicable basin plan, best management practices (BMPs).[1] Requirements of this Order implement the TMDLs adopted by the Central Valley Water Board and approved by USEPA.

[1] 40 CFR 122.44(k)

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For each Permittee, this Order is the first MS4 permit to implement the TMDLs addressed by **Attachment G** as WQBELs. Because final compliance deadlines for some of these TMDLs have passed, and the WQBELs in **Attachment G** require the Permittees subject to them to meet WLAs by the final compliance deadline, the WQBELs implementing those TMDLs result in numeric limitations that are more stringent than the requirements in Permittees' previous MS4 permits. The water quality objectives that those WQBELs are designed to implement therefore meet the definition of "newly interpreted water quality objectives" under the State Water Board's Policy for Implementation of Compliance Schedules in National Pollutant Discharge Elimination System Permits, State Water Board Resolution No. 2008-0025 (the "Compliance Schedule Policy"). Accordingly, the Central Valley Water Board has legal authority to adopt a compliance schedule for a Permittee that satisfies the application requirements listed in Paragraph 4 of the Compliance Schedule Policy, which are reproduced in **Part III.B.3**. This Order allows a Permittee requesting additional time to come into compliance with WQBELs that implement a "newly interpreted water quality objective" to include a proposed compliance schedule in its SWMP, including a justification satisfying the criteria listed in **Part III.B.3**. Central Valley Water Board approval of a SWMP operates as approval and adoption of any compliance schedules contained therein.[2]

9. **Enrollment Process.** Permittees currently covered under the State Water Board Order WQ 2013-0001-DWQ (NPDES No. CAS000004, *Waste Discharge Requirements for Storm Water Discharges from Small MS4s*) or an individual Phase I MS4 Permit issued by the Central Valley Water Board are not immediately covered by this Order. If seeking coverage under this Order Permittees must apply to the Central Valley Water Board for coverage. **Part V.B** of this Order describes the enrollment process.

10. **Storm Water Management Plan**. Pursuant to 40 CFR section 122.26(d)(2)(iv), the Permittee is required to submit a SWMP for Central Valley Water Board approval. The process, including a timeline for submittal, review, and approval, is outlined in **Part V.F.2** herein. Once approved, the SWMP is incorporated into, and deemed an integral and enforceable component of this Order and shall be implemented during the entire duration of this Order. No revision(s) to the SWMP will be effective until approved by the Central Valley Water Board, or its delegate.

DISCHARGE CHARACTERISTICS AND RUNOFF MANAGEMENT

11. **Point Source Discharges of Pollutants.** Discharges from the MS4s may contain waste, as defined in the California Water Code and pollutants that may adversely affect the quality of the waters of the United States. A MS4 discharge that contains such waste or pollutants is a “discharge of a pollutant” into waters of the United States, as defined in section 502(12) of the CWA. Discharges from the MS4s may contain pollutants that may cause or contribute to exceedances of surface water quality standards, as prescribed in the *Water Quality Control Plan for the Sacramento and San Joaquin River Basins* and the *Water Quality Control Plan for the Tulare Lake Basin* (Basin Plans). Storm water from and non-storm water discharges into the MS4s are subject to the conditions and requirements established in the appropriate Basin Plan as

[2] A Permittee may still request a compliance schedule separately from the SWMP process if it so chooses.

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applied through a permit.

12. **Pollutants in Runoff.** Nationally, non-storm water from MS4s has been shown to contribute significant levels of pollutants in urbanized areas and may contribute significantly to exceedances of applicable receiving water quality standards.[3] Within the Central Valley region, numerous receiving water bodies and water body segments have been designated as impaired pursuant to CWA section 303(d).[4] These determinations indicate that non-storm water discharges are one of the sources causing or contributing to water quality impairment. The CWA section 303(d) lists primary pollutants of concern that may be attributed to urban runoff include low dissolved oxygen, pathogens, salinity, pesticides, copper, iron, lead, mercury, zinc, polychlorinated biphenyls (PCBs), and toxicity levels.

    These impairments are consistent with water quality data collected by Central Valley region Permittees to date and other study results[5], which indicate the most common pollutants in runoff discharged from the MS4s include total suspended solids, sediment, pathogens (e.g., bacteria, viruses, protozoa), heavy metals (e.g., copper, lead, and zinc), petroleum products and polynuclear aromatic hydrocarbons (PAHs), synthetic organics (e.g., pesticides, herbicides, and PCBs), nutrients (e.g., nitrogen and phosphorus), oxygen-demanding substances (e.g., decaying vegetation, green waste, animal waste), detergents, and litter/trash. As operators of the MS4s, Permittees may not passively receive and discharge pollutants from third parties that may cause or contribute to exceedances of water quality standards. The implementation of the measures set forth in this Order is intended to reduce the entry of pollutants into MS4s thereby reducing their discharge into receiving waters to the MEP.

13. **Human Health and Aquatic Life Impairment.** Pollutants in runoff discharged from the MS4s can threaten and adversely affect human health and aquatic organisms. Adverse responses of organisms to chemicals or physical agents in runoff range from physiological responses, such as impaired reproduction or growth anomalies, to mortality. Increased volume, velocity, rate, and duration of storm water runoff can greatly accelerate the erosion of downstream natural channels. When individually or cumulatively significant, such increases alter stream channels and habitats and can adversely affect aquatic and terrestrial organisms.

14. **Pollutants Resulting from Land Development.** New land development and redevelopment fulfills the needs of a growing population. However, the resulting changes in landscape and the human activities occurring thereon often create new

[3] (1) *Results of the Nationwide Urban Runoff Program*, Volumes I and II, United States Environmental Protection Agency, Washington, D.C., December 1983; (2) *Preliminary Data Summary of Urban Storm Water Best Management Practices*, United States Environmental Protection Agency, Washington, D.C., EPA-821-R-09-012, August 1999; (3) State Water Resources Control Board's 2010 (or most recently approved) Clean Water Act section 303(d) List and section 305(b) report.; (4) *Urban Stormwater Management in the United States, Committee on Reducing Stormwater Discharge Contributions in Water Pollution*, Water Science and Technology Board, Division on Earth and Life Sciences, National Research Council of The National Academies, 2008; and (5) *Pathogens in Urban Stormwater Systems*, Urban Water Resources Research Council, August 2014.
[4] 2012 CWA section 303(d) list, http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2012.shtml
[5] *Urban Runoff Discharges from Sacramento, California*, 1984-1985, Report Number 87-1SPSS, Central Valley Water Board, 1987

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sources of non-storm water discharges and/or increased sources of pollutants in storm water discharges. For example, increased human activity within newly developed and redeveloped areas may result in higher levels of car emissions, car maintenance wastes, municipal sewage, pesticides, household hazardous wastes, pet wastes, and litter/trash. When new development and redevelopment convert natural vegetated pervious ground cover to impervious surfaces, such as paved highways, streets, rooftops, and parking lots, without mechanisms to offset impacts of added impervious surfaces, the natural absorption and infiltration abilities of the land are decreased or lost. Therefore, runoff leaving a developed area without mitigation in the form of low impact development (LID), treatment controls, and/or hydromodification BMPs may contain greater pollutant loads and have significantly greater runoff volume, velocity, and peak flow rate compared to pre-project runoff from the same area.

15. **Low Impact Development Standards.** Low impact development refers to a storm water management strategy designed to reduce storm water runoff by enhancing infiltration and/or retaining runoff at its point of origin. New development and significant redevelopment often increases the impervious surfaces within a watershed, increasing peak flow rate and volume, and pollution levels in storm water runoff at a specific site. With the implementation of site-specific LID measures, interference with natural watershed functions resulting from urbanization can be minimized or eliminated, and opportunities for groundwater recharge and improving surface water quality can be maximized. LID encompasses a variety of site planning, source control and storm water treatment measures which eliminate or minimize runoff impacts to adjacent surface waters and which can even reduce overall project costs and benefit communities environmentally.[6] Low impact development strategies include, but are not limited to, source control, the use of pervious pavements and green roofs, routing runoff to landscape, biofiltration/bioretention cells or rain gardens, amending soils, and preserving on-site native vegetation, storm water basins, and natural drainage flowpaths in project design plans.

16. **Hydromodification Standards.** As used in this Order, "hydromodification" refers to ecologically significant changes to a stream or river channel's hydrology that stem from altered runoff patterns associated with land use development.[7] ~~Hydromodification controls are especially important when LID measures fail to perform due to improper design, installation or maintenance.~~ When altered runoff patterns occur, storm water runoff with increased volume, velocity, rate, duration, and overall energy (collectively "flow") reaches adjacent streams or rivers impacting channel hydrology. These changes in flow have the potential to increase the discharge of pollutants into waters of the United States in at least two ways. First, significantly increasing the flow of storm water runoff has been associated with increased sedimentation of receiving waters, whether such sediment originates from lands surrounding the receiving water or from the bed/bank of the receiving water itself. Second, the sediment roiled by increased storm water flows facilitates the transport, and ultimate deposition into the waters of the United States, of other pollutants that absorb or adsorb to sediment. Such eroded sediment and/or sediment-bound pollutants may have potential adverse impacts to water quality,

[6] *Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices*, United States Environmental Protection Agency, Washington D.C., EPA 841-F-07-006, December 2007.
[7] *Hydromodification Assessment and Management in California*, Southern California Coastal Water Research Project, Technical Report 667, April 2012, and *Hydromodification, A Fact Sheet from the Southern California Coastal Water Research Project*, March 2013.

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sensitive habitat, and/or aquatic or terrestrial organisms. Significant changes to the pre-development hydrograph can also disrupt natural drainage patterns in ways that cause significant increases in water temperatures in stream segments. These and similar changes can set off further water quality impacts such as excessive nutrient loads and corresponding drops in dissolved oxygen. These potential impacts form an illustrative, but not exhaustive, list of the ways that hydromodification can cause or contribute to the discharge of pollutants into waters of the United States. Properly designed, installed, and maintained LID measures are a primary method to address the causes of hydromodification.

17. **Best Management Practice Implementation.** Pollutants deposited and accumulated in MS4 drainage structures will likely be discharged to waters of the United States unless treated, or removed. These discharges may cause or contribute to exceedances of water quality standards in receiving waters. For this reason, pollutants in storm water discharges from the MS4s shall be reduced to the MEP by the application of a feasible combination of pollution prevention, source control, and/or treatment control best management practices (BMPs). Pollution prevention is the reduction or elimination of pollutant generation at its source. Properly implemented, source control BMPs (both structural and non-structural) minimize the contact between pollutants and runoff, thereby reducing or eliminating pollutant discharges into the MS4. Treatment control BMPs can be effective in removing pollutants that have been mobilized by storm water or non-storm water flows.

18. **Advancing Measures to Mitigate and Adapt to Climate Change.** Climate change is a term that has been used to refer to observed regional changes in weather patterns that may occur such as temperature, precipitation and storms. At the local scale, climate change may directly impact groundwater and surface water supply, shifting drainage, flooding and erosion patterns within urbanized areas. This shift, combined with California's growing population has increased reliance on pumping, conveying, treating, and heating water, activities associated primarily with the majority of greenhouse gas emissions due to electricity and natural gas consumption for the water sector.[8]

    As an adaptive climate change strategy to reduce water sector emissions, in some locations storm water runoff can be captured, infiltrated, and used to mitigate periodic drought conditions, reduce flood hazards and erosion rates, and recharge depleted groundwater aquifers and other water supply sources, all while reducing pollutant loads and maintaining beneficial uses in receiving waters.[9][10] Implementation of this storm water use strategy has multiple benefits and may contribute to balancing local water budgets, creating drought buffer reserves, restoring habitat and watershed health, sustaining municipal storm water infrastructure, and protecting public health, safety, and property.

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[8] *First Update to the Climate Change Scoping Plan, Building on a Framework Pursuant to AB 32, The California Global Warming Solution Act of 2006*, California Air Resources Board, May 2014, p. 62.
[9] Storm Water Strategy Initiative Concept Paper, State Water Resources Control Board, 16 May 2014.
[10] *Climate Change and Water Supply Security: Reconfiguring Groundwater Management to Reduce Drought Vulnerability*, A White Paper from the California Energy Commission's California Climate Change Center, prepared by the University of California, Santa Cruz, for the California Energy Commission, CEC-500-2012-017, July 2012.

19. **Long Term Planning and Implementation.** Federal regulations require MS4 permits to expire five (5) years from adoption, after which the permit shall be administratively extended if not renewed and reissued. The Central Valley Water Board recognizes that the degradation of water quality and impacts to beneficial uses of the waters in the Central Valley region for the most part has occurred over several decades. The Central Valley Water Board further recognizes that, with respect to certain water quality constituents, a decade or more may be necessary to realize demonstrable improvement to the quality of waters in the Central Valley region. This Order includes a long term planning, implementation, and adaptive management approach that may require more than a single permit term to complete. This permit is intended to develop, achieve, and implement a timely, comprehensive, cost-effective storm water pollution control program. Permittees will have the flexibility to prioritize and address the priority water quality constituents of concern in MS4 storm water to the MEP from the permitted areas subject to this Order and maintain or attain compliance with water quality standards over time.

WATER QUALITY STANDARDS

20. **Water Quality Control Plans.** The Central Valley Water Board has adopted the *Water Quality Control Plan for the Sacramento and the San Joaquin River Basins*, Fourth Edition (Revised June 2015) and *Water Quality Control Plan for the Tulare Lake Basin*, Second Edition (Revised January 2015) (Basin Plans). Each basin plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters addressed through the plan.

    Each Basin Plan may identify the following existing and potential beneficial uses[11] for surface waters in the Central Valley region: Municipal and Domestic Supply (MUN), Agricultural Supply (AGR), Industrial Service Supply (IND), Industrial Process Supply (PRO), Ground Water Recharge (GWR), Freshwater Replenishment (FRSH), Navigation (NAV), Hydropower Generation (POW), Contact Water Recreation (REC-1), Non-contact Water Recreation (REC-2), Commercial and Sport Fishing (COMM), Aquaculture (AQUA), Warm Freshwater Habitat (WARM), Cold Freshwater Habitat (COLD), Estuarine Habitat (EST), Wildlife Habitat (WILD), Preservation of Biological Habitats of Special Significance (BIOL), Rare, Threatened, or Endangered Species (RARE), and Migration of Aquatic Organisms (MIGR), Spawning, Reproduction, and/or Early Development (SPWN), and Shellfish Harvesting (SHELL).

    The State Water Board has adopted the *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Revised December 2006) (Bay-Delta Plan). The Bay-Delta Plan establishes water quality objectives for which implementation can be fully accomplished only if the State Water Board assigns some measure of responsibility to water right holders and water users to mitigate for the effects on the designated beneficial uses of their diversions and use of water. Like all water quality control plans, the Bay-Delta Plan consists of: (1) beneficial uses to be protected; (2) water quality objectives for the reasonable protection of beneficial uses; and (3) a program of implementation for achieving the water quality objectives. Together, such beneficial uses, water quality objectives, programs of implementation,

[11] The EST and SHELL surface water beneficial uses are only in the *Water Quality Control Plan for the Sacramento-San Joaquin River Basins*. The beneficial uses for AQUA (surface water) are only in the *Water Quality Control Plan for the Tulare Lake Basin*.

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and an anti-degradation policy, constitute water quality standards under the CWA. As a planning document, the Bay-Delta Plan prioritizes water quality control planning activities to include 1) Pelagic Organism Decline; 2) climate change; 3) Delta and Central Valley Salinity; and 4) San Joaquin River flows.

21. **National Toxics Rule and California Toxics Rule.** USEPA adopted the National Toxics Rule (NTR) on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About forty criteria in the NTR applied in California. On 18 May 2000, USEPA adopted the California Toxics Rule (CTR). The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. The requirements of this Order are consistent with the NTR and CTR.

22. **Domestic Water Quality.** In compliance with Water Code section 106.3, it is the policy of the State of California that every human being has the right to safe, clean, affordable, and accessible water adequate for human consumption, cooking, and sanitary purposes. This Order promotes that policy by requiring receiving waters to meet adopted water quality standards that are designed to protect human health and ensure that water is safe for domestic use.

23. **Antidegradation Policy.** This Order complies with the federal Antidegradation Policy described in 40 CFR 131.12, and State Water Resources Control Board (State Water Board) Resolution No. 68-16, *Statement of Policy with Respect to Maintaining High Quality Waters in California*. Federal regulations at 40 CFR 131.12 require that the State develop and adopt a statewide antidegradation policy consistent with the federal policy. In 1968, before the CWA was adopted, the State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16. Nevertheless, State Water Board Resolution No. 68-16 is consistent with the federal Antidegradation requirements. State Water Board Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on findings specified in that resolution. Each Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies.

24. **Anti-Backsliding Requirements.** Section 402(o)(2) of the CWA prohibits backsliding in NPDES permits. Where the requirement applies, a permit's effluent limitations must be at least as stringent as those in the previous permit. This statutory prohibition against backsliding applies in a narrow set of circumstances, none of which apply to the effluent limitations in this Order.[12] Although the State Water Board has acknowledged that it is unclear whether the regulatory prohibition on backsliding in 40 CFR section 122.44(*l*) applies more broadly to include non-numeric requirements such as BMPs and plans, this Order would satisfy anti-backsliding even if the regulatory requirement did apply. All effluent limitations in this Order are at least as stringent as the effluent limitations in the Permittee's previous permits. Implementation of this Order will result in water quality protection equal or better than protection afforded by previous permits.

CONSIDERATIONS UNDER FEDERAL AND STATE LAW

[12] *See* State Water Board Order WQ 2015-075, at p. 19 (June 16, 2015).

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25. **Endangered Species Acts.** This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (CESA, Fish and Game Code sections 2050 to 2097) or the federal Endangered Species Act (FESA, 16 USC sections 1531 to 1544). The requirements of this Order are designed to maintain water quality and prevent a condition of pollution, contamination or nuisance in waters of the United States. The Permittee remains independently responsible for meeting all applicable requirements under CESA and FESA.

26. **Economic Considerations.** When pollutant controls in an NPDES permit are more stringent than federal law requires, Water Code section 13263 requires that the Water Boards consider the factors described in Water Code section 13241 as they apply to those specific restrictions. However, the California Supreme Court has ruled that even though Water Code section 13263 requires the State and Regional Water Boards to consider factors set forth in Water Code section 13241 when issuing a NPDES permit, the Water Boards may not consider those factors to justify imposing pollutant restrictions that are less stringent than the applicable federal regulations require. (*City of Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, 618, 626-627.)

    The Central Valley Water Board finds that the requirements in this permit are not more stringent than the minimum federal requirements. The requirements of this Order all implement the effective prohibition on the discharge of non-storm water into the MS4, controls to reduce the discharge of pollutants in storm water to the MEP, or other provisions that the Central Valley Water Board has determined appropriate to control such pollutants. (*See* 33 USC section 1342(p)(3)(B)(iii).) All such requirements are mandated by federal law under section 402 of the CWA. Therefore, a Water Code section 13241 analysis is not required.

27. **Unfunded Mandates.** No provision of this Order constitutes an unfunded local government mandate subject to subvention under Article XIIIB, Section (6)(a) of the California Constitution. Article XIIIB, Section (6)(a) provides that whenever "any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse that local government for the costs of the program or increased level of service." The requirements of this Order do not constitute state mandates that are subject to a subvention of funds for the reasons described in **Attachment F** (*Fact Sheet*).

28. **California Environmental Quality Act.** The issuance of waste discharge requirements and NPDES permit coverage for the discharge of runoff from MS4s to waters of the United States is exempt from the requirement for preparation of environmental documents under the California Environmental Quality Act (CEQA) (Public Resources Code (PRC), Division 13, Chapter 3, section 21000 *et seq*.) in accordance with Water Code section 13389.

29. **BMPs in Lieu of Numeric Effluent Limits.** The Clean Water Act does not require the Central Valley Water Board to establish numeric effluent limits for pollutants in storm water discharges from MS4s (CWA section 402(p)(3)(B)(iii)~~,~~[13], 40 CFR § 122.44(k)).

[13] CWA section 402(p)(3)(B)(iii) states, in part, "…controls to reduce pollutants to the maximum extent practicable, including management practices, control techniques, and system, design and engineering

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Accordingly, with the exception of certain WQBELs based on applicable TMDLs, this Order does not contain numeric effluent limits, and instead includes requirements to reduce pollutants in storm water discharges to the MEP and other provisions to promote attainment of water quality standards over time. This Order requires the implementation of BMPs identified in the Permittee's SWMP to control and abate the discharge of pollutants in storm water discharges. Compliance with the requirements of this Order and implementation of the Permittee's SWMP and Work Plan in accordance with the corresponding schedules constitutes compliance with the MEP standard.

STATE WATER BOARD DECISIONS AND GUIDANCE

30. **Compliance with Receiving Water Limitations.** The provisions of this Order regarding receiving water limitations and the alternative compliance approach are consistent with language established in State Water Board Order WQ 99-05, as well as State Water Board Order WQ 2015-075. The receiving water limitations in this Order provide that storm water discharges from MS4s shall not cause or contribute to exceedances of water quality standards. Inclusion of the alternative compliance approach is necessary to ensure that Permittees effectively marshal their resources in order to make continual progress toward attainment of applicable water quality standards.

31. **Maximum Extent Practicable.** This Order specifies requirements necessary for the Permittees to reduce the discharge of pollutants in urban runoff to the MEP. MEP is a technology-based standard established by Congress in CWA section 402(p)(3)(B)(iii) that operators of MS4s shall meet. MEP is a dynamic performance standard that evolves over time. As urban runoff management knowledge increases, meeting the MEP standard requires the Permittee's Storm Water Management Program to be continually assessed and modified to incorporate improved programs, water quality control measures, BMPs, and other program components to address the pollutants of concern. Factors that shall be considered when defining MEP include, but are not limited to: effectiveness, regulatory compliance, public acceptance, cost, and technical feasibility. This continual assessment, revision, and improvement of the Storm Water Management Program implementation are expected to ultimately achieve compliance with water quality standards.

32. **Statewide Trash Amendments**. On 7 April 2015, the State Water Board adopted an Amendment to the Water Quality Control Plan for Inland Surface Waters, Enclosed Bays, and Estuaries that added "Final Part 1 Trash Provisions" (the "Trash Amendments"). The Trash Amendments require the Central Valley Water Board to implement these new provisions through NPDES permits issued pursuant to Federal Clean Water Act section 402(p), including MS4 permits.

    The Trash Amendments give the Central Valley Water Board two options for implementation, either of which must commence within 18 months of the Trash Amendments' effective date, 2 December 2015:

    a. Modify, re-issue, or adopt NPDES permits to add requirements to implement the Trash Amendments. Within three months of the effective date of the permit,

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methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."

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Permittee must select from the Trash Amendments' two methods of compliance and notify the Central Valley Water Board of its selection.

b. Issue orders pursuant to Water Code section 13267 or 13383 requiring each NPDES Permittee to submit, within three months from receipt of the orders, written notice to the Central Valley Water Board selecting from the Trash Amendments' two methods of compliance.

For all MS4 Permittees regulated by this Order, the Central Valley Water Board intends to implement the Trash Amendments pursuant to Option b, above. The effective date of this Order therefore does not trigger a three-month deadline for Permittees to notify the Central Valley Water Board of a compliance method under the Trash Amendments.

33. Stormwater Resource Planning, Senate Bill No. 985. The Stormwater Resource Planning Act authorizes the Permittee to develop a Stormwater Resource Plan to list, prioritize, and implement multi-benefit projects geared towards capturing storm water and dry weather runoff. The Permittees are now required to have a Stormwater Resource Plan as a condition of~~in order to apply and~~ receiv~~e~~ing funding for storm water and dry weather runoff capture projects from any approved bond measure. This Order encourages the Permittees to develop Storm Water Management Programs that promote the use of storm water as a resource.

ADMINISTRATIVE FINDINGS

34. As required by federal law, this General Order must be renewed within five years. Although initial coverage under this Order requires the submission of a Notice of Intent as described in **Part V.B.1**, the Central Valley Water Board does not intend to require Permittees to repeat that process each time this General Order is renewed. Rather, Permittees that are enrolled under this Order by the time it comes up for renewal will be identified as "Existing Permittees" and will automatically be enrolled in the renewed General Order unless they request a termination of coverage.

35. Executive Officer Delegation of Authority. The Central Valley Water Board by prior resolution has delegated all matters that may legally be delegated to its Executive Officer to act on its behalf pursuant to Water Code section 13223. Therefore, the Executive Officer is authorized to act on the Central Valley Water Board's behalf on any matter within this Order unless such delegation is unlawful under Water Code section 13223 or this Order explicitly states otherwise.

36. Standard Permit Provisions and General Provisions. Standard Provisions and General Provisions, which apply to all NPDES permits in accordance with 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in **Attachment H** (*Standard Permit Provisions and General Provisions*) to this Order. Permittees shall comply with all standard permit provisions and general provisions with those additional conditions that are applicable under 40 CFR 122.42 provided in **Attachment H**.

37. Public Notice. In accordance with California and federal laws and regulations, the Central Valley Water Board notified the Permittee, interested agencies and persons of its intent to prescribe waste discharge requirements and an NPDES permit for the control of discharges into and from the MS4s to waters of the United States within the Central

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Valley region. The Central Valley Water Board has provided an opportunity to submit written comments and recommendations. Details regarding public notice are provided in the Fact Sheet in **Attachment F**.

38. **Public Hearing.** The Central Valley Water Board held a public hearing on **XX June 2016** and heard and considered all comments pertaining to the terms and conditions of this Order. Details of the public hearing are provided in the Fact Sheet in **Attachment F**.

39. **Effective Date.** This Order serves as an NPDES permit pursuant to CWA section 402, and becomes effective one hundred (100) calendar days after the date of its adoption, provided that the Regional Administrator, USEPA, Region IX, does not object to this Order. If the USEPA objects to its issuance, this Order shall not become effective until such objection is withdrawn.

40. **Review by the State Water Board.** Any person aggrieved by this action of the Central Valley Water Board may petition the State Water Board to review the action in accordance with Water Code section 13320 and California Code of Regulations (CCR), Title 23, sections 2050, et seq. The State Water Board must receive the petition by 5:00 p.m., thirty (30) days after the Central Valley Water Board action, except that if the thirtieth day following the action falls on a Saturday, Sunday or State holiday, the petition must be received by the State Water Board by 5:00 p.m. on the next business day. Copies of the law and regulations applicable to filing petitions will be provided upon request or may be found on the Internet at: http://www.waterboards.ca.gov/public_notices/petitions/water_quality or will be provided upon request.

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IT IS HEREBY ORDERED that the Permittee, its agents, successors and assigns, in order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations, plans, and policies adopted there under and the provisions of the Clean Water Act and regulations and guidelines adopted there under, the Permittee shall comply with the following requirements of this Order.

II. DISCHARGE PROHIBITIONS

A. Storm Water Discharge Prohibitions[14]

1. Discharges from MS4s in a manner causing or contributing to a condition of pollution, contamination, or nuisance (as defined in Section 13050 of the California Water Code) are prohibited.
2. Discharges from MS4s shall not violate any applicable prohibition in the Basin Plans.[15]

B. Non-Storm Water Discharge Prohibitions

1. Non-storm water discharges into MS4s shall be effectively prohibited, in accordance with 40 CFR section 122.26(d)(2)(iv)(B), unless a) such discharges are authorized by a separate NPDES permit[16]; b) subject to **Part II.B.3**, the discharge is a non-storm water discharge or flow addressed by **Part II.B.2**; or c) the discharge is a non-storm water discharge addressed by **Part II.B.4**.

2. Pursuant to 40 CFR section 122.26(d)(2)(iv)(B)(1), the following categories of non-storm water discharges or flows shall be effectively prohibited from entering a MS4 in accordance with **Part II.B.3** only if such discharges are identified by the Permittee or the Executive Officer as a source of pollutants[17] to waters of the United States:

   a. Water line flushing;

   b. Landscape irrigation;

   c. Diverted stream flows;

[14] A Permittee may satisfy the prohibitions in this **Part II.A** by achieving full compliance with applicable provisions of **Part V.C**.

[15] Basin Plans include (1) *Water Quality Control Plan for the Sacramento and San Joaquin River Basins,* Chapter IV, Implementation, page IV 23.00 and (2)*Water Quality Control Plan for the Tulare Lake Basin,* Chapter IV, Implementation Plan, page IV-25.

[16] Other NPDES permits include, but may not be limited to: Individual permits, Permit for uncontaminated pumped ground water or foundation drains, footing drains, and crawl space pumps (NPDES Permit No. CAG990002, State Water Board Order WQ 2014-0174-DWQ, *Discharges from Utility Vaults and Underground Structures to Surface Waters*); Permit for discharge of groundwater or other water source to MS4 conveyance system (NPDES Permit No. CAG995001, Central Valley Water Board Order No. R5-2013-0074, *Dewatering and Other Low Threat Discharges to Surface Waters* or NPDES Permit No. CAG995002, Central Valley Water Board Order No. R5-2013-0073, *Limited Threat Discharges of Treated/Untreated Groundwater for Cleanup Sites, Wastewater from Superchlorination Projects, and Other Limited Threat Wastewaters to Surface Waters*).

[17] For purposes of ~~this~~ **Part II.B** "source of pollutants" means any discharge of pollutants in concentration or mass beyond a *de minimus* amount that ~~that~~ would cause or contribute to an exceedance or excursion of any applicable water quality standard.

d. Rising ground waters;

e. Uncontaminated ground water infiltration as defined by 40 CFR section 35.2005(20)) to separate storm sewers[18];

f. Uncontaminated pumped ground water;

g. Discharges from potable water sources[19];

h. Foundation drains;

i. Air conditioning condensation;

j. Irrigation water[20];

k. Springs;

l. Water from crawl space pumps;

m. Footing drains;

n. Lawn watering;

o. Individual residential car washing;

p. Flows from riparian habitats and wetlands;

q. Dechlorinated/debrominated swimming pool/spa discharges;[21]

r. Street wash water; and

s. Essential Non-Emergency[22] and Emergency Firefighting Activities.[23]

[18] Uncontaminated ground water infiltration is water other than waste water that enters the MS4 (including foundation drains) from the ground through such means as defective water pipes, pipe joints, connections, or manholes. Infiltration does not include, and is distinguished from, inflow.

[19] Discharges from drinking water supplier distribution systems, provided appropriate BMPs are implemented based on the American Water Works Association (California-Nevada Section) *Guidelines for the Development of Your Best Management Practices (BMP) Manual for Drinking Water System Releases* (2005) or equivalent industry standard BMP manual.

[20] Unless an agricultural discharge constitutes a point source discharge to the Permittee's MS4 the Permittee shall be deemed to have "effectively prohibited" irrigation water in compliance with **Part II.B.3** if it demonstrates to the Board that it has taken measures to seek voluntary cooperation or employ regulatory controls, if available, to control the discharge of pollutants in agricultural discharges.

[21] Dechlorinated/debrominated swimming pool/spa discharges do not include swimming pool/spa filter backwash or swimming pool/spa water containing bacteria, detergents, wastes, or algaecides, or any other chemicals including salts from pools commonly referred to as "salt water pools" in excess of applicable water quality objectives.

[22] This includes firefighting training activities, which simulate emergency responses, and routine maintenance and testing activities necessary for the protection of life and property, including building fire suppression system maintenance and testing (e.g., sprinkler line flushing) and fire hydrant testing and maintenance. Structural and non-structural BMPs shall be implemented to reduce pollutants from essential non-emergency firefighting activities based on the CALFIRE, Office of the State Fire Marshal's Water-*Based Fire Protection Systems Discharge Best Management Practices Manual* (September 2011, prepared in cooperation with State Water Board) for water-based fire protection system discharges, and based on a local BMP manual for fire training activities and post-emergency firefighting activities.

[23] Emergency firefighting flows (e.g., discharges necessary for the protection of life or property such as building fire suppression system maintenance discharges or sprinkler line flushing) do not require immediate implementation of BMPs and are not classified as prohibited non-storm water. Discharges from vehicle washing, building fire suppression system maintenance and testing (e.g., sprinkler line

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3. For each non-storm water discharge in **Part II.B.2** that the Permittee or the Executive Officer identifies as a source of pollutants to waters of the United States, the Permittee shall satisfy the requirements to "effectively prohibit" such non-storm water by taking one of the following actions:

   a. Prohibit the discharge from entering its MS4 indefinitely through implementation of an Illegal Connection and Illicit Discharge Program (IC/ID) program that meets all requirements in 40 CFR section 122.26(d)(2)(iv)(B), including adequate legal authority, source identification and enforcement; or

   b. Not prohibit the non-storm water discharge but require the responsible parties to implement BMPs such that the discharges are no longer a source of pollutants to waters of the United States; or

   c. Coordinate with Central Valley Water Board staff to ensure that the source of non-storm water discharge is identified and obtains appropriate permit coverage – a separate NPDES permit for point sources, or coverage under the Irrigated Lands Regulatory Program for agricultural discharges. The Permittee shall effectively prohibit the discharge as described in **Part II.B.3.a**, above, until such permit coverage becomes effective.

4. Non-storm water discharges associated with emergency containment and/or cleanup of a pollutant spill or release may lawfully enter a MS4 provided that a) the non-storm water does not discharge from the MS4 to waters of the United States, b) the discharge is temporarily but fully contained in the MS4 to allow for characterization and disposal, c) the pollutants are subsequently removed from the MS4 system, and d) use of the MS4 system is necessary to address a threat to human health, the environment, and/or to avoid significant property damage.

III. EFFLUENT LIMITATIONS

A. Technology Based Effluent Limitations

Pollutants in storm water discharges from MS4s shall be reduced to the MEP.

B. Water Quality Based Effluent Limitations and Compliance Schedules

1. The Permittee shall comply with applicable water quality based effluent limits (WQBELs) established for the waste load allocations in TMDLs ~~listed~~ pursuant to~~in~~ **Attachment G** to this Order~~, pursuant to the applicable TMDL implementation plans and compliance schedules~~.

2. Where the final compliance deadline for an applicable TMDL has passed, the Permittee shall comply immediately with the WLA corresponding to that TMDL.

3. A Permittee requiring additional time to meet an applicable WLA in **Attachment G** that implements a "new, revised, or newly interpreted" water quality objective, as that

flushing), fire hydrant maintenance and testing, and other routine maintenance activities are not considered emergency firefighting activities.

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term is defined in the Compliance Schedule Policy,[24] may propose a compliance schedule as part of its SWMP or separately at a later date. Central Valley Water Board approval of a SWMP operates as approval and adoption of any compliance schedules contained therein. The Permittee's proposed compliance schedule shall include a justification satisfying the following criteria:

a. Diligent efforts have been made to quantify pollutant levels in the discharge and the sources of the pollutant in the waste stream, and the results of those efforts;

b. Source control efforts are currently underway or completed, including compliance with any pollution prevention programs that have been established;

c. A proposed schedule for additional source control measures or waste treatment;

d. Data demonstrating current treatment facility performance to compare against existing permit effluent limits, as necessary to determine which is the more stringent interim permit effluent limit to apply if a schedule of compliance is granted.

e. The highest discharge quality that can reasonably be achieved until final compliance is attained;

f. The proposed compliance schedule is as short as possible, given the type of facilities being constructed or programs being implemented, and industry experience with the time typically required to construct similar facilities or implement similar programs; and

g. Additional information and analyses to be determined by the Central Valley Water Board on a case-by-case basis.

4. A Permittee timely implementing a duly approved compliance schedule shall be deemed in compliance with the WQBELs covered by that compliance schedule.

Where the final compliance deadline for an applicable TMDL has passed, the Permittee shall comply immediately with applicable WLAs and/or receiving water limitations to implement for that TMDL. If the Permittee believes it requires additional time to meet such WLAs and/or receiving water limitations, the Permittee may request a time schedule order pursuant to California Water Code section 13300 for the Central Valley Water Board's consideration.

2.5. If the Permittee believes it requires additional time to meet such WLAs and/or receiving water limitations, the Permittee may request a time schedule order pursuant to California Water Code section 13300 for the Central Valley Water Board's consideration. A request for a time schedule order as described in **Part III.B.2** shall include sufficient information to demonstrate to the satisfaction of the Central Valley Water Board that the Permittee needs time to implement actions, such as designing and constructing facilities or implementing new or significantly expanded programs and securing financing, if necessary, to meet the applicable WQBELs. Such information may include the following If the Permittee believes it requires additional time beyond a TMDL's final compliance date to meet the

[24] State Water Board Resolution No. 2008-0025, p. 3 (April 15, 2008).

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applicable WLA, and that WLA does not implement a "new, revised, or newly interpreted" water quality objective as defined in the Compliance Schedule Policy, the Permittee may request a time schedule order pursuant to California Water Code section 13300 for the Central Valley Water Board's consideration. A request for a time schedule order shall include sufficient information to demonstrate to the satisfaction of the Central Valley Water Board that the Permittee needs time to implement actions, such as designing and constructing facilities or implementing new or significantly expanded programs and securing financing, if necessary, to meet the applicable WLA. Such information may include the following:

a. Data demonstrating the current quality of the MS4 discharge(s) in terms of concentration and/or load of the target pollutant(s) to the receiving waters subject to the TMDL;

b. A detailed description and chronology of structural controls and source control efforts, since the effective date of the TMDL, to reduce the pollutant load in the MS4 discharges to the receiving waters subject to the TMDL;

c. Justification of the need for additional time to achieve the water quality-based effluent limitations and/or receiving water limitations;

d. A detailed time schedule of specific actions the Permittee will take in order to achieve the water quality-based effluent limitations and/or receiving water limitations;

e. A demonstration that the time schedule requested is as short as possible, taking into account the technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary to comply with the effluent limitation(s); and

f. If the requested time schedule exceeds one year, the proposed schedule shall include interim requirements and the date(s) for their achievement.

6. If the requested time schedule exceeds one year, the proposed schedule shall include interim requirements and the date(s) for their achievement.

IV. RECEIVING WATER LIMITATIONS[25]

Discharges from MS4s shall not cause or contribute to exceedances of water quality standards in any receiving waters (hereinafter "receiving water limitations"), including but not limited to all applicable provisions contained in:

A. The Central Valley Water Board's Basin Plans, including beneficial uses, surface water quality objectives, compliance schedules and implementation plans;[26]

[25] A Permittee may comply with this **Part IV** by achieving full compliance with applicable provisions in **Part V.C.**

[26] For specific beneficial uses water quality objectives, implementation plans and applicable water bodies, see *Water Quality Control Plan for the Sacramento and San Joaquin River Basins* (Revised June 2015) and the *Water Quality Control Plan for the Tulare Lake Basin* (Revised January 2015) (collectively

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B. State Water Board policies and plans for water quality control;[27] and

C. Priority pollutant criteria promulgated by the USEPA through the following:

1. National Toxics Rule (NTR),[28] and
2. California Toxics Rule (CTR).[29]

V. PROVISIONS

A. Standard Permit Provisions and General Provisions

The Permittee shall comply with all applicable Standard Permit Provisions and General Provisions contained in **Attachment H** to this Order, in accordance with 40 CFR sections 122.41 and 122.42.

B. Application Requirements

The Order becomes effective on **XX XXXX 2016**. To obtain coverage under this Order on or after that date, each Permittee must submit a complete application for coverage as set forth below.

1. Notice of Intent (NOI)

a. To obtain initial coverage under this Order, each Permittee shall submit to the Central Valley Water Board a complete Notice of Intent (NOI) in accordance with the procedures below. An NOI must be completed and signed in accordance with the signatory requirements of the *Standard Permit Provisions and General Provisions* (**Attachment H**). The NOI shall also contain a brief preliminary explanation of how the Permittee intends to prioritize pollutants in its SWMP in accordance with **Part V.E**. Failure to submit a complete NOI package may delay approval to discharge under this Order.

i. A Permittee desiring coverage under this Order that, as of the Effective Date of this Order, was authorized to discharge under another Central Valley Water Board or State Water Board MS4 permit that has not yet expired shall submit a NOI to the Executive Officer no later than thirty (30) days prior to the expiration date of its current MS4 permit. A Permittee authorized to discharge pursuant to an administratively extended MS4 permit shall submit a NOI within thirty (30) days of the Effective Date of this Order. [40 CFR § 122.28(b)(2)(iii)].

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referred to as "Basin Plans" herein) at http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/index.shtml

[27] *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary*

[28] 40 CFR § 131.36.

[29] *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California*,(65 Federal Register 31682-31719 (May 18, 2000), adding 40 CFR section 131.38. If a water quality objectives and a CTR criterion are in effect for the same priority pollutant, the more stringent of the two applies.

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ii. A Permittee desiring coverage under this Order that was not previously authorized to discharge under another Central Valley Water Board or State Water Board MS4 permit shall submit a NOI at least ninety (90) days in advance of the anticipated discharge date to provide time for review of the application package (40 CFR § 122.28(b)(2)(iii)). This time period may be waived by the Executive Officer;

iii. An application fee is required only for Permittees described in **Part V.B.1.a.ii**, above. A Permittee applying for coverage under this Order which has already been enrolled under a previous Central Valley Water Board or State Water Board MS4 permit will be billed during the regular annual billing cycle.

iv. Some Permittees are required under their existing Central Valley Water Board or State Water Board MS4 permits to submit a Report of Waste Discharge (ROWD) 180 days prior to the expiration of their permit. If, before the expiration of the 180-day deadline, such Permittees instead submit a letter to the Executive Officer committing to submit a NOI no later than thirty (30) days prior to the expiration of their permit, the Central Valley Water Board will not pursue enforcement for failure to timely file a ROWD unless the Permittee fails to submit a NOI by such 30-day deadline.

b. Within ninety (90) days of receipt of a NOI, the Central Valley Water Board will either issue a Notice of Applicability (NOA) or deny the NOI if incomplete. If a NOA is issued the Permittee is authorized to discharge pursuant to this Order starting on the date indicated on the NOA (40 CFR section 122.28(b)(2)(iii)).

c. Upon issuance of a NOA to a Permittee described in **Part V.B.1.a.i** (i.e., existing MS4 Permittees), this Order rescinds the Permittee's preexisting permit except for enforcement of permit violations that occurred prior to the issuance of the NOA. ~~.~~ Permittees listed in the preexisting permit who have not received a NOA under this Order shall continue to be subject to regulation pursuant to the preexisting permit. If all Permittees have been removed from the preexisting permit then this Order rescinds the preexisting permit, except for enforcement purposes as stated above.

2. Fees

The fee for enrollment under this Order is payable to the "State Water Resources Control Board" and shall be based on Title 23, CCR, section 2200, which is available at: http://www.waterboards.ca.gov/resources/fees/water_quality/.

3. Terminating Coverage

a. To terminate coverage under this Order, the Permittee must submit a complete and accurate Notice of Termination (NOT) provided in **Attachment M** following permanent termination of a discharge, upon transfer of ownership to another entity, or where discharges will be authorized under another Order. The Permittee's authorization to discharge and obligations under this Order shall terminate immediately upon approval of the NOT. Until a NOT is approved, the Permittee shall remain subject to the terms and conditions of this Order and is responsible for submitting the annual fee and all reports associated with this Order.

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b. The Permittee shall submit a NOT when one of the following conditions occurs:

i. The Permittee has ceased all discharges to waters of the United States for which the MS4 obtained coverage under this Order and does not expect to discharge during the remainder of this permit term; or

ii. The Permittee has obtained coverage under an individual permit or an alternative general permit for all discharges required to be covered by an NPDES permit.

C. Alternative Compliance Pathway

1. For pollutant-water body combinations addressed in a Permittee's SWMP that are not addressed in a TMDL, the Permittee shall be deemed in compliance with **Parts II.A** *(Storm Water Prohibitions)* **and IV** (*Receiving Water Limitations*) as long as:

a. The Permittee is fully implementing a duly approved SWMP that meets the requirements of **Parts V.C.4 and V.E.3**; and

b. The Permittee either:

i. Is meeting all applicable milestones and final dates for attainment of water quality standards in the SWMP, or

ii. Complies with the procedure described in **Part V.C.5** ~~**or V.C.7**~~.

2. For the purposes of determining compliance with **Part IV**, a Permittee's "final attainment" of a water quality standard shall mean either that the Permittee's MS4 discharges are no longer causing or contributing to exceedances of that water quality standard in any receiving water or that the receiving water is meeting water quality standards. A Permittee shall only be deemed in such final attainment when it is verified through monitoring and reporting results.

3. For pollutant-water body combinations addressed in a TMDL, compliance with applicable TMDL requirements in **Attachment G** shall constitute compliance with **Part IV**.

4. To be deemed in compliance with **Parts II.A and IV** as described in **Part V.C.1**, the Permittee's SWMP must ensure continual progress toward final attainment of applicable water quality standards by including the following:

a. Specific and enforceable requirements.

b. Milestones toward final attainment for each PWQC[30] that are either numeric water quality outcomes (hereinafter "water quality milestones") or readily verifiable, specific actions that are prerequisites to achieving such water quality outcomes—including but not limited to preparing a planning document or obtaining financing or approval for a capital improvement project (hereinafter

[30] *See* **Part V.E**, *infra*.

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"non-water quality milestones") For each PWQC, the SWMP must include at least one milestone[31] per year, including a date for its achievement, as well as a final date of attainment. For each PWQC the SWMP must include at least one water quality milestone per five (5) years.

c. An analysis or study complying with **Part V.E.3.b** demonstrating that implementation of the water quality improvement strategies in the SWMP will achieve milestones and final attainment with water quality standards by the scheduled dates for their achievement.

5. If, after complying with **Parts V.D, V.E, and V.F**, the Permittee detects[32] or receives notification from the Central Valley Water Board that a water quality milestone or a final date for attainment ~~of~~ for a water quality standard in the Permittee's SWMP was not met, the Permittee shall complete the following:

a. Re-assess its MS4 discharges' contribution of the relevant pollutant(s) to receiving waters and the sources of the pollutant(s) within the drainage area of the MS4. If such re-assessment shows that the Permittee's discharges did not cause or contribute to non-achievement of the water quality milestone or final date of attainment, no further action is required and the Permittee shall continue to implement its SWMP.

b. If discharges from the Permittee's MS4 are identified as a source of pollutant(s) that have caused or contributed to not achieving the milestone or final date for attainment of a water quality standard, address such non-compliance through timely modifications to its SWMP pursuant to **Parts V.E.5 and V.E.6** (*Effectiveness Assessment; Adaptive Management and Modification*). The modified SWMP shall identify the revised water quality control measures, milestones, and final date of attainment that will ensure an improved rate of progress toward attainment of water quality standards.

c. Modify the Reasonable Assurance Analysis (RAA) pursuant to **Parts V.E.5 and V.E.6** (*Effectiveness Assessment; Adaptive Management and Modification*) to reflect the Permittee's updated knowledge about the pollutant(s) and revised water quality control measures, milestones, and final date of attainment. The Permittee shall submit with its modified RAA a summary explanation of why implementation of its SWMP did not result in meeting the water quality milestone or final date of attainment.

d. To be deemed in compliance with this **Part V.C.5**, the Permittee must submit its revised SWMP and RAA to the Executive Officer within six (6) months of

[31] Annual milestones for each PWQC may be either water quality milestones or non-water quality milestones, but they must build upon previous milestones and lead to final attainment of applicable water quality standards for that PWQC. The annual milestones may consist of water quality improvement strategy implementation phases, interim numeric goals, and/or other acceptable metrics.

[32] "Detection" by a Permittee may include a Permittee's determination prior to a deadline, based on monitoring or other relevant data, that it will not be able to meet a water quality milestone/final date of attainment. . If the Permittee thereafter obtains a timely extension of the applicable deadline pursuant to **Part V.C.7,** the Permittee's failure to meet the preexisting deadline shall not trigger **Part V.C.5**.

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detecting or receiving notice from the Central Valley Water Board (whichever is earlier) that the water quality milestone or final date of attainment was not met.[33] Notwithstanding the Permittee's compliance with the procedures in this **Part V.C.5**, the Permittee will be deemed in violation of this Order if the Executive Officer determines that the Permittee's failure to achieve the water quality milestone or final date of attainment resulted from failure to fully implement its SWMP. Such determination will be delivered in writing.

6. If the Permittee fails to meet any water quality milestone or final date for attainment of a water quality standard in an approved SWMP, and thereafter fails to timely seek appropriate modifications to its SWMP and RAA as described in **Part V.C.~~3~~5**, this Order shall hold the Permittee to strict compliance with **Parts II.A and IV** for the pollutant-water body combination(s) that were to be addressed by the SWMP provisions that were not met.

7. For pollutant-water body combinations that are not addressed by a TMDL, the Permittee may request an extension of a deadline for achieving a water quality milestone or final attainment of a water quality standard at least ninety (90) days prior to the deadline. Such requests must be in writing, shall include a justification for the extension, and shall state (i) when the Permittee expects to achieve the water quality milestone, and (ii) whether the delayed date for achievement of the water quality milestone will result in corresponding delays for other milestones or for the final date of attainment for any PWQC. The Executive Officer shall publish notice and accept comments on such extension requests for a period of thirty (30) days. Extensions may be approved at the discretion of the Executive Officer, but they must be affirmatively approved to be effective. The Permittee shall become subject to **Part V.C.5** upon denial of an extension request.

8. When a Permittee becomes aware that it has missed or will miss the date for achieving a non-water quality milestone (e.g., delays in obtaining City Council approval or financing for a capital improvement project, delays in adoption of an ordinance), the Permittee shall notify the Central Valley Water Board in writing as soon as possible, but no later than thirty (30) days after the delay becomes evident. In such written notice, the Permittee shall indicate (i) when it expects to achieve the non-water quality milestone, and (ii) whether the delayed date for achievement of the non-water quality milestone will result in corresponding delays for other milestones or for the final date of attainment for any PWQC. If failure to timely achieve the non-water quality milestone will prevent the Permittee from meeting any water quality milestone or final attainment by the date scheduled in its SWMP, the Permittee shall request appropriate extensions in accordance with Part V.C.7.

9. Between a Permittee's receipt of a NOA and approval of its SWMP, a Permittee's full compliance with all of the following requirements shall constitute the Permittee's compliance with **Parts II.A, III.B, and IV**:

a. The Permittee's NOI was timely submitted in accordance with **Part V.B.1**;

[33] If the Permittee determines that it will not be able to meet a water quality milestone or final date of attainment prior to the relevant deadline, six months shall be measured from the date for achieving that water quality milestone or final attainment of water quality standards.

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b. The Permittee meets all deadlines for development of a SWMP; and

c. The Permittee continues full implementation of its existing Storm Water Management Program.

10. A comprehensive audit of the RAA is required at least once every 10 years. If the audit finds that the RAA is no longer current or accurate, then the Permittee shall revise the RAA and submit it to the Central Valley Water Board for approval consistent with the schedule in **Part V.F.2**, Steps **3.a** through **4.d**. The audit requirement may be waived by the Executive Officer if all water quality milestones are being met.

D. Performance-Based and Prescriptive-Based Approaches

This Order specifies two distinct and mutually exclusive approaches for the Permittee to comply with this permit authorized under the Clean Water Act, including compliance with discharge prohibitions and receiving water limitations. The primary compliance approach (Performance-Based) allows the participating Permittee to develop a customized storm water management program. The secondary compliance approach (Prescriptive-Based) is reserved only for Permittees that are unsuccessful in complying with the requirements under the Performance-Based approach, and shall follow a more traditional approach to compliance instead.

1. Performance-Based Approach

The Performance-Based approach focuses on the outcomes to be achieved rather than prescribing ~~the step-by-step processes~~specific actions with ~~to~~ which Permittees shall comply. In its SWMP, a Permittee describes prioritized water quality constituents and ~~water quality improvement~~ milestones, strategies, and activities based on those prioritized water quality constituents. This approach allows the Permittee to optimize water quality improvements by shifting resources and taking different approaches to achieving outcomes or performance. This approach allows the Permittee to address prioritization of water quality issues within their Jurisdictional Runoff Area by describing customized Storm Water Management Program milestones, strategies, and activities in their SWMP consistent with the requirements of this Order.

2. Prescriptive-Based Approach

a. This Order contains prescriptive permit requirements that serve as a “backstop” if a Permittee fails to implement the Performance-Based approach in the manner described herein. The Executive Officer may require implementation of the Prescriptive-Based approach if the Permittee fails to:

i. Develop deliverables described in **Part V.F.2** that fully comply with the requirements of this Order and/or submit such deliverables within the timeframes described in **Part V.F.2**; or

ii. Fully implement and adaptively manage an effective Storm Water Management Program as described in a SWMP prepared under the Performance-Based approach and approved by the Central Valley Water Board.

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b. A Permittee that becomes bound by the Prescriptive-Based approach in accordance with **Part V.D.2** is ineligible to participate in the Performance-Based approach for a period of five (5) years from the effective date of the decision by the Executive Officer. When the Permittee has demonstrated full compliance with the requirements of this Order after five (5) years, the Permittee may submit a written request to be re-instated in the Performance-Based approach to the Executive Officer. The Executive Officer may re-institute implementation of the Performance-Based approach when it is determined that the Permittee has achieved or will achieve full compliance with the requirements of this Order. The Executive Officer may, at his/her discretion, re-institute the Performance-Based approach for a Permittee earlier than five (5) years from his/her decision under **Part V.D.2**.

E. Implementation of the Water Quality Focused Framework in Storm Water Management Programs

For both the Performance- and Prescriptive-Based compliance approaches authorized under this Order, the overall water quality focused framework is illustrated in **Attachment A** (*Water Quality Focused Framework for Order R5-2016-XXXX*). The process consists of six overarching steps: assessment, prioritization, development/modification, implementation, effectiveness assessment and reporting, and adaptive management. A Permittee that complies pursuant to the Performance-Based approach shall address all steps in this process. A Permittee that complies pursuant to the Prescriptive-Based approach shall address all steps in this process except prioritization.

Under the Performance-Based compliance approach the Permittee must identify the highest priority water quality constituents (PWQCs) within its Jurisdictional Runoff Area that will be addressed by the SWMP. Under the Prescriptive-Based compliance approach, all water quality constituents shall be treated as PWQCs. As determined by the Permittee(s), the Jurisdictional Runoff Area(s) may be combined or separated into geographical areas, drainage areas, watersheds, or sub-watersheds to assist in focusing the water quality prioritization and SWMP implementation efforts. Although the process is generally outlined below, each Permittee will identify how the local PWQCs are determined on a site specific basis. For these assessments, each Permittee shall rely on readily available and relevant existing data and information.

Permittees may have existing programs that can be used to satisfy parts of these requirements. The Permittee may start at any step in the process so long as the preceding step(s) have been completed consistent with this Order. The Permittee's Storm Water Management Program shall integrate a water quality focused framework describing each step in the process within its SWMP.

1. Assessment

The purpose of the assessment step is to develop a list of water quality constituents (WQCs) that may be adversely impacting water quality. The Permittee shall identify all water quality issues within its Jurisdictional Runoff Area in order to identify WQCs within its local receiving waters and MS4 discharges. The Permittee shall describe its methodology and all criteria used to identify local water quality issues in its SWMP, including:

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i. Data source(s) for each WQC;

ii. The geographic extent of the WQC's impact, if known;

iii. The temporal extent of the WQC's impact (e.g., dry weather and/or wet weather or other driving cyclic patterns, if known); and

iv. The adequacy of available data and data gaps in the monitoring data relied on to develop a list of WQC.

a. Assessment of Receiving Water Conditions

Based on a compilation of available monitoring data from receiving water monitoring locations, the Permittee shall evaluate the range of water quality issues that may be adversely impacting receiving water quality within its Jurisdictional Runoff Area. For the assessment, the Permittee should consider WQCs as identified in the following sources:

i. Total Maximum Daily Loads(TMDLs) and CWA section 303(d) List

(1) TMDLs adopted and/or under development by the Central Valley Water Board for water bodies or segments of water bodies within the Permittee's Jurisdictional Runoff Area where the Permittee and/or water body or water body segment has received a waste load allocation (**Attachment G**, *Specific Provisions for Total Maximum Daily Loads Applicable to Order R5-2016-XXXX*). Sources for pollutants should have been identified as urban runoff and/or storm water runoff; and

(2) The most current USEPA approved CWA section 303(d) listing of water bodies or water body segments and associated pollutants;

ii. Results of water quality monitoring conducted by the Permittee;

iii. Results of special studies conducted along receiving waters, including;

(1) Bioassessment monitoring;

(2) Sediment or water column toxicity monitoring; and

(3) Constituent focused (e.g., dissolved oxygen, nutrients) monitoring;

iv. Other monitoring efforts, such as:

(1) Litter/Trash impacts;

(2) Physical habitat;

(3) Hydromodification monitoring and implementation;

(4) Water and sediment quality data and information collected or compiled by other entities.[34]

[34] Sources may include the California Environmental Data Exchange Network (CEDEN), at http://www.ceden.org/; USEPA's STORET/Water Quality Exchange (WQX), at

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b. Assessment of MS4 Discharges

Based on the results of **Part V.E.1.a**, the Permittee shall evaluate its MS4 discharges' contribution to the range of water quality issues that were identified in the receiving waters within the Jurisdictional Runoff Area. From that data, the Permittee shall identify a list of WQCs that represent water quality issues in receiving waters attributable to the Permittee's MS4 discharges.

c. Assessment Showing Final Attainment

If the assessments conducted pursuant to **Parts V.E.1a and V.E.1.b** demonstrate that the Permittee's discharges are not causing or contributing to exceedances of any applicable WQS, the Permittee shall provide the Central Valley Water ~~board~~ Board with evidence demonstrating the Permittee's attainment of all applicable WQSs. Upon receiving concurrence from the Executive Officer, the Permittee shall continue implementing its ~~existing~~ Storm Water Management Program, including but not limited to applicable monitoring and reporting. Based on the results of the adaptive management process in **Part V.E.6**, the Permittee shall report any modification necessary to improve the effectiveness of the Storm Water Management Program. If monitoring results indicate that the Permittee is not ~~longer~~ in attainment with one or more WQSs, then the Permittee shall revise its SWMP to address those WQSs pursuant to **Part V.E** and comply per **Part V.C.**

2. Prioritization

The purpose of the prioritization step is to rank the assessed WQCs, thereby identifying the highest priority WQCs (PWQCs) to be addressed by the Permittee's Storm Water Management Program. Using the information obtained through the assessment step, the Permittee shall generate a list of PWQCs that are not being attained within its receiving waters and for which the MS4 discharges are causing or contributing to exceedances of WQS. The SWMP shall provide a clear explanation justifying the prioritization criteria and methods for the selection of the PWQCs. Under the Prescriptive-Based compliance approach, all WQCs shall be treated as PWQCs.

3. Development

The purpose of the development step is for the Permittee to structure the SWMP to address the PWQCs it identified during the prioritization step.

Using the steps described below, the Permittee shall identify ~~effective~~ appropriate ~~water quality improvement~~ milestones, strategies and activities that, over time, will ensure that the Permittee's MS4 discharges will no longer cause or contribute to exceedances of water quality standards in any receiving water. The milestones, strategies and activities shall address the PWQC(s) by (1) effectively prohibiting non-

http://www.epa.gov/storet/; United States Geological Survey's Water Quality Portal, at http://water.usgs.gov/owq/data.html; and other site specific studies conducted by watershed groups, academic and/or research institutions.

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storm water discharges into the MS4, (2) reducing pollutants in storm water to the MEP, and (3) taking other measures necessary to ensure that the Permittee's MS4 discharges do not prevent attainment of water quality standards in receiving waters. The results of the assessment, prioritization, and development steps shall be incorporated into the Permittee's SWMP for future modification based on effectiveness assessments.

a. Identify ~~Water Quality Improvement~~ Milestones, Strategies, and Activities for Storm Water Management Program

i. The Permittee shall identify interim ~~water quality improvement~~ milestones and final dates of attainment for each PWQC.[35] The milestones shall be based on measureable quantifiable criteria or indicators capable of demonstrating progress toward final attainment of water quality standards.

(1) "Milestones," as used in this Order, are the interim benchmarks for measuring a Permittee's progress toward meeting applicable WQBELs and/or ensuring that its MS4 discharges no longer cause or contribute to exceedances of applicable water quality standards in any receiving water. Milestones must be numeric or otherwise measurable, and must relate either to taking a specific action or achieving a numeric water quality-related outcome. Subsequent milestones must build on previous ones, and each milestone must include a date for its achievement. Permittees must identify at least one annual milestone for each PWQC.

(2) With the exception of final dates for achieving WQBELs in a TMDL, final dates for attaining water quality standards may be modified in accordance with the procedure described in **Part V.C.3**.

ii. The Permittee shall identify specific strategies and activities for timely achieving milestones and final dates of attainment through its Storm Water Management Program. For each PWQC, such strategies and activities shall be designed to ensure that, by the final dates of attainment, the Permittee's MS4 discharges will cease to cause or contribute to exceedances of applicable water quality standards in ~~any~~ receiving waters. The Permittee's SWMP shall include a general schedule for implementing the strategies and activities identified in this step. Detailed implementation schedules will be developed as part of the Work Plan.

iii. The Permittee shall identify the approach for monitoring and each program element to address the PWQCs, including the pollution prevention, operational source controls, and/or any other actions or programs capable of achieving final attainment with water quality standards.

iv. The Permittee shall identify the management questions and metrics that will be used to measure the program effectiveness and verify whether the

[35] Milestones may take a variety of forms, such as receiving water limitations, interim or final WQBELs established in TMDLs, action levels or benchmarks, pollutant concentration, load reductions, number of impaired water bodies delisted from the List of Water Quality Impaired Segments, Index of Biotic Integrity (IBI) scores, or other appropriate metrics.

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program is meeting the established milestones. The following management questions may be used to assist in guiding the development of a monitoring program, ~~and~~ assist with the prioritization of storm water management efforts[36], and/or develop milestones:

(1) Are applicable water quality standards being met in receiving waters?

(2) If standards are not being met, what is the extent and magnitude of the current or potential receiving water problems? What is the relative urban runoff contribution to the receiving water problem(s)?

(3) Where urban runoff is determined to cause or contribute to the receiving water problem(s), what are the pollutant sources?

(4) Of the identified urban runoff sources, which readily avail themselves to correction by the municipality such that efforts can be prioritized?

(5) After control strategies are implemented, are conditions in MS4 discharges and receiving waters getting better or worse?

v. The Permittee shall develop an effectiveness assessment approach and associated metrics to assess the efficacy of the Storm Water Management Program's ~~water quality improvement~~ milestones, strategies, and activities as described in **Part V.E.5**.

b. Reasonable Assurance Analysis

For the PWQC(s), the Permittee shall conduct and submit with its SWMP a Reasonable Assurance Analysis (RAA) providing reasonable assurance that the Permittee's proposed strategies and activities will succeed in timely achievement of all water quality milestones, and final dates for attaining water quality standards. The Permittee may address multiple PWQCs in a single RAA, but each PWQC must be addressed by at least one RAA.

The RAA must be, at a minimum, a quantitative evaluation that relies on (1) best management practices performance data, and (2) reasonable assumptions that are clearly stated. The RAA must be supported, at least in part, by models that are in the public domain or by comparable methodologies with wide acceptance, such as trend analyses that demonstrate the necessary level of feasible control measure implementation so that the discharges do not cause or contribute to exceedances of water quality standards. The evaluation should provide an error estimate for annual average loads or other relevant targets or propose modifications to the assessment program to refine the quantification as new information is collected. The models may use established surrogate relationships between water quality constituents and PWQC concentrations and/or loads.

Models to be considered for the RAA include, but are not limited to: land/watershed model (e.g., Hydrologic Simulation Program-FORTRAN (HSPF)

[36] The management questions are based, in part, on the Storm water Monitoring Coalition's Model Monitoring Technical Committee Technical Report #419: *Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California*. ftp://ftp.sccwrp.org/pub/download/DOCUMENTS/TechnicalReports/419_smc_mm.pdf

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model), BMP performance models (e.g., Storm Water Management Model (SWMM) BMP model), or integrated BMP model (e.g., USEPA System for Urban Stormwater Treatment and Analysis Integrational (SUSTAIN) model). To the extent that multiple Permittees propose to address the same PWQC(s) with the same/substantially similar strategies and activities, those Permittees may pool their resources to jointly conduct and rely on an RAA. In addition, the RAA may evaluate multiple constituents and ultimately identify the limiting pollutant that drives the implementation strategies and activities.

The RAA shall commence with assembly of the available, relevant data collected, including land use and pollutant loading data, establishment of quality assurance/quality control (QA/QC) criteria, QA/QC checks of the data, and identification of the data set meeting the criteria for use in the analysis. These data shall be statistically analyzed to determine the best estimate of performance and the confidence limits on that estimate for the pollutants to be evaluated. Based on estimated baseline conditions and pollutant loadings, required pollutant reductions are estimated and best management practices and an implementation schedule will be generated. The RAA shall be submitted in accordance with the SWMP development timeframes described in **Part V.F.2**.

c. Storm Water Management Plan

The objective of the SWMP is to describe a Storm Water Management Program that identifies and addresses MS4 discharge impacts so that such discharges do not cause or contribute to exceedances of water quality standards in waters of the United States. As such, the implementation of the SWMP and this Order provides the basis of compliance with **Parts II, III, and IV** (*Discharge Prohibitions*, *Effluent Limitations*, *and Receiving Water Limitations*). The SWMP shall describe the Permittee's Storm Water Management Program, including ~~water quality improvement~~ milestones, strategies and activities, and their corresponding schedules for implementation.

Regardless of whether the Permittee is bound by the Performance-Based or Prescriptive-Based approach, a SWMP shall be developed and submitted for approval by the Central Valley Water Board.

If the Permittee or a group of Permittees has already developed a SWMP, the Permittee(s) may assess the existing SWMP to determine what modifications, if any, are necessary in order to comply with this Order. If the existing SWMP meets the requirements of this Order, then it is not necessary to revise the SWMP further. In either case, the Permittee or group of Permittees shall submit the SWMP for approval by the Central Valley Water Board.

In the case where a Permittee would like to collaborate, or has traditionally collaborated, in whole or in part with other MS4 Permittees to manage its MS4 permit compliance, those Permittees may submit one combined SWMP that describes the consolidated or coordinated Storm Water Management Program milestones, strategies, and activities. However, SWMPs developed jointly shall identify each Permittee's separate roles and responsibilities implementing a coordinated Storm Water Management Program. Each Permittee is individually responsible for compliance with this Order, the coordinated Storm Water Management Program, and the joint SWMP.

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i. Performance-Based Approach

The Permittee shall develop a SWMP describing their Storm Water Management Program consistent with the Performance-Based approach described in **Attachment J** (*Performance-Based Approach Requirements*).

ii. Prescriptive-Based Approach

If the Executive Officer determines that a Permittee has been unsuccessful in complying with requirements described under the Performance-Based approach, **Attachment J** (*Performance-Based Approach Requirements*), the Permittee shall instead follow the Prescriptive-Based approach described in **Attachment K** (*Prescriptive-Based Approach Requirements*).

4. Implementation

Once the Permittee receives Central Valley Water Board approval of the SWMP developed pursuant to this Order, the Permittee shall immediately transition to implementation of that SWMP and its corresponding Work Plan.[37] Central Valley Water Board approval of a Permittee's SWMP renders that SWMP an enforceable component of this Order. Prior to such approval, the Permittee shall continue full implementation of its preexisting Storm Water Management Program.

5. Effectiveness Assessment

a. General Requirements of Effectiveness Assessment Program

As a part of the SWMP, the Permittee shall develop and implement an effectiveness assessment approach[38] to track the short- and long-term effectiveness of its Storm Water Management Program in addressing the PWQCs. The effectiveness assessment approach shall address the ~~programmatic~~ non-water quality and/or water quality milestones and identify the following for each PWQC:

i. The milestones that will be addressed as well as the corresponding outcome levels, management questions and metrics that will be used for the assessment[39];

ii. The data assessment and data collection methods that will be utilized; and

[37] See **Part V.F.3**, *infra*, for discussion of Work Plan.
[38] The approach may be informed by one or more of the following guidance documents or equivalent (1) *Evaluating the Effectiveness of Municipal Stormwater Programs*, EPA 833-F-07-010, USEPA, January 2008; (2) *A Strategic Approach to Planning for and Assessing the Effectiveness of Stormwater Programs*, February 2015, California Stormwater Quality Association; and (3) *Program Effectiveness Assessment Improvement Plan Framework*, April 2015, https://www.casqa.org/resources/stormwater-effectiveness-assessment/guidance-document
[39] The effectiveness assessment should focus on the outcome levels and metrics that are most applicable to the specific goals established for the PWQC(s).

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iii. The timeframe (i.e., short- and/or long-term) for assessing each of the management questions.

The effectiveness assessment approach will assist the Permittee in adaptively managing its Storm Water Management Program so that it effectively addresses the PWQCs and tracks the progress of the SWMP in achieving the identified milestones. The results of the effectiveness assessments will be provided in in the Mid-Term Report (short term effectiveness assessment) and End-~~of-~~Term Report (short and/or long term effectiveness assessment).

b. Specific Requirements for Long Term Effectiveness Assessments

The Permittee shall conduct long term assessments of its MS4 discharges and receiving water conditions in the Jurisdictional Runoff Area based on relevant data collected pursuant to the requirements of this Order. The assessment results will be provided in the End-Term Report.

i. Receiving Water Assessment

The Permittees shall assess the status and trends of receiving water quality conditions within the Jurisdictional Runoff Area under dry weather and wet weather conditions.

ii. MS4 Discharge Assessment

The Permittee shall assess the status and trends of MS4 discharge conditions within the Jurisdictional Runoff Area under dry weather and wet weather conditions. This may include, as applicable, a calculation or estimation of the storm water volumes, pollutant concentrations, and/or pollutant loads discharged from the MS4.

~~iii. Storm Water Pollutant Discharges Reduction Assessment~~

~~The Permittees shall analyze the monitoring data collected pursuant to the monitoring and assessment requirements, and utilize a watershed model or other method, to calculate or estimate storm water volumes and pollutant loads discharged from the MS4s in the Permittee's jurisdiction within the Jurisdictional Runoff Area.~~

c. Effectiveness Assessment Reporting

When reporting on the effectiveness of its Storm Water Management Program, the Permittee shall:

i. Identify the management questions and metrics that were used for the assessment;

ii. Identify the direct and/or indirect measurements that were used to track the effectiveness of the Storm Water Management Program as well as the outcome levels at which the assessment is occurring; and,

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iii. Track the progress of the SWMP towards achieving the ~~programmatic~~ milestones, strategies, and activities aimed at improving water quality; and,

iv. At the end of Year 3, the Permittee shall provide short term effectiveness assessment results in the Mid-Term Report; and,

v. At the end of Year 5, the Permittee shall provide a long term effectiveness assessment in the End-Term Report.

6. Adaptive Management and Modification

The Permittee shall implement an adaptive management approach and modify the SWMP and/or Work Plan so that the Storm Water Management Program is effective over the long term. The adaptive management process fulfills the requirements in **Part V.C** to address continued exceedances of water quality standards. As applicable, the Permittee shall evaluate the results of each effectiveness assessment and determine if significant progress is being made and/or if the identified milestones are being achieved. The adaptive management approach shall be described in the Permittee's SWMP. Specifically, the Permittee shall develop and implement an adaptive management approach that addresses the following:

a. Progress towards achieving improved water quality in receiving waters and/or MS4 discharges, based on the Effectiveness Assessment (**Part V.E.5**);

b. Achievement of milestones and final dates for attainment of water quality standards, including providing quantifiable reductions in pollutant concentrations and/or loads in MS4 discharges over time;

c. Re-evaluation of the water quality priorities based on newly identified sources and/or more recent monitoring data for discharges from the MS4 and the receiving water(s), and the effectiveness of implemented pollutant controls;

d. Overall status of attainment of water quality standards; and

e. Availability of new information and data from sources other than the Permittee's monitoring program(s) that informs the effectiveness of the actions implemented by the Permittees.

Based on the results of the adaptive management process, the Permittee shall report any modification, including of milestones, with the exception of those compliance deadlines established in a TMDL, necessary to improve the effectiveness of the Storm Water Management Program, and may request a compliance schedule if available. The Permittee shall identify Storm Water Management Program modifications to be revised in the Permittee's SWMP.

The Permittee may propose minor modifications to the Storm Water Management Program through changes to its Work Plan. Such minor modifications shall be submitted to the Executive Officer and shall become effective upon (1) approval by the Executive Officer, or (2) ninety (90) days after submittal if the Executive Officer expresses no objections.

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F. Required Deliverables

The purpose of this provision is to set forth the reporting requirements that will document compliance with this Order. The goal of reporting is to communicate to the Central Valley Water Board and the people of the State the implementation status of each Storm Water Management Program and compliance with the requirements of this Order. This goal is to be accomplished through the submittal of specific deliverables to the Central Valley Water Board by the Permittee.

1. Notice of Intent

The Permittee shall submit a complete NOI package in accordance with **Part V.B.1**.

2. Storm Water Management Plans

The Permittee shall develop and submit a SWMP to the Central Valley Water Board for approval. The SWMP shall include the requirements described under **Parts V.A. and V.E.3**. The SWMP, including the RAA, shall be submitted in accordance with the following table:

Timeline for the Development of the Storm Water Management Plan (SWMP)

Item			Submitted By	Submitted To	Submitted As Soon As Possible, but No Later Than
Notice of Intent and Prioritization Approach	1a.	Notice of Intent (NOI) & Preliminary Prioritization Approach	Permittee	Central Valley Water Board	In accordance with **Part V.B.1** of this Order
	1b.	Notice of Applicability (NOA) & Approval of Preliminary Prioritization Approach	~~Regional~~ Central Valley Water Board	Permittee	After receipt of NOI (Item 1a)
Assessment and Prioritization	2a.	Assessment & Prioritization Results, and Methodology Proposed for Reasonable Assurance Analysis (RAA)	Permittee	Central Valley Water Board	6 months after receipt of NOA (Item 1b)
	2b.	Meet and confer with Central Valley Water Board staff. Central Valley Water Board staff to provide comments to Permittee.	---	---	---
Strategies & Milestones	3a.	Identify Strategies & Milestones and Run RAA	Permittee	Central Valley Water Board	12 months after receipt of comments from Central Valley Water Board (Item 2a/b)
	3b.	Meet and confer with Central Valley Water Board staff. Central Valley Water Board staff	---	---	---

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		to provide comments to Permittee.			
Development of Storm Water Management Plan (SWMP)	4a.	Submittal of Draft SWMP	Permittee	Central Valley Water Board	3 months after receipt of comments from Central Valley Water Board (Item 3a/b)
	4b.	Meet and confer with Central Valley Water Board staff. Central Valley Water Board staff to provide comments to Permittee.	---	---	---
	4c.	Address comments and submit Final SWMP	Permittee	Central Valley Water Board	3 months after receipt of comments from Central Valley Water Board (Item 4b)
	4d.	Approval of SWMP by ~~Regional~~ Central Valley Water Board	---	---	TBD

3. Work Plan

The Permittee shall develop a five (5) year Work Plan to be submitted as a companion document to the SWMP. The Work Plan must contain a detailed implementation schedule that that identifies the specific, detailed tasks a Permittee performs in order to implement the strategies and activities in its SWMP. The Permittee shall review the Work Plan on an annual basis to determine if any modifications are necessary in order to effectively implement the Storm Water Management Program, including achievement of identified milestones. The Work Plan may be modified during the Annual Reporting process. The Work Plan and modifications to the Work Plan must be approved by the Executive Officer.

4. Annual Reports

a. The Permittee shall submit an Annual Report for each reporting period no later than October 1 of each permit year. The Annual Report shall include:

i. A statement certifying that the Storm Water Management Program and Work Plan were implemented as approved;

ii. A summary of activities and tasks scheduled to be implemented in the upcoming year. If the Work Plan is still being implemented as described from the previous year, the Permittee may refer to the Work Plan;

iii. A~~a~~ny proposed minor modifications to the Storm Water Management Program; or any proposed Work Plan Modification; and

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iv. A completed certification statement, in accordance with the signatory requirements in **Attachment H** (*Standard Permit Provisions and General Provisions)*.

b. The Annual Report covers activities for the previous fiscal year for the reporting period of July 1 through June 30th.

c. If the Permittee collects monitoring data the Permittee shall provide the collected monitoring data or documentation required under this Order to the Central Valley Water Board. Any collected monitoring data shall be uploaded to the California Environmental Data Exchange Network (CEDEN)[40], or the Storm Water Multi-Application Reporting and Tracking System (SMARTS) database when available.

d. Additional requirements described in 40 CFR 122.42(c) (**Attachment H**, *Standard Permit Provisions and General Provisions*) are hereby incorporated into this Order by reference.

5. Mid-Term and End-Term Reports

The Permittee shall develop and submit a Mid-term and an End-~~of~~ Term Report to the Central Valley Water Board. The Mid-Term Report shall be submitted within three (3) years of receiving a NOA under this Order or three (3) years after the last End-Term Report, and the End-Term Report shall be submitted within five (5) years of receiving the NOA or five (5) years after the last End-Term Report. The Mid-Term and End-Term Reports shall serve as the Annual Report for the years submitted. The Mid-Term and End-Term Reports shall include the following:

a. Cumulative summary of Storm Water Management Program activities conducted by the Permittee;

b. Status of progress towards attainment of SWMP milestones and implementation of the strategies, and activities. If any SWMP milestones or final dates for attainment were not met, the Permittee shall provide detailed explanations;

c. Cumulative summary of the monitoring data including:

i. All physical, chemical, and biological monitoring data collected to date; and

ii. Data analytical results[41] and recommendations to modify the Permittee's monitoring approach.

d. A short-term Storm Water Management Program effectiveness assessment as described in **Part V.E.5** for the Mid-Term report and results from the monitoring assessment required under **Part V.E.1** of this Order.

[40] Data must be uploaded to CEDEN using the templates provided on the CEDEN website.
[41]The Permittee shall provide any collected monitoring data or documentation required under this Order to the Central Valley Water Board. Any collected monitoring data shall be uploaded to the California Environmental Data Exchange Network (CEDEN), or the Storm Water Multi-Application Reporting and Tracking System (SMARTS) database when available.

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e. A long-term Storm Water Management Program effectiveness assessment as described in **Part V.E.5** for the End-Term report and results from the monitoring assessment required under **Part V.E.1** of this Order.

f. The progress in implementing the Work Plan submitted with the SWMP, including but not limited to results or findings regarding the following:

   (1) The progress toward achieving the interim and final goals for the PWQCs for the Jurisdictional Runoff Area,

   (2) The water quality improvement strategies that were implemented and/or no longer implemented by each of the Permittees during the reporting period and previous reporting periods, and are planned to be implemented during the next reporting period,

   (3) Proposed modifications to the water quality improvement strategies, and the rationale for the proposed modifications,

   (4) Approved modifications or updates incorporated into the Permittee's SWMP and implemented by the Permittee in the Jurisdictional Runoff Area, and

   (5) Any other proposed modifications or updates to the Permittee's SWMP.

g. A fiscal analysis. This analysis shall, for each fiscal year covered by the report, identify the expenditures spent on the implementation of the SWMP. The fiscal analysis shall include a description of the source(s) of funds that were used or are proposed to be used to meet the necessary expenditures, including legal restrictions on the use of such funds.

h. A completed certification statement, in accordance with the signatory requirements in **Attachment H** (*Standard Permit Provisions and General Provisions)*.

i. Any other applicable requirements under 40 CFR 122.42(c) (see **Attachment H**, *Standard Permit Provisions and General Provisions*) not already reflected in this **Part V.F.5**.

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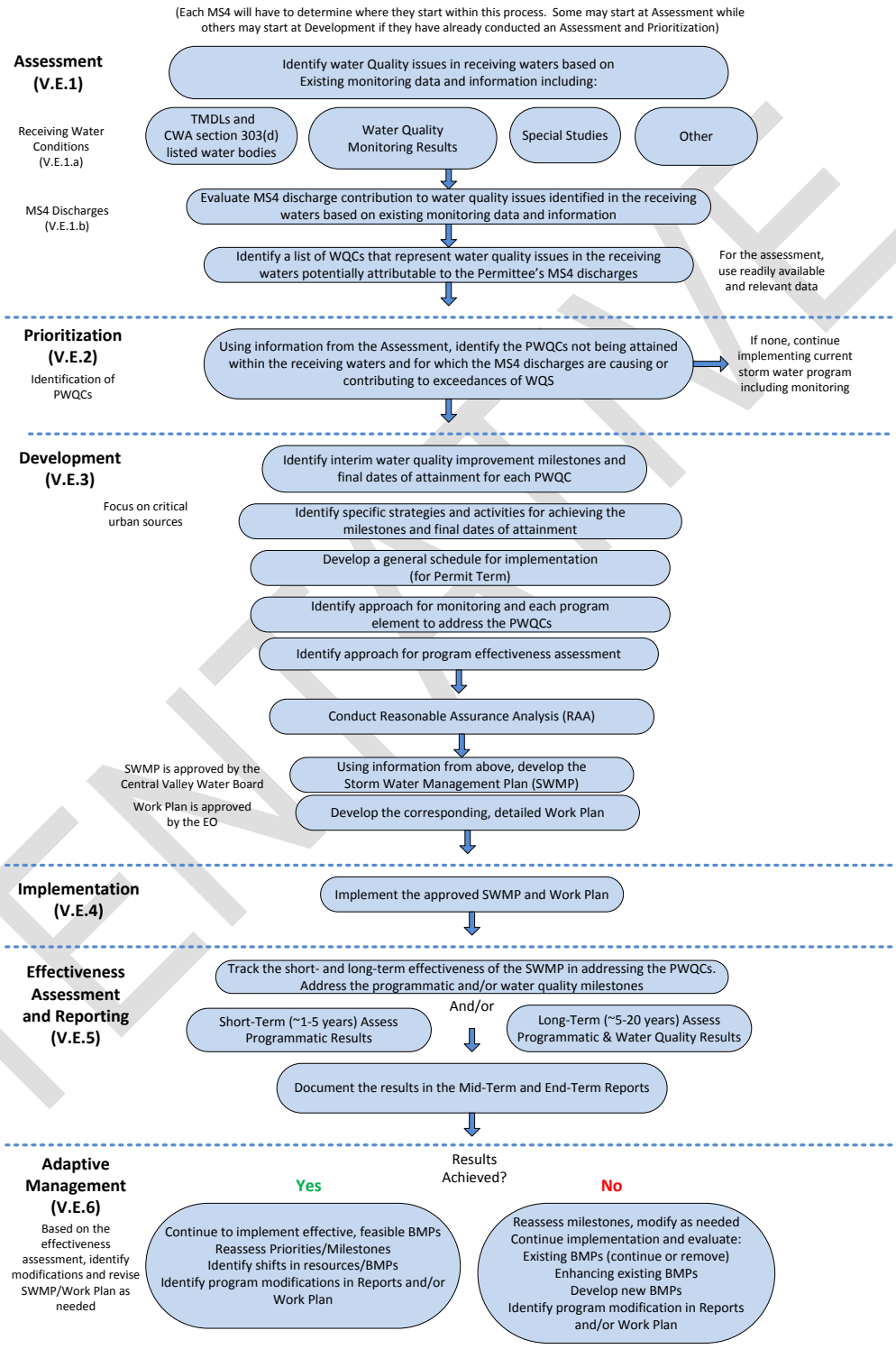
ATTACHMENT A – WATER QUALITY FOCUSED FRAMEWORK FOR ORDER NO. R5-2016-XXXX

A



TENTATIVE

ATTACHMENT B – RELATIONSHIP BETWEEN ORDER R5-2016-XXXX, STORM WATER MANAGEMENT PLAN (SWMP) AND WORK PLAN, AND REPORTS

B

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2007-0173

NPDES NO. CAS083470

WASTE DISCHARGE REQUIREMENTS

CITY OF STOCKTON
AND
COUNTY OF SAN JOAQUIN
STORM WATER DISCHARGES FROM
MUNICIPAL SEPARATE STORM SEWER SYSTEM
SAN JOAQUIN COUNTY

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

1. The City of Stockton and the County of San Joaquin's County Service Area 54, hereafter jointly referred to as Permittees, submitted a completed Report of Waste Discharge (ROWD) on 1 April 2007, requesting reissuance of waste discharge requirements under the National Pollutant Discharge Elimination System (NPDES) area-wide municipal separate storm sewer system (MS4) permit to discharge storm water runoff from storm drains within their jurisdictions and to implement a Storm Water Management Program (SWMP). The SWMP is required as part of the application pursuant to 40 CFR 122.26(d)(iv); therefore is an integral and enforceable component of the MS4 permit. In addition, the California Superior Court ruled, *"Because the Stormwater Management Plan is incorporated and is deemed an integral part of the Permits…any changes to the Plan are actually changes to the Permits. Because these are changes to the Permits, the notice and comment requirements must be complied with."* (*San Francisco Baykeeper vs. Regional Water Quality Control Board, San Francisco Bay Region*, Consolidated Case No. 500527, California Superior Court, 14 November 2003).

2. Prior to issuance of this Order, the Permittees were covered under the NPDES area-wide MS4 permit, Order No. R5-2002-0181 (NPDES No. CAS083470), adopted on 18 October 2002. On 5 September 2003, Order No. R5-2002-0181 was amended by the Regional Water Board by Resolution No. R5-2003-0133 in order to make it consistent with the precedential language contained in Order WQ 99-05. On 21 December 2005, the Regional Water Board's Executive Officer approved a revision of the Monitoring and Reporting Program Order No. R5-2002-0181.

3. The City of Stockton (hereafter City) is defined as a large municipality (population greater than 250,000) in the Code of Federal Regulations (CFR) 40 CFR 122.26

General Order

- Permit coverage area is entire Central Valley region
- Order includes Performance-Based and Prescriptive-Based storm water management approaches
- Order includes an Alternative Compliance Pathway
- Phase I MS4s may enroll at any time
- Phase II MS4s may enroll under this Order or continue to be regulated under the Statewide Phase II Small MS4 Permit
- Notice of Intent (NOI) is required to enroll
- Order includes provisions for the development of a Storm Water Management Plan (SWMP) and corresponding Work Plan
- SWMP is an enforceable component of the Order and must be approved by the Central Valley Water Board

JUNE 2008

CITY OF STOCKTON

National Pollutant Discharge Elimination System
Municipal Stormwater Program
Stormwater Management Plan

prepared by
LARRY WALKER ASSOCIATES

Storm Water Management Plan (SWMP) and Work Plan

- The Permittee develops the SWMP which describes its Storm Water Management Program
- The SWMP identifies the milestones, activities, and strategies and will be implemented by the Permittee
- The SWMP identifies the general approach that will be implemented, however the specificity is provided in the Work Plan(s)
- The Work Plan identifies the specific, detailed tasks to be implemented by the Permittee consistent with the SWMP
- The Work Plan is approved by the Executive Officer
- The SWMP and any modifications to the SWMP must be approved by the Central Valley Water Board

JUNE 2008

CITY OF STOCKTON

National Pollutant Discharge Elimination System
Municipal Stormwater Program
Stormwater Management Plan

prepared by
LARRY WALKER ASSOCIATES

Reports

- The Permittee develops an Annual Report, which includes a certification that the Storm Water Management Program was implemented as proposed, a discussion of proposed compliance for the forthcoming year, and any proposed minor modifications.
- There are two Assessment Reports: the Mid-Term Report (3 year) and the End-Term Report (5 year)
- The results of a short-term effectiveness assessment are reported in the Mid-term Report at the end of permit year 3
- The results of the long-term effectiveness assessment are reported in a End-term Report at the end of permit year 5

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ATTACHMENT C – ACRONYMS, ABBREVIATIONS, AND DEFINITIONS

C

ACRONYMS AND ABBREVIATIONS

Basin Plan	*Water Quality Control Plan for the Sacramento and San Joaquin River Basins* or *Water Quality Control Plan for the Tulare Lake Basin*
Bay-Delta Plan	*Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary*
BMP	Best Management Practice
BPTC	Best Practicable Treatment or Control
CCR	California Code of Regulations
CEDEN	California Environmental Data Exchange Network
Central Valley Water Board	California Regional Water Quality Control Board, Central Valley Region
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CFR	Code of Federal Regulations
CGP	Construction General Permit
CIWQS	California Integrated Water Quality System
CTR	California Toxics Rule
CWA	Clean Water Act
CWC	California Water Code
Ep	Erosion Potential
ESCP	Erosion and Sediment Control Plan
FESA	Federal Endangered Species Act
FR	Federal Register
General Permit	Order R5-2016-XXXX
GIS	Geographic Information System
Govt Code	California Government Code

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HMP	Hydromodification Management Plan
IBI	Index of Biological Integrity
IC/ID	Illegal Connection and Illicit Discharge Elimination
IPM	Integrated Pest Management
LID	Low Impact Development
MRP	Monitoring, Assessment, and Reporting Program
MCL	Maximum Contaminant Level
MEP	Maximum Extent Practicable
MRP	Monitoring and Reporting Program
MS4	Municipal Separate Storm Sewer System
NAICS	North American Industry Classification System
NOA	Notice of Applicability
NOI	Notice of Intent
NOT	Notice of Termination
NPDES	National Pollutant Discharge Elimination System
NTR	National Toxics Rule
POTW	Publicly Owned Treatment Works
PRC	Public Resources Code
PWQC	Priority Water Quality Constituents
QA/QC	Quality Assurance/Quality Control
QAPP	Quality Assurance Project Plan
QSD	Qualified SWPPP Developer
QSP	Qualified SWPPP Practioner
RAA	Reasonable Assurance Analysis
RMP	Regional Monitoring Program
SSC	Suspended Sediment Loads
SIC	Standard Industrial Classification

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SMARTS	Storm Water Multi-Application, Reporting, and Tracking System
SSO	Sanitary Sewer Overflow
State Water Board	State Water Resources Control Board
SUSMP	Standard Urban Stormwater Mitigation Plan
SWAMP	Surface Water Ambient Monitoring Program
SWMP	Storm Water Management Plan
SWPPP	Storm Water Pollution Prevention Plan
TBEL	Technology Based Effluent Limitation
TMDL	Total Maximum Daily Load
TIE	Toxicity Identification Evaluation
TRE	Toxicity Reduction Evaluation
USEPA	United States Environmental Protection Agency
USC	United States Code
USGS	United States Geological Survey
WLA	Waste Load Allocations
WDR	Waste Discharge Requirements
WQBEL	Water Quality Based Effluent Limitation
WQC	Water Quality Constituents
WQF	Water Quality Flow
WQS	Water Quality Objective or Water Quality Standard
WQV	Water Quality Volume

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DEFINITIONS[42]

Adverse Impact - A detrimental effect upon water quality or beneficial uses caused by a discharge of a pollutant or pollutants.

Annual Report – An Annual Report is required to be submitted no later than October 1 of each permit year. The Annual Report must contain information regarding compliance with implementation of the SWMP during the reporting period (July 1 through June 30).

Anti-degradation Policy – *Statement of Policy with Respect to Maintaining High Quality Waters in California* (State Water Board Resolution No. 68-16) is California's anti-degradation policy, as required in 40 CFR § 131.12.

Arithmetic Mean (μ) - Also called the average, is the sum of measured values divided by the number of samples. For ambient water concentrations, the arithmetic mean is calculated as follows:

Arithmetic mean = $\mu = \sum x/n$, where:

$\sum x$ is the sum of the measured ambient water concentrations, and n is the number of samples.

Authorized Discharge - Any discharge that is authorized pursuant to a NPDES permit or meets the conditions set forth in this Order.

Authorized Non-Storm Water Discharge - Discharges that are not composed entirely of storm water and that are: (1) separately regulated by an individual or general NPDES permit and allowed to discharge to the MS4 in compliance with all NPDES permit conditions (2) listed as a category in 40 CFR 122.26(d)(2)(iv)(B)(1) and the discharge is not determined to contain pollutants by the Permittee or Executive Officer; or (3) necessary for emergency responses purposes, including flows from emergency firefighting activities.

Automotive Service Facilities – A facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes. (5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) For inspection purposes, Permittees need not inspect facility with SIC codes 5013, 5014, 5511, 5541, provided that these facilities have not outside activities or materials that may be exposed to storm water.

Basin Plan – The *Water Quality Control Plan for the Sacramento-San Joaquin River Basins* (June 2015), or *Water Quality Control Plan for the Tulare Lake Basin* (January 2015), and subsequent revisions or amendments.

Bay-Delta Plan – The *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Revised December 2006), and subsequent revisions or amendments.

Beneficial Uses - The uses of water necessary for the survival or wellbeing of man, plants, and wildlife. These uses of water serve to promote tangible and intangible economic, social, and environmental goals. "Beneficial Uses" of the waters of the State that may be protected include,

[42] Terms not defined in this **Attachment C** shall have the meaning prescribed in the federal Clean Water Act, as amended, and the Clean Water Act's applicable regulations (collectively, the "CWA") or the Porter-Cologne Water Quality Control Act, (California Water Code § 13000 et seq.). Any terms in this Order not defined in **Attachment C**, the CWA, or the California Water Code shall have their ordinary meaning.

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but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves. Existing beneficial uses are uses that were attained in the surface or ground water on or after November 28, 1975; and potential beneficial uses are uses that would probably develop in future years through the implementation of various control measures. "Beneficial Uses" are equivalent to "Designated Uses" under federal law. [California Water Code Section 13050(f)].

Best Management Practices (BMPs) - Schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce pollutants discharged to waters of the United States [40 CFR 122.2}.

Bioassessment - The use of biological community information to evaluate the biological integrity of a water body and its watershed. With respect to aquatic ecosystems, bioassessment is the collection and analysis of samples of the benthic macroinvertebrate community together with physical/habitat quality measurements associated with the sampling site and the watershed to evaluate the biological condition (i.e. biotic integrity) of a water body.

Catch Basin - A catch basin (also known as a storm drain inlet) is an inlet to the storm drain system that typically includes a grate or curb inlet where water enters the catch basin and a sump to capture sediment, debris and associated pollutants.

Chronic Toxicity – A measurement of sub-lethal effect (e.g. reduced growth, reproduction) to experimental test organisms exposed to an effluent or receiving waters compared to that of the control organisms.

Clean Water Act Section 303(d) Water Body - An impaired water body in which water quality does not meet applicable water quality standards and/or is not expected to meet water quality standards, even after the application of technology based pollution controls required by the CWA. Discharges to these water bodies can cause or contribute to violations of applicable water quality standards.

Commercial Development – Any development on private land that is not heavy industrial or residential. The category includes, but is not limited to: restaurants, stores, hospitals, laboratories and other medical facilities, recreational facilities, plant nurseries, car wash facilities; mini-malls and other business complexes, shopping malls, hotels, office buildings, public warehouses and other light industrial complexes.

Construction Activity – Construction activity includes any construction or demolition activity, clearing, grading, grubbing, or excavation or any other activity that results in land disturbance. Construction does not include emergency construction activities required to immediately protect public health and safety or routine maintenance activities required to maintain the integrity of structures by performing minor repair and restoration work, maintain the original line and grade, hydraulic capacity, or original purposes of the facility. See "Routine Maintenance" definition for further explanation. Where clearing, grading or excavating of underlying soil takes place during a repaving operation, coverage under the State Water Board's General Construction Permit is required if more than one (1) acre is disturbed or the activities are part of a larger plan.

Contamination - As defined in the Porter-Cologne Water Quality Control Act, contamination is "an impairment of the quality of waters of the State by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. 'Contamination' includes any equivalent effect resulting from the disposal of waste whether or not waters of the State are affected."

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Contribute – Discharging a pollutant that measurably affects an exceedance or excursion of an applicable water quality objectives or standards (collectively, "WQS").

Development – Any construction, rehabilitation, redevelopment, or reconstruction of any public or private residential project (whether single-family, multi-unit or planned unit development); industrial, commercial, retail and other non-residential projects, including public agency projects; or mass grading for future construction. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety.

Discharge - When used without qualification the "discharge of a pollutant."

Direct Discharge – A discharge that is routed directly to waters of the United States by means of pipe, channel, or ditch (including a municipal storm sewer system), or through surface runoff.

Discharge of a Pollutant – The addition of any "pollutant" to waters of the United States from any point source. The term *discharge* includes additions of pollutants into waters of the United States from surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges from pipes, sewers, or other conveyances, leading into privately owned treatment works.

Discharger – Any responsible party or site owner or operator within the Permittee's Jurisdictional Runoff Area whose site discharges storm water runoff or a non-storm water discharge.

Disturbed Area – An area that is altered as a result of clearing, grading, and/or excavation.

Dry Weather – Weather is considered dry if the preceding 72 hours has been without measurable precipitation (0.1 inches or less accumulated over previous 24-hours).

Erosion –The physical detachment of soil due to wind or water. Often the detached fine soil fraction becomes a pollutant transported by storm water runoff. Erosion occurs naturally, but can occur at an accelerated rate by land clearing activities such as farming, development, road building, and timber harvesting.

Erosion and Sediment Control Plan (ESCP) – A set of plans prepared by or under the direction of a licensed professional engineer indicating the specific measures and sequencing to be used to control sediment and erosion on a development site during and after construction.

Executive Officer – Except where specifically noted otherwise, "Executive Officer" shall mean the Executive Officer of the Regional Water Quality Control Board, Central Valley Region.

Existing Development – Any area that has been developed and exists for municipal, commercial, industrial, or residential purposes, uses, or activities. May include areas that are not actively used for its originally developed purpose, but may be re-purposed or redeveloped for another use or activity.

Grading - The cutting and/or filling of the land surface to a desired slope or elevation.

Hazardous Material – Any substance that poses a threat to human health or the environment due to its toxicity, corrosiveness, ignitability, explosive nature or chemical reactivity. These also include materials named by the USEPA in 40 CFR 116 to be reported if a designated quantity of the material is spilled into the waters of the United States or emitted into the environment.

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Hazardous Waste – Hazardous waste is defined as "any waste which is required to be managed according to Chapter 30 of Division 4.5 of Title 22 of the California Code of Regulations" [CCR Title 22, Division 4.5, Chapter 11, Article 1].

Household Hazardous Waste – Paints, cleaning products, and other wastes generated during home improvement or maintenance activities.

Hydromodification – The change in the natural watershed hydrologic processes and runoff characteristics (e.g., interception, infiltration, overland flow, and groundwater flow) caused by urbanization or other land use changes that result in increased stream flows and sediment transport. In addition, alteration of stream and river channels, such as stream channelization, concrete lining, installation of dams and water impoundments, and excessive streambank and shoreline erosion are also considered hydromodification, due to their disruption of natural watershed hydrologic processes. For the purposes of this Order, "hydromodification" refers to ecologically significant modification of a watershed's natural hydrograph, characterized by increased volume, velocity, rate, duration, and/or overall energy (collectively, "flow).

Illegal Connection – Any physical connection to a Permittee's MS4 that is not permitted pursuant to a valid NPDES permit and/or written approval by the Permittee.

Illicit Discharge - Any discharge to the MS4 that is not composed entirely of storm water except discharges pursuant to a NPDES permit and non-storm water discharges, such as those resulting from firefighting activities [40 CFR 122.26(b)(2)].

Impaired Water Body - A water body (e.g., stream reaches, lakes, water body segments) with chronic or recurring monitored violations of the applicable numeric and/or narrative water quality criteria. An impaired water is a water body that has been listed on the State of California's CWA section 303(d) list or has not yet been listed but otherwise meets the criteria for listing per the Listing Policy found at: http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/ffed_303d_listingpolicy09300 4.pdf The State of California's CWA section 303(d) list can be found at http://www.waterboards.ca.gov/water_issues/programs/tmdl/integrated2012.shtml.

Impervious Surface - A surface covering or pavement of a developed parcel of land that prevents the land's natural ability to absorb and infiltrate rainfall/storm water. Impervious surfaces include, but are not limited to; roof tops, walkways, patios, driveways, parking lots, storage areas, impervious concrete and asphalt, and any other continuous watertight pavement or covering. Landscaped soil and pervious pavement, including pavers with pervious openings and seams, underlain with pervious soil or pervious storage material, such as a gravel layer sufficient to hold the specified volume of rainfall runoff are not impervious surfaces.

Industrial/Commercial Facility – Any facility involved and/or used in the production, manufacture storage, transportation, distribution, exchange or sale of goods and/or commodities, and any facility involved and/or used in providing professional and non-professional services. This category of facilities includes, but is not limited to, any facility defined by either the SIC or the NAICS. Facility ownership (federal, state, municipal, private) and profit motive of the facility are not factors in this definition.

Infiltration – The entry of water into the surface of the soil.

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Integrated Pest Management (IPM) – An ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistance varieties.

Jurisdictional Runoff Area – Urbanized areas with an MS4 conveyance within the Permittee's jurisdiction and subject to the requirements of this Order. A Permittee's Jurisdictional Runoff Area does not include areas within the Permittee's geographical jurisdiction that drain to a MS4 that is owned or operated by another NPDES permit holder.

Low Impact Development (LID) – A storm water management and land development strategy that emphasizes conservation and the use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely reflect pre-project hydrologic functions. LID includes land development strategies that emphasize conservation and the use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely reflect pre-project hydrologic functions. LID strategies include retention practices that do not allow runoff, such as infiltration, rain water harvesting and use, and evapotranspiration.

Maximum Extent Practicable (MEP) – The technology-based standard for implementation of municipal storm water management programs to reduce pollutants in storm water. Clean Water Act section 402(p)(3)(B)(iii) requires that municipal permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." MEP is the cumulative effect of implementing, evaluating, and making corresponding changes to a variety of technically appropriate and economically feasible BMPs, ensuring that the most appropriate controls are implemented in the most effective manner. To achieve the MEP standard, municipalities must employ whatever BMPs are technically feasible and are not cost-prohibitive. Reducing pollutants to the MEP means choosing effective BMPs, and rejecting applicable BMPs only where other effective BMPs will serve the same purpose, or the BMPs would not be technically feasible, or the costs would be prohibitive. A final determination of whether a municipality has reduced pollutants to the MEP can only be made by the State or Central Valley Water Boards.

In 2000, the State Water Board issued a precedential order (Order WQ 2000-11 (*Cities of Bellflower*, et al.)) stating that cost of compliance with the programs and requirements of a municipal storm water permit is a relevant factor in determining MEP, but that a cost benefit analysis is not required. The State Water Board discussed costs as follows:

> While the standard of MEP is not defined in the storm water regulations or the Clean Water Act, the term has been defined in other federal rules. These definitions focus mostly on technical feasibility, but cost is also a relevant factor. There must be a serious attempt to comply, and practical solutions may not be lightly rejected. If, from the list of BMPs, a Permittee chooses only a few of the least expensive methods, it is likely that MEP has not been met. On the other hand, if a Permittee employs all applicable BMPs except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit to be derived, it would have met the standard. MEP requires Permittees to choose effective BMPs, and to reject applicable BMPs only where other effective BMPs will serve the same purpose, the BMPs would not be technically feasible, or the cost would be prohibitive. Thus while cost is a factor, the ~~Regional~~ Central Valley Water Board is not required to perform a cost-benefit analysis.

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(State Water Board Order WQ 2000-11, p.20.) The cost of complying with TMDL waste load allocations is not required to be considered because TMDLs are not subject to the MEP standard.

Monitoring Year – October 1 to September 30.

Municipal Separate Storm Sewer System (MS4) – A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains): (i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; (ii) Designated or used for collecting or conveying storm water; (iii) Which is not a combined sewer; (iv) Which is not part of the Publicly Owned Treatment Works (POTW) as defined at 40 CFR §122.2; all separate storm sewer that are defined as "large" or "medium" or "small" municipal separate storm sewer systems pursuant to paragraphs 40 CFR §122.26 (b)(4), (b)(7), or (b)(16), or are designated under [40 CFR §122.26(a)(1)(v).

National Pollutant Discharge Elimination System (NPDES) – The national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under sections 307, 402, 318, and 405 of CWA [40 CFR 122.2].

Natural Drainage System – A natural drainage system is a drainage system that has not been improved (e.g., channelized or armored). The clearing or dredging of a natural drainage system does not cause the system to be classified as improved.

New Development – Land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and land subdivision.

Nonpoint Source – Any source of water pollution that does not meet the legal definition of "point source" in section 40 CFR 122.22 or section 502(14) of the Clean Water Act.

Non-Storm Water - All discharges into and from a MS4 that do not originate from precipitation events (i.e., all discharges from a MS4 other than storm water). Non-storm water includes illicit discharges and NPDES permitted discharges.

Non-Water Quality Milestone – A performance benchmark for a Permittee's discharges indicating progress toward final attainment of a water quality standard in receiving waters, but which is not related to the quality of the Permittee's discharge or of receiving waters. Examples may include, but are not limited to, obtaining budgetary approval from a City Council, other financing, or obtaining entitlements for a capital improvement project that ultimately will reduce the Permittee's contribution of pollutants to waters of the United States. Achievement or non-achievement of a non-water quality milestone must be readily verifiable, and ~~must include~~ a date for its achievement must be specified.

Typically, non-water quality milestones should be among the earliest benchmarks achieved by a Permittee for a given PWQC, as they facilitate later steps that achieve actual pollutant reductions in receiving waters. Although a Permittee's non-water quality milestones in a board-approved SWMP are enforceable components of this Order, the procedure for remaining in compliance with this Order despite missing a deadline is different for non-water quality

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milestones than it is for water quality milestones, as described in **Parts V.C.5 and V.C.8** of this Order.

Nuisance - Anything which meets all of the following requirements: 1) Is injurious to health, or is indecent, or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; 2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and 3) Occurs during, or as a result of, the treatment or disposal of wastes [Water Code section 13050(m)].

Order – Unless otherwise specified, refers to this Order, Order R5-2016-XXXX (NPDES No. CASXXXXXX).

Outfall – A point source as defined in 40 CFR section 122.2 at the point where a municipal separate storm sewer discharges to waters of the United States but does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels, or other conveyances that connect segments of the same stream or other waters of the United States and are used to convey waters of the United States [40 CFR § 122.26(b)(9)].

Parking Lot - Land area or facility for the parking or storage of motor vehicles used for business, commerce, industry, or personal use, with a lot size of 5,000 square feet or more of surface area, or with 25 or more parking spaces.

Permittee – A discharger enrolled under this Order as being responsible for permit requirements within its Jurisdictional Runoff Area.

Point Source - Any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operation, landfill leachate collection systems, vessel, or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff [40 CFR § 122.2; CWA section 502(14)].

Pollutant - Dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials (except those regulated under the Atomic Energy Act of 1954, as amended (42 USC § 200, *et seq*.), heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal , and agricultural waste discharged into water [CWA section 502(6)].

Pollution - The alteration of the quality of the waters of the State by waste, to a degree that unreasonably affects either of the following: 1) The waters for beneficial uses; or 2) Facilities that serve these beneficial uses; Pollution may include contamination [Water Code section 13050(l)].

Pollution Prevention - any action that causes a net reduction in the use or generation of a hazardous substance or other pollutant that is discharged into water and includes, but is not limited to, input change, operational improvement, production process change, and product reformulation (as defined in Water Code section 13263.3). Pollution prevention does not include actions that merely shift a pollutant in wastewater from one environmental medium to another environmental medium, unless clear environmental benefits of such an approach are identified to the satisfaction of the Central Valley Water Board.

Potable Water – Water that meets the drinking water standards of the USEPA and the State Water Board's Division of Drinking Water.

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Priority Development Project – Those projects that are required to incorporate appropriate storm water mitigation measures into the design plan for their respective project. Although the Permittee's SWMP may include its own definition of Priority Development Projects, that definition must be designed to achieve equivalent protection of water quality to that achieved with the following criteria:

1. Single-family hillside residences (includes development on any natural slope that is twenty-five percent or greater);
2. Residential subdivisions of ten or more units (includes single family homes, multifamily homes, condominiums, and apartments);
3. 100,000 square foot industrial/commercial development;
4. Automotive repair shops (SIC 5013, 5014, 5541, 7532-7534, and 7536-7539);
5. Restaurants (SIC 5812);
6. Parking lots with 5,000 square feet or more or with 25 or more parking spaces; and
7. Redevelopment projects that are within one of these categories are included if the redevelopment adds or creates at least 5,000 square feet of impervious surface to the original developments; if the addition constitutes less than 50 percent of the original development, the design standard only applies to the addition.

Priority Water Quality Constituent (PWQC) - A subset of the water quality constituents that represent the highest threat to receiving water quality within a Jurisdictional Runoff Area.

Reasonable Assurance Analysis (RAA) - An analysis performed by the Permittee that demonstrates with a high degree of certainty/confidence that strategies and activities proposed in the SWMP are likely to achieve water quality milestones identified in the SWMP—including timely final attainment of water quality standards. One reasonable assurance analysis may cover more than one water body-pollutant combination, but each priority water quality constituent must be addressed by at least one reasonable assurance analysis.

Receiving Water – A "water of the United States" into which pollutants are or may be discharged.

Redevelopment - Land disturbing activity that results in the creation, addition, or replacement impervious surface area on an already developed site (the amount of impervious surface area that triggers this definition shall be defined in the Permittee's development standards). Redevelopment includes, but is not limited to the expansion of a building footprint; addition or replacement of a structure; replacement of impervious surface area that is not part of a routine maintenance activity; and land disturbing activities related to structural or impervious surfaces. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety.

Restaurant – A stationary facility that sells prepared foods and drinks for consumption, including but not limited to stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption.

Retrofitting –A wide range of projects that provide pollutant reduction on an existing development currently untreated by any BMP or is inadequately treated by an existing BMP. Different than new development that requires storm water to be managed onsite, storm water retrofitting is applied to older developments which were constructed prior to storm water onsite management or design criteria requirements were established. Storm water retrofits can be

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classified into two broad categories: (1) New retrofit facilities which utilize a range of storm water treatment and runoff reduction mechanisms to create new storage and reduce pollutants; and (2) Existing onsite retrofits which convert, enhance, or restore existing BMPs to employ a more effective treatment mechanism, increase treatment volume and/or hydraulic retention time, and/or renew performance.

Routine Maintenance – Includes, but is not limited to projects conducted to:

1. Maintain the original line and grade, hydraulic capacity, or original purpose of the facility.
2. Perform as needed restoration work to preserve the original design grade, integrity and hydraulic capacity of flood control facilities.
3. Includes road shoulder work, regarding dirt or gravel roadways and shoulders and performing ditch cleanouts.
4. Update existing lines (to replace existing lines with new materials or pipes) and facilities to comply with applicable codes, standards, and regulations regardless if such projects result in increased capacity.
5. Repair leaks.

Routine maintenance does not include construction of new lines or facilities resulting from compliance with applicable codes, standards and regulations. New lines include those that are not associated with existing facilities and are not part of a project to update or replace existing lines.

Runoff - All flows in a storm water conveyance system that consists of the following components: (1) storm water (wet weather flows) and (2) non-storm water including dry weather flows.

Screening – Using proactive methods to identify illegal connections through a continuously narrowing process. The methods may include performing baseline monitoring of open channels, conducting special investigations using a prioritizing approach, analyzing maintenance records for catch basin and storm drain cleaning and operation, and verifying all permitted connections into the storm drains. Special investigation techniques may include: dye testing, visual inspection, smoke testing, flow monitoring, infrared, aerial and thermal photography, and remote control camera operation.

Sediment - Soil, sand, and minerals washed from land into water. Sediment resulting from anthropogenic sources (e.g. human induced land disturbance activities) is considered a pollutant. This Order regulates only the discharges of sediment from anthropogenic sources and does not regulate naturally occurring sources of sediment.

Solid Waste – All putrescible and nonputrescible solid, semisolid, and liquid wastes. [C~~c~~al. ~~Government~~ Govt. Code section 68055.1(h)]

Source Control Best Management Practice – Any schedules of activities, prohibitions of practices, maintenance procedures, managerial practices or operational practices that aim to prevent storm water pollution by reducing the potential for contamination at the source of pollution.

Storm Event – Any storm event with 0.25 inches or more accumulated over the previous twenty-four (24) hours.

Storm Drain System – The basic infrastructure in a MS4 that collects and conveys storm water and approved or illicit non-storm water runoff.

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Storm Water – Storm water runoff, snow melt runoff and surface runoff and drainage. Surface runoff and drainage pertains to runoff and drainage resulting from precipitation events. [40 CFR 122.26(b)(13)]

Storm Water Management Plan (SWMP) - Pursuant to 40 CFR 122.26(d)(2)(iv), the Permittee is required to develop and submit a SWMP covering the five (5) year permit term. The SWMP is the overarching Storm Water Management Program planning document and includes comprehensive details on the Permittee's process for implementing the permit requirements. The SWMP must be approved by the Water Board before it becomes effective.

Storm Water Pollution Prevention Plan (SWPPP) - A plan, as required by the CGP or IGP, identifying potential pollutant sources and describing the design, placement and implementation of BMPs, to effectively prevent non-storm water discharges and reduce pollutants in storm water discharges during activities covered by that permit.

Structural Best Management Practices - A subset of BMPs which detains, retains, filters, removes, or prevents the release of pollutants to surface waters from development projects in perpetuity, after construction of a project is completed.

Surface Drainage – Any above-ground runoff (sheet flow, and open channel flows) that discharges into the MS4.

Surface Water Ambient Monitoring Program (SWAMP) – the State Water Board's program to monitor surface water quality; coordinate consistent scientific methods; and design strategies for improving water quality monitoring, assessment, and reporting.

Technology Based Effluent Limitations - A technology based effluent limitation is based on the capability of a model treatment method to reduce a pollutant to a certain concentration (NPDES Permit Writer's Manual, Appendix A). Technology based requirements represent the minimum level of control that must be imposed in a permit issued under CWA section 402.

Total Maximum Daily Load (TMDL) - The maximum amount of a pollutant that can be discharged into a water body from all sources (point and non-point) and still maintain water quality standards. Under CWA section 303(d), TMDLs must be developed for all water bodies that do not meet water quality standards after application of technology-based controls.

Toxicity - Adverse responses of organisms to chemicals or physical agents ranging from mortality to physiological responses (such as impaired reproduction or growth anomalies). The water quality objectives for toxicity provided in the Basin Plan, states…"All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life. This objective applies regardless of whether the toxicity is caused by a single substance or by the interactive effect of multiple substances. Compliance with this objective will be determined by analyses of indicator organisms, species diversity, population growth, growth anomalies, and biotoxicity tests of appropriate duration or other methods as specified by the [Central Valley Water Board]."

Toxicity Identification Evaluation (TIE) - A set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests.

Toxicity Reduction Evaluation (TRE) TRE is a study conducted in a step-wise process designed to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity. The first steps of the TRE consist of the collection of data relevant to the toxicity,

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including additional toxicity testing, and an evaluation of facility operations and maintenance practices, and best management practices. A Toxicity Identification Evaluation (TIE) may be required as part of the TRE, if appropriate. (A TIE is a set of procedures to identify the specific chemical(s) responsible for toxicity. These procedures are performed in three phases (characterization, identification, and confirmation) using aquatic organism toxicity tests).

Trash (and Debris) - all improperly discarded solid material from any production, manufacturing, or processing operation including, but not limited to, products, product packaging, or containers constructed of plastic, steel, aluminum, glass, paper, or other synthetic or natural materials.

Treatment Control Best Management Practice – Any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants, filtration, biological uptake, media absorption or any other physical, biological, or chemical process.

Waste Load Allocation (WLA) -The portion of a receiving water's loading capacity that is allocated to one of its existing or future point sources of pollution. WLAs constitute a type of water quality based effluent limitation.

Water Quality Milestone – A performance benchmark for a Permittee's discharges indicating progress toward final attainment of a water quality standard in receiving waters. Water quality milestones may take a variety of forms, such as receiving water limitations, interim or final WQBELs established in TMDLs, action levels or benchmarks, pollutant concentrations, load reductions, number of impaired water bodies delisted from the List of Water Quality Impaired Segments, Index of Biotic Integrity (IBI) scores, or other appropriate metrics. Water quality milestones for each PWQC must build upon previous milestones and lead to final attainment of the applicable final water quality standards for that PWQC. The Permittee's SWMP must include at least one water quality milestone per permit term for each PWQC.

Water Quality Objective (WQO) - Numerical or narrative limits or levels of water quality constituents or characteristics which are established for the reasonable protection of designated beneficial uses of the water or the prevention of nuisance within a specific area [Water Code section 13050 (h)].

Water Quality Standards (WQS) - Water quality standards, as defined in CWA section 303(c) consist of the designated beneficial uses (e.g., swimming, fishing, municipal drinking water supply, etc.,) of a water body and water quality criteria necessary to protect those uses.

Water Quality-Based Effluent Limitation (WQBELs) - Any restriction imposed on quantities, discharge rates, and concentrations of pollutants, which are discharged from point sources to waters of the United States necessary to achieve a water quality standard.

Water Quality Control Measures – implementation of storm water best management practices designed to meet water quality standards or objectives for the reasonable protection of beneficial uses.

Waters of the State – Any surface water or groundwater, including saline waters within the boundaries of the State. [Water Code section 13050 (e)]

Waters of the United States – Waters described by the federal Clean Water Act regulations defining "waters of the United States," including but not limited to 40 CFR 122.2.

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Watershed - That geographical area that drains to a specified point on a water course, usually a confluence of streams or rivers (also known as drainage area, catchment, or river basin).

Work Plan - The five-year implementation document that identifies and schedules the specific, detailed tasks a Permittee must perform in order to comply with the strategies and activities in its SWMP. The Work Plan is submitted as a companion document to the SWMP and must be approved by the Executive Officer.

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ATTACHMENT D – MAP OF THE CENTRAL VALLEY REGION COVERED BY ORDER R5-2016-XXXX

D

ATTACHMENT D – Map of the Central Valley Region Covered by Order R5-2015-XXXX

PRELIMINARY DRAFT

ATTACHMENT E – MONITORING TABLES FOR ATTACHMENT K

E

Table 1. Toxicity Testing Criteria

Freshwater Organism	Test Approach	USEPA Protocol[1]
Pimephales promelas	1 acute 1 chronic	EPA-821-R-02-012[2] EPA-821-R-02-013[3]
Ceriodaphnia dubia	1 acute 1 chronic	EPA-821-R-02-012 EPA-821-R-02-013
Psuedokirchneriella subcapitata[4]	1 acute 1 chronic	EPA-821-R-02-012 EPA-821-R-02-013

Notes:
[1]USEPA protocols must be utilized for toxicity testing as promulgated in 40 CFR 136 Table 1A.
[2]*Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, Fifth Edition, USEPA, October 2002, or most recent edition.
[3]*Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, USEPA, October 2002, or most recent edition.
[4]Can be substituted with *Raphidocelis subcapitata* or *Selenastrum captricornutum*

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Table 2: List of Constituents and Associated Minimum Levels (MLs)[43] for the Storm Water and Urban Discharge Monitoring Program

CONSTITUENTS	MLs
FIELD/LAB MEASUREMENTS	
Date	mm/dd/yyyy
Sample Time	hr:mm
Sample Location	latitude/longitude, station ID
Weather conditions	degrees F
Rainfall in previous 24-hours	Inches
Flow	feet/sec
GENERAL	**mg/L**
Alkalinity	2
Biochemical Oxygen Demand	2
Chemical Oxygen Demand	20-900
Chloride	2
Dissolved Oxygen	Sensitivity to 5 mg/L
Dissolved Phosphorus	0.05
Methylene Blue Active Substances (MBAS)	0.5
Nitrate-Nitrite	0.1
Oil and Grease	5
pH	0 – 14 standard units
Specific Conductance	1 umhos/cm
Suspended Sediment Concentration[44]	2
Temperature (Water)	degrees C
Total Dissolved Solids	2
Total Hardness	2
Total Kjeldahl Nitrogen	0.1
Total Petroleum Hydrocarbon	5
Total Organic Carbon	1
Total Phenols	1
Total Phosphorus	0.05
Total Suspended Solids	2
Turbidity	0.1 NTU

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[43] Reporting Levels (RL) must be lower than or equal to the ML value designated in **Table 2**. If a particular ML is not attainable in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure may be used instead.

[44] Suspended sediment concentration (SSC) must be analyzed per American Society for Testing and Materials (ASTM) Standard Test Method D-3977-97

ATTACHMENT F – FACT SHEET

F

As described in **Part I.2** of this Order, this Fact Sheet sets forth the significant factual, legal, methodological, and policy rationale that serves as the basis for the requirements of this Order. This Order has been prepared under a standardized format to accommodate a broad range of discharge requirements for Permittees in the Central Valley region of California.

I. PERMIT INFORMATION

A. Need to Regulate Discharges from Municipal Separate Storm Sewer Systems

The quality of storm water and non-storm water discharges from Municipal Separate Storm Sewer Systems (MS4s) is fundamentally important to the health of the environment and the quality of life in the Central Valley region. Polluted storm water and non-storm water discharges from MS4s are one of the leading causes of water quality impairment in the Central Valley region. Storm water and non-storm water accumulates pollutants, such as debris, nutrients, metals, pesticides, pathogens, and sediment as it flows over the land surface, which can result in adverse effects on receiving water quality if discharged untreated. The United States Environmental Protection Agency (USEPA) recognizes urbanization increases the variety and amount of pollutants carried into our nation's waters from contaminated storm water and urban runoff.

The National Urban Runoff Program (NURP) Study conducted by USEPA showed that MS4 discharges draining from residential, commercial, and light industrial areas contain significant loadings of total suspended solids and other pollutants.[45] The NURP Study also found that pollutant levels from illicit discharges were high enough to significantly degrade receiving water quality, and threaten aquatic life, wildlife, and human health. The general findings and conclusions of the NURP Study are reiterated in the more recent 2008 National Research Council, and many other studies continue to support the conclusions of the NURP Study.[46] For example, the United States Geological Survey (USGS) analyzed data from the NURP Study, and summarized additional monitoring data compiled during the 1980s over 700 storm events at 99 different locations, including the City of Fresno[47]. The USGS report confirmed pollution problems associated with metals and sediment concentrations in urban storm water runoff.

The 1992, 1994, and 1996 National Water Quality Inventory Reports (e.g., CWA section 305(b) reports) to Congress prepared by USEPA showed a trend of impairment in the Nation's waters from contaminated urban storm water runoff. The 2004 National Water

[45] *Results of the Nationwide Urban Runoff Program*, Volumes I and II, United States Environmental Protection Agency, Washington, D.C., December 1983

[46] (1) *Preliminary Data Summary of Urban Storm Water Best Management Practices*, United States Environmental Protection Agency, Washington, D.C., EPA-821-R-09-012, August 1999; (2) State Water Resources Control Board's 2010 (or most recently approved) Clean Water Act section 303(d) List and section 305(b) report.; (3) *Urban Stormwater Management in the United States, Committee on Reducing Stormwater Discharge Contributions in Water Pollution*, Water Science and Technology Board, Division on Earth and Life Sciences, National Research Council of The National Academies, 2008; and (4) *Pathogens in Urban Stormwater Systems*, Urban Water Resources Research Council, August 2014.

[47] U.S. Geological Survey Urban-Stormwater Data Base for 22 Metropolitan Areas Throughout the United States, Open File Report 85-337, 1985.

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Quality Inventory showed that urban runoff/storm water discharges at that time contributed to the impairment of 22,559 miles of rivers and streams, 701,024 acres of lakes, reservoirs, and ponds, 867 square miles of bays and estuaries, and 369 acres of wetlands in the United States.[48] Comparatively, the 2010 California Water Quality Assessment Report cited specific categories (e.g., urban-related runoff/storm water, municipal point source discharges, and hydromodification) as significant sources of impairment to the same water body types. Finally, a 1999 report by the Natural Resources Defense Council identified two main causes of the storm water pollution problem in urban areas: increased volume and velocity due to impervious cover, and certain activities may be larger contributors to increased discharge of pollutants than others.[49]

Certain pollutants present in storm water and/or urban runoff may be derived from extraneous sources over which Permittees have no or limited jurisdiction/control. Examples of such pollutants and their respective sources are: PAHs which are products of internal combustion engine operation, nitrates, bis(2-ethylhexyl) phthalate and mercury from atmospheric deposition, lead from fuels, copper from brake pad wear, zinc from tire wear, dioxins as products of combustion, pesticides from legal applications, and natural occurring minerals from local geology.

Federal, state, regional, or local entities within the Permittees' boundaries, not currently named in this Order, operate storm drain facilities and/or discharge storm water to the storm drains covered by this Order. The Permittees may lack legal jurisdiction over these entities under applicable state and federal authorities. Consequently, the Regional Water Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges. However, Permittees should notify the ~~Regional~~ Central Valley Water Board upon recognition of discharges, which are a threat to storm water quality protection.

The State and Regional Water Boards may consider issuing separate NPDES storm water permits to other federal, state, or regional entities operating and discharging within the Permittees' boundaries that may not be subject to direct regulation by the Permittees. Federal agencies are not subject to municipal storm water requirements although they may be permitted as industrial dischargers.

B. Background of Central Valley Region Municipal Storm Water Permits

Water pollution was first regulated in the United States under the Federal Water Pollution Control Act of 1948. The law became commonly known as the Clean Water Act in 1972, when it was amended in response to growing public concerns to control water pollution. The Clean Water Act (CWA) prohibited point source discharges of any pollutant to waters of the United States unless the discharge was authorized by a National Pollutant Discharge Elimination System (NPDES) permit. The 1987 amendments to the CWA included regulation of storm water discharges from industrial

[48] California Water Quality Assessment Report, USEPA, 2010. http://ofmpub.epa.gov/waters10/attains_state.control?p_state=CA

[49] Stormwater Strategies, Community Response to Runoff Pollution, Natural Resources Defense Council, May 1999. http://www.nrdc.org/water/pollution/storm/stoinx.asp

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activities and municipal storm sewers. This amendment required tracking point sources and implementing controls to minimize the discharge of pollutants.

Congress amended the CWA in 1987 to require implementation of a comprehensive national program to address storm water discharges under two phases. The first phase (commonly referred to as "Phase I") was put into effect on 16 November 1990 and required NPDES permits for MS4s generally serving a population of 100,000 persons or more, specific industrial categories, and construction sites that disturbed five or more acres of land . The second phase of the 1987 CWA amendment (commonly referred to as "Phase II") was put into effect on 8 December 1999, expanding NPDES permits requirements to discharges of storm water from smaller municipalities in urbanized areas and construction sites between one and five acres of land disturbance, and conditionally excluding storm water discharges from industrial facilities that can demonstrate "no exposure" of industrial activities or materials to storm water.[50]

Accordingly, the Central Valley Regional Water Quality Control Board (Central Valley Water Board) issued the first Phase I MS4 permit in 1990 to regulate municipal storm water discharges. Initially, Phase I MS4 permits contained the essentials of the CWA regulations, yet provided the flexibility to address and manage storm water discharges through a runoff management program. Subsequent Phase I MS4 permits issued over the next 25 years expanded requirements to include substantively the same core requirements as that first-issued Phase I MS4 permit:

1. CWA section 303(d) List and Total Maximum Daily Load (TMDL) requirements to be integrated into monitoring and storm water management program implementation;

2. compliance with water quality standards based on discharge prohibitions and receiving water limitations;

3. iterative process for managing storm water runoff;

4. sufficient levels of implementation to meet the maximum extent practicable (MEP) standard for municipal storm water discharges;

5. design standards for structural post-construction best management practices (BMPs) for new development and significant redevelopment;

6. a monitoring and reporting program;

7. a watershed management approach and more watershed-wide coordination;

8. assessments to determine the effectiveness of the Storm Water Management Program implementation; and

9. new and emerging approaches for managing storm water runoff and discharges, (e.g., low impact development (LID) and hydromodification).

[50] USEPA, 1999. 40 CFR Parts 9, 122, 123, and 124. National Pollutant Discharge Elimination System Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges, Final Rule 64 FR 68727.

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Despite including substantively the same core requirements in each permit, several inconsistencies remained that complicated oversight and implementation by the Central Valley Water Board. Currently, the Central Valley Water Board's MS4 Program oversees 7 Phase I MS4 permits covering 23 MS4s and implements the State Water Resources Control Board's (State Water Board) Phase II MS4 Permit, which covers over 120 Phase II MS4s across the Central Valley region. The Central Valley Water Board has acknowledged that issuing a single, region-wide MS4 permit that could apply to all Phase I and II MS4 Permittees in the Central Valley region can and is expected to result in more consistent implementation, improving coordination among agencies with watersheds crossing multiple jurisdictions, and minimizing resources spent with each permit renewal process.

C. Region-Wide MS4 Permit Approach

This Order shifts the focus of permit requirements from a level of actions to be implemented by the Permittee to identifying outcomes to be achieved by those actions. This permitting approach, referred to as a water quality focused framework, represents an important paradigm shift in the approach for MS4 permits within the Central Valley region. Any Phase I or II MS4 under the jurisdiction of the Central Valley Water Board, or their designated representative, may enroll in this Order.

There are two main objectives for the development of a Region-wide MS4 Permit: 1) bring a consistent set of MS4 permit conditions to each of the Permittee's Storm Water Management Programs to be implemented within its Jurisdictional Runoff Area; and 2) provide a water quality focused MS4 permit with conditions that will allow the Permittee the flexibility to focus efforts and resources on achieving water quality improvement rather than on completing specific prescriptive actions.

To accomplish these goals, this Order requires each Permittee to follow a Performance-Based approach to implement its Storm Water Management Program as described in their Storm Water Management Plan (SWMP). This Order also provides a Prescriptive-Based alternative, which serves as a "backstop" should a Central Valley Water Board approved SWMP fail to be developed or properly implemented. The Prescriptive-Based approach clearly defines a traditional process that provides a predictable step-by-step pathway for the Permittee to follow. This approach is familiar and simple, providing a clear description of acceptable steps to compliance.

The Performance-Based approach included in this Order, with respect to each Permittee's Storm Water Management Program, will be to focus on identification and prioritization of water quality impairments, and implementation of effective, reasonable and timely actions to address those priority impairments. Development and implementation of each Permittee's Storm Water Management Program will be based on assessments completed by the Permittee in accordance with prioritized water quality conditions. The Permittees will have flexibility in the development and implementation of their Storm Water Management Programs to best utilize their available resources in addressing a specific set of priorities effectively. Trying to address all the water quality priorities simultaneously has resulted in limited success, or Permittees expending resources conducting activities that do not necessarily focus on the priority water quality constituents.

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Based on prioritized water quality conditions, the Permittees will identify incremental ~~programmatic~~ non-water quality and water quality ~~improvement~~ milestones, strategies, and activities that can be used to measure and demonstrate progress or improvements toward addressing those priorities. ~~Water quality improvement m~~Milestones, strategies, and approaches developed by the Permittee must include specific requirements and dates for their achievement consistent with other compliance dates described in this Order (e.g., TMDL compliance dates, reporting due dates). Milestones and dates must be developed and implemented for monitoring and program elements.

Each Permittee must develop a schedule that integrates the milestones and dates for their achievement described in their SWMP. As part of the SWMP development, the Permittee must identify enforceable requirements and milestones and dates for their achievement to control MS4 discharges such that they do not cause or contribute to exceedances and/or excursions of water quality standards. Achievement of milestones must occur within a timeframe(s) that is as short as possible, taking into account the technological, operational, and economic factors that affect the design, development, and implementation of the control measures that are necessary to meet milestones. Milestones and dates for their achievement must relate to a specific water quality endpoint (e.g., a percentage reduction in sediment toxicity, MS4 drainage area is meeting the receiving water limitations within that area, or meeting assigned waste load allocations specified in the applicable TMDL(s)). During the early stages of managing a priority water quality constituent, milestones may relate to a necessary non-water quality action such as securing approval or financing for a capital improvement project that ultimately will achieve water quality milestones. The measurement of progress toward achieving the milestones requires a better defined and more focused Storm Water Management Program than under the prior permit terms.

By providing a Region-wide MS4 Permit that allows the Permittees to make more decisions about how to utilize and focus their resources, along with better defined monitoring and reporting requirements to inform their programmatic and water quality management decisions, the Permittee will have the opportunity to:

1. *Plan strategically*. The Permittee must have the ability to identify their available resources and develop and implement long term management plans that can organize, collect, and use those resources in the most strategically advantageous and efficient manner possible. The ability to develop long term plans will allow the Permittee to focus and utilize their resources in a more concerted way in order to address specific water quality priorities through stated desired outcomes.

2. *Manage adaptively*. The Permittee must be given the ability to modify their plans as additional information and data are collected. As a result of the new information and/or data, *modifications* to a Permittee's plans, programs, priorities, milestones, strategies, and/or schedules may be necessary in order to achieve a stated desired outcome.

3. *Identify synergies*. The Permittee must be given more flexibility to identify efficiencies within and among its SWMP as the strategies are developed and implemented to increase the Permittee's collective effectiveness. The Permittee must also be *able* to identify and utilize resources available from other agencies and entities to further augment and enhance their SWMPs and/or to collectively work with those other agencies and entities toward achieving a stated desired outcome.

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The requirements of this Order will provide each Permittee the flexibility and responsibility to decide what actions will be necessary to achieve an outcome that is tailored and designed by the Permittee to improve the water quality conditions. The Central Valley Water Board expects the approach of this Order to give each Permittee a greater sense of ownership for restoring the quality of receiving waters in the Jurisdictional Runoff Area by becoming an integral part of the decision making process in identifying water quality conditions to be addressed, as well as determining the best use of their resources.

Under the Performance-Based approach, the Permittee will have the flexibility necessary to shift its program to more targeted, water quality-driven planning and implementation, rather than prescriptive, fixed actions. The conditions of the receiving waters drive management actions, which in turn focus on measures to address pollutant contributions from MS4 discharges. It is critical that the Permittee designs and implements their Storm Water Management Program based on improved knowledge of storm water and its impacts on local and regional receiving waters in the Jurisdictional Runoff Area, and by employing BMPs that have been developed and refined over the past two decades. Storm Water Management Programs are driven by strategic planning, implementation, and adaptive management, which may result in more cost effective implementation. This approach, which is supported by short- and long-term planning and implementation, ultimately allows the Permittee the time and flexibility through adaptive management to prioritize and customize control measures to address the local water quality issues that are specific to their Jurisdictional Runoff Area.

The Order authorizes the discharge of pollutants contained in storm water discharges, so long as the MS4 reduces the level of pollutants discharged to the MEP and does not otherwise cause or contribute to exceedances and/or excursions of any applicable water quality objective or water quality standard (collectively, WQS). The Order also authorizes the discharge of pollutants from certain non-storm water discharges. The Permittee's full compliance with the requirements in this Order, including timely implementation of their Storm Water Management Program described in its SWMP and Work Plans, constitutes compliance with the Discharge Prohibitions and Receiving Water Limitations (**Parts II.A and IV**).

Although Permittees may prioritize different pollutants and adopt different strategies for meeting the MEP standard based on their unique circumstances, Permittees will fundamentally step through the same process of the water quality focused permit framework to obtain and maintain coverage under this Order. Some benefits of a water quality focused permitting framework include:

1. Efficiently leveraging municipal storm water resources at a regional level (e.g., monitoring and public outreach);

2. Increasing flexibility;

3. Relating priority constituents of concern to Storm Water Management Program actions;

4. Establishing a consistent regulatory framework for MS4 owners and operators across the Central Valley region;

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5. Providing the ability for municipalities to prioritize the Storm Water Management Program elements with the greatest benefit to water quality; and

6. Assessing progress at local, regional, or watershed levels.

D. Defined Terms

Many terms (e.g., "Permittee") in this Order are defined in **Attachment C** (*Acronyms, Abbreviations, and Definitions*). All other terms shall have the meaning prescribed in the federal Clean Water Act, as amended, and the Clean Water Act's applicable regulations (collectively, the "CWA") or the Porter-Cologne Water Quality Control Act, (California Water Code (Water Code) §13000 *et seq*.). Any terms not defined in **Attachment C** (*Acronyms, Abbreviations, and Definitions*), the Water Code, or the CWA shall have their ordinary meaning.

II. APPLICABLE STATUTES, REGULATIONS, PLANS AND POLICIES

A. Legal Authorities – Federal Clean Water Act and California Water Code

This Order is issued pursuant to section 402 of the CWA and implementing regulations adopted by the USEPA and chapter 5.5, division 7 of the California Water Code (CWC) (commencing with section 13370). This Order serves as an NPDES permit for point source discharges to surface waters. This Order also serves as waste discharge requirements pursuant to article 4, chapter 4, division 7 of the CWC (commencing with section 13260) to the extent those provisions implement the federal NPDES permitting program in California.

The objective of the CWA is "*to restore and maintain the chemical, physical, and biological integrity of the Nation's waters*." To carry out this objective, the CWA requires the implementation of permit programs to regulate the discharge of pollutants and dredged or fill material to the navigable waters of the U.S. and to regulate the use and disposal of sewage sludge. CWA section 402 provides the legal authority to issue a permit for the discharge of pollutants to waters of the U.S. under the NPDES. The CWA provides that NPDES permits may be issued by states which are authorized to implement the provisions of that act. California became authorized to implement the NPDES permit program on May 14, 1973.

The Porter-Cologne Water Quality Control Act (Division 7, commencing with CWC section 13000) established the State Water Board and nine Regional Water Quality Control Boards (Regional Water Boards) as the principal state agencies with primary responsibility for the coordination and control of water quality. CWC section 13200(f) established the Central Valley Water Board, which has the primary responsibility for the coordination and control of water quality in the Central Valley region, which includes but is not limited to all the basins draining into the Sacramento-San Joaquin River Delta and their tributaries. The Central Valley Water Board implements the CWA through Chapter 5.5 of the CWC, commencing with section 13370. CWC section 13377 provides the Central Valley Water Board the legal authority to issue waste discharge requirements to ensure compliance with all applicable provisions of the CWA and acts amendatory thereof or supplementary, thereto, to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance.

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CWA section 402(p) requires the USEPA or authorized state to issue NPDES permits for storm water discharges from MS4s to waters of the U.S. CWA section 402(p)(3)(B)(ii) requires that NPDES permits for storm water discharges from MS4s "*effectively prohibit non-storm water discharges*" into the MS4s. CWA section 402(p)(3)(B)(iii) requires that NPDES permits for storm water discharges from MS4s to "*require controls to reduce the discharge of pollutants to the maximum extent practicable* [MEP], *including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants*."

The USEPA published implementing regulations (Code of Federal Regulations [CFR] Title 40, Part 122 [40 CFR 122]), which prescribe permit application requirements for storm water discharges from MS4s pursuant to CWA section 402(p), on November 16, 1990. The USEPA published an Interpretive Policy Memorandum on *Reapplication Requirements for Municipal Separate Storm Sewer Systems*, which provided guidance on permit application requirements for regulated MS4s, on May 17, 1996. The federal regulations in 40 CFR 122 and guidance issued by USEPA serve as the foundation for the provisions of previous MS4 permits issued by the Central Valley Water Board. CWA section 402(p)(3)(B) provides the Central Valley Water Board the legal authority to issue an NPDES permit as compared to separate MS4 permits based upon City, County - and partial County-wide boundaries as they exist within the Central Valley region. CWA section 402(p)(3)(B) states that "*Permits for discharges from municipal storm sewers- (i) may be issued on a system- or jurisdiction-wide basis* ...." The federal regulations in 40 CFR 122.26(a)(1)(v) also state that the Central Valley Water Board "*may designate dischargers from municipal separate storm sewers on a system-wide or jurisdiction-wide basis. In making this determination, the [Central Valley Water Board] may consider the following factors: (A) the location of the discharge with respect to waters of the United States; (B) the size of the discharge; (C) the quantity and nature of the pollutants discharged to waters of the United States; and (D) other relevant factors*."

More specifically, the federal regulations provide that for large and medium MS4 systems, the Central Valley Water Board may issue a regional permit. Specifically, the federal regulation in 40 CFR 122.26(a)(3)(ii) through (v) provides:

> "*(ii) The Director may either issue one system-wide permit covering all discharges from municipal separate storm sewers within a large or medium municipal storm sewer system or issue distinct permits for appropriate categories of discharges within a large or municipal separate storm sewer system including, but not limited to: all discharges owned or operated by the same municipality; located within the same jurisdiction; all discharges within a system that discharge to the same watershed; discharges within a system that are similar in nature; or for individual discharges from municipal separate storm sewers within the system.*
>
> *(iii) The operator of a discharge from a municipal separate storm sewer which is part of a large or medium municipal separate storm sewer system must either: (A) Participate in a permit application (to be a permittee or a co-permittee) with one or more other operator of discharges from the large or medium municipal storm*

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sewer system which covers all, or a portion of all, discharges from the municipal separate storm sewer system; (B) Submit a distinct permit application which only covers discharges from the municipal separate storm sewers for which the operator is responsible; or (C) A regional authority may be responsible for submitting a permit application under the following guidelines....

(iv) One permit application may be submitted for all or a portion of all municipal separate storm sewers within adjacent or interconnected large or medium municipal separate storm sewer systems. The Director may issue one system wide permit covering all, or a portion of all municipal separate storm sewers in adjacent or interconnected large or medium municipal separate storm sewer systems.

(v) Permits for all or a portion of all discharges from large or medium municipal separate storm sewer systems that are issued on a system-wide, jurisdiction-wide, watershed or other basis may specify different conditions relating to different discharges covered by the permit, including different management programs for different drainage areas which contribute storm water to the system."

For other municipal and non-municipal separate storm sewer systems, federal regulation in 40 CFR 122.26(a)(5) and (6) states:

"(5) The Director may issue permits for municipal separate storm sewers that are designated under paragraph (a)(1)(v) of this section on a system wide basis, jurisdiction-wide basis, watershed basis or other appropriate basis, or may issue permits for individual discharges.

(6) For storm water discharges associated with industrial activity from point sources which discharge through a non-municipal or non-publicly owned separate storm sewer system, the Director, in his discretion, may issue: a single NPDES permit, with each discharger a co-permittee to a permit issued to the operator of the portion of the system that discharges into waters of the United States; or, individual permits to each discharger of storm water associated with industrial activity through the non-municipal conveyance system."

Based on these regulations, the Central Valley Water Board may issue a region-wide MS4 permit. The regulations also clarify that the permit may include different conditions for separate discharges covered by the permit. This allows the Central Valley Water Board to ensure that suitable water quality conditions and provisions are identified for each watershed.

The regional nature of this Order will ensure consistency of regulation within the Central Valley region and is expected to result in overall cost savings for Permittees. Managing storm water on a regional and watershed basis is expected to result in improved water quality, as this Order focuses on management practices necessary to improve water quality within the region rather than political boundaries. A single permit also allows the Central Valley Water Board staff to expend fewer resources developing successive

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multiple permits and allows more resources to be devoted to working cooperatively with each Permittee or Permittee group to ensure implementation of this Order results in improved water quality.

B. Federal and California Endangered Species Acts

This Order does not authorize any act that results in the taking of a threatened or endangered species or any act that is now prohibited, or becomes prohibited in the future, under either the California Endangered Species Act (Fish and Game Code sections 2050 to 2115.5) or the Federal Endangered Species Act (16 United States Code sections 1531 to 1544). This Order requires compliance with requirements to protect the designated beneficial uses of waters of the United States. Each Permittee is responsible for meeting all applicable requirements of the California and Federal Endangered Species Acts.

C. California Environmental Quality Act

The action to adopt an NPDES Permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (Public Resources Code (PRC) section 21100, et seq.) pursuant to CWC section 13389. (*County of Los Angeles v. Cal. Water Boards* (2006) 143 Cal.App.4th 985.)

D. State and Federal Regulations, Plans and Policies

The legal authority provided by the following regulations, plans, and policies are also included as part of the discussions in this Fact Sheet.

1. Water Quality Control Plans for the Sacramento-San Joaquin River Basins and Tulare Lake Basin

The CWA requires the Central Valley Water Board to establish water quality standards for each water body in its region. Water quality standards include beneficial uses, water quality objectives and criteria that are established at levels sufficient to protect beneficial uses, and an antidegradation policy to prevent degrading of waters. The Central Valley Water Board has adopted the *Water Quality Control Plan for the Sacramento and the San Joaquin River Basins*, Fourth Edition (Revised June 2015) and *Water Quality Control Plan for the Tulare Lake Basin*, Second Edition (Revised January 2015) (Basin Plan). Each Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters in the Central Valley Region. In addition, the Basin Plan implements State Water Board Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic supply. Beneficial uses applicable to the surface water bodies that receive discharges from the MS4s within the Central Valley Region generally include those listed below:

Each Basin Plan identifies the following existing and potential beneficial uses for surface waters include:

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a. Municipal and Domestic Supply (MUN)
b. Agricultural Supply (AGR)
c. Industrial Service Supply (IND)
d. Industrial Process Supply (PRO)
e. Ground Water Recharge (GWR)
f. Freshwater Replenishment (FRSH)
g. Navigation (NAV)
h. Hydropower Generation (POW)
i. Contact Water Recreation (REC-1)
j. Non-contact Water Recreation (REC-2)
k. Commercial and Sport Fishing (COMM)
l. Aquaculture (AQUA)
m. Warm Freshwater Habitat (WARM)
n. Cold Freshwater Habitat (COLD)
o. Estuarine Habitat (EST)
p. Wildlife Habitat (WILD)
q. Preservation of Biological Habitats of Special Significance (BIOL)
r. Rare, Threatened, or Endangered Species (RARE)
s. Migration of Aquatic Organisms (MIGR)
t. Spawning, Reproduction, and/or Early Development (SPWN)
u. Shellfish Harvesting (SHELL)

2. Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary

The State Water Board has adopted the *Water Quality Control Plan for the San Francisco Bay/Sacramento-San Joaquin Delta Estuary* (Revised December 2006), commonly referred to as the "Bay-Delta Plan." The Bay-Delta area includes the Sacramento- San Joaquin Delta, Suisun Marsh, and San Francisco Bay. The Bay-Delta Plan consists of: (1) beneficial uses to be protected; (2) water quality objectives for the reasonable protection of beneficial uses; and (3) a program of implementation for achieving the water quality objectives. The following beneficial uses for surface waters in the San Francisco Bay/Sacramento-San Joaquin Delta include:

a. Municipal and Domestic Supply (MUN)
b. Industrial Service Supply (IND)
c. Industrial Process Supply (PRO)
d. Agricultural Supply (AGR)
e. Ground Water Recharge (GWR)
f. Navigation (NAV)
g. Contact Water Recreation (REC-1)
h. Non-contact Water Recreation (REC-2)
i. Shellfish Harvesting (SHELL)
j. Commercial and Sport Fishing (COMM)

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k. Warm Freshwater Habitat (WARM)
l. Cold Freshwater Habitat (COLD)
m. Migration of Aquatic Organisms (MIGR)
n. Spawning, Reproduction, and/or Early Development (SPWN)
o. Estuarine Habitat (EST)
p. Wildlife Habitat (WILD)
q. Rare, Threatened, or Endangered Species (RARE)

Pursuant to CWC sections 13263 and 13377, the requirements of this Order implement these Basin Plans and the Bay-Delta Plan, as applicable.

3. Antidegradation Policy

Federal regulations (40 CFR 131.12) require that the state water quality standards include an antidegradation policy consistent with the federal antidegradation policy. The State Water Board established California's antidegradation policy in State Water Board Resolution No. 68-16 ("Statement of Policy with Respect to Maintaining the Quality of the Waters of the State"). State Water Board Resolution No. 68-16 complies with the federal antidegradation policy where the federal policy applies under federal law.

The Central Valley Water Board's Basin Plan implements and incorporates by reference both the State and federal antidegradation policies. State Water Board Resolution No. 68-16 and 40 CFR 131.12 require the Central Valley Water Board to maintain high quality waters of the State until it is demonstrated that any change in quality will be consistent with maximum benefit to the people of the State, will not unreasonably affect beneficial uses, and will not result in water quality less than that described in the Central Valley Water Boards' policies. State Water Board Resolution No. 68-16 requires that discharges of waste to high quality waters be regulated to meet Best Practicable Treatment or Control (BPTC) to assure that pollution or nuisance will not occur and the highest water quality consistent with the maximum benefit to the people of the State be maintained.

The discharges permitted in this Order are consistent with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution No. 68-16. Many of the water bodies within the area covered by this Order are of high quality. ~~The Order requires each Permittee to BPTC to meet water quality standards.~~ As required by 40 CFR 122.44(a), each Permittee must comply with the MEP technology-based standard set forth in CWA section 402(p) for discharges of pollutants in storm water from the MS4s.

Although many of the water bodies within the area covered by this Order are of high quality, there are also many water bodies that are impaired and listed on the State's CWA section 303(d) List and the Central Valley Water Board has established TMDLs to address these impairments. This Order requires Permittees to comply with applicable effluent limitations described in **Attachment G**, which are consistent with the assumptions and requirements of applicable waste load allocations set forth in the TMDLs. Because the development and approval of new TMDLs, or modification of existing TMDLs, may occur during the term of this Order, **Attachment G** will be

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updated with new TMDLs and modifications to existing TMDLs as appropriate. The USEPA provides different approaches for TMDL implementation in its *Draft TMDLs to Stormwater Permits Handbook,* which discusses BMP review and selection, establishing linkages between BMP implementation and load reductions, assessments, and BMP/outfall/receiving water monitoring.[51] This Order includes requirements to develop and implement Storm Water Management Programs, prevent or eliminate discharges causing or contributing to violations of water quality standards, and effectively prohibit non-storm water discharges into the MS4. The issuance of this Order does not authorize an increase in the amount of discharge of waste.

4. Anti-backsliding Requirements

Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations at 40 CFR section 122.44(l) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations and other conditions in this Order are at least as stringent as the effluent limitations in previous permits issued by the Central Valley Water Board and the State Water Board.

5. Clean Water Act Section 303(d) List and Total Maximum Daily Loads

CWA section 303(d)(1) requires each State to identify specific water bodies within its boundaries where water quality standards are not being met or are not expected to be met after implementation of technology-based effluent limitations on point sources. Water bodies that do not meet water quality standards are considered impaired and are placed on the state's "303(d) List." Periodically, USEPA approves the State's updated CWA section 303(d) List.

Most recently, USEPA approved the State's 2012 CWA section 303(d) List of impaired water bodies, which includes certain receiving waters in the Central Valley region. For each listed water body, the state or USEPA is required to establish a TMDL for each pollutant impairing the water quality standards in that water body. A TMDL is a tool for implementing water quality standards and is based on the relationship between pollution sources and in-stream water quality conditions. The TMDL establishes the allowable pollutant loadings for a water body and thereby provides the basis to establish water quality-based controls. These controls should provide the pollution reduction necessary for a water body to meet water quality standards.

A TMDL is the sum of the allowable pollutant loads of a single pollutant from all contributing point sources (the waste load allocations) and non-point sources (load allocations) plus the contribution from background sources and a margin of safety (40 CFR 130.2(i)). MS4 discharges are considered point source discharges. For 303(d)-listed water bodies and pollutants in the Central Valley region, the Central Valley Water Board or USEPA develops and adopts TMDLs that specify these requirements.

[51] Draft TMDLs to Stormwater Permits Handbook, USEPA, 2008, Chapters 5 and 6.

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Since 1999, the Central Valley Water Board has established fifteen (15) TMDLs to remedy water quality impairments in various water bodies within the Central Valley region. Some of these TMDLs identify MS4 discharges as a source of pollutants to these water bodies, and, as required, establish waste load allocations or other requirements for water bodies located within MS4 jurisdictions and/or MS4 discharges to reduce the amount of pollutant discharged to receiving waters (**Attachment G,** *Specific Provisions for Total Maximum Daily Loads Applicable to Order R5-2016-XXXX*). CWA section 402(p)(3)(B)(iii) requires the Central Valley Water Board to impose permit conditions, including: "management practices, control techniques and system, design and engineering methods, and *such other provisions as the Administrator or the State determines appropriate for the control of such pollutants."* (Emphasis added.) CWA section 402(a)(1) also requires states to issue permits with conditions necessary to carry out the provisions of the CWA. Federal regulations require that NPDES permits incorporate water quality based effluent limitations that are consistent with the requirements and assumptions of any applicable waste load allocations (WLAs), which may be expressed as numeric effluent limitations, when feasible, and/or as a BMP program of expanded or better-tailored BMPs (40 CFR 122.44(d)(1)(vii)(B) and 40 CFR 122.44(k)(2) and(k)(3)). CWC section 13377 also requires that NPDES permits include limitations necessary to implement water quality control plans. Therefore, this Order includes water quality objectives, receiving water limits and other provisions to implement the TMDL waste load allocations assigned to Permittees regulated by this Order.

Each TMDL in Attachment G includes the following information:

a. **Applicability**: This information includes: the resolution under which the TMDL Basin Plan amendment was adopted and approved, the applicable effective date of the TMDL, where the TMDL is applicable (i.e. water body), and the Permittees that are responsible for implementing the specific provisions.

b. **Interim TMDL Compliance Requirements**: If the final TMDL compliance date has not passed and there are interim TMDL compliance requirements, they are included in this section.

c. **Final TMDL Compliance Requirements**: For each TMDL, the final TMDL compliance requirements consist of the final date for attaining the applicable WLAs ("Final Compliance Deadline"), the applicable WLAs, and the TMDL compliance determination options. The WQBELs require the Permittee to implement BMPs that will meet the applicable WLA by the corresponding Final Compliance Deadline provided in Attachment G. The WQBELs implementing the TMDLs that apply to one or more Permittees are incorporated by reference into Provision III.B of the Order. Unless specified otherwise in Attachment G, applicable WLAs become enforceable as numeric WQBELs when the Final Compliance Deadline passes. BMPs implementing applicable WQBELs must be incorporated into SWMPs. Compliance with the applicable WQBELs will be determined in accordance with the TMDL compliance determination options.

d. **Specific Monitoring and Assessment Requirements**: Any applicable, specific monitoring and assessment requirements are included.

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6. National Toxics Rule and California Toxics Rule.

This Order implements all other applicable federal regulations and State regulations, plans and policies, including, but not limited to, the California Toxics Rule at 40 CFR 131.38 (Water Quality Standards; Establishment of Numeric Criteria for Priority Toxic Pollutants for the State of California Rule [California Toxics Rule or CTR*])*.

U.S. EPA adopted the National Toxics Rule (NTR) on 22 December 1992, and later amended it on 4 May 1995 and 9 November 1999. About forty criteria in the NTR applied in California. On 18 May 2000, U.S. EPA adopted the CTR. The CTR promulgated new toxics criteria for California and, in addition, incorporated the previously adopted NTR criteria that were applicable in the state. The CTR was amended on 13 February 2001. These rules contain federal water quality criteria for priority pollutants.

E. Economic Considerations

1. Statutory Considerations

California Water Code section 13241 requires the Central Valley Water Board to consider certain factors, including economic considerations, in the adoption of water quality objectives. CWC section 13263 requires the Central Valley Water Board to take into consideration the provisions of CWC section 13241 in adopting waste discharge requirements.

In *City of Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, the California Supreme Court considered whether California Regional Water Quality Control Boards (Regional Water Boards) must comply with CWC section 13241 when issuing waste discharge requirements under CWC section 13263(a) by taking into account the costs a Permittee will incur in complying with the permit requirements. The Court concluded that whether it is necessary to consider such cost information "*depends on whether those restrictions meet or exceed the requirements of the federal Clean Water Act.*" (*Id.* at p. 627.) The Court ruled that Regional Water Boards may not consider the factors in CWC section 13241, including economics, to justify imposing pollutant restrictions that are less stringent than applicable federal law requires. (*Id.* At pp. 618, 626-627 ["*[CWC section 13377 specifies that discharge permits issued by California's regional boards must meet the federal standards set by federal law. In effect, section 13377 forbids a regional board's consideration of any economic hardship on the part of the permit holder if doing so would result in the dilution of the requirements set by Congress in the Clean Water Act...Because CWC section 13263 cannot authorize what federal law forbids, it cannot authorize a regional board, when issuing a discharge permit, to use compliance costs to justify pollutant restrictions that do not comply with federal clean water standards*."]). However, when pollutant restrictions in an NPDES permit are more stringent than federal law requires, CWC section 13263 requires that the Regional Water Boards consider the factors described in CWC section 13241 as they apply to those specific restrictions.

As discussed in this Fact Sheet, the Central Valley Water Board finds that the requirements in this Order are not more stringent than the minimum federal

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requirements. Among other requirements, federal law requires MS4 permits to include requirements to effectively prohibit non-storm water discharges into the MS4s, in addition to requiring controls to reduce the discharge of pollutants in storm water to the MEP, and other provisions as USEPA or the State determines are appropriate for the control of pollutants in MS4 discharges.

The requirements in this Order may be more specific or detailed than those enumerated in federal regulations under 40 CFR 122.26 or in the USEPA guidance. However, the requirements have been designed to be consistent with and within the federal statutory mandates described in CWA section 402(p)(3)(B)(ii) and (iii) and the related federal regulations and guidance. Consistent with federal law, all of the conditions in this Order could have been included in a permit adopted by USEPA in the absence of the in lieu authority of California to issue NPDES permits.

Included in the provisions of the Order are monitoring and reporting requirements that are designed to demonstrate that each Permittee is implementing programs to comply with the CWA municipal storm water requirements. CWA section 308(a) and 40 CFR 122.41(h), (j)-(l), 122.44(i) and 122.48 require that all NPDES permits specify monitoring and reporting requirements. Federal regulations applicable to large and medium MS4s (40 CFR 122.26(d)(1)(iv)(D), 122.26(d)(1)(v)(B), 122.26(d)(2)(i)(F), 122.26(d)(2)(iii)(D), 122.26(d)(2)(iv)(B)(2) and122.42(c)) also specify additional monitoring and reporting requirements. In addition to the federal requirements of the CWA, the Central Valley Water Board also has the authority in CWC 13383 to establish monitoring, reporting, and recordkeeping requirements that implement federal and state laws and regulations through NPDES permits.
The monitoring and assessment information that will be reported to the Central Valley Water Board is necessary to determine if each Permittee is making progress toward achieving compliance with the discharge prohibitions and receiving water limitations included in this Order. The monitoring and assessment information that will be reported is also expected to be key to the iterative approach and adaptive management process required to be implemented by each Permittee if they cannot meet the discharge prohibitions and receiving water limitations under the present conditions, which is also part of the requirements under this Order.

Although consideration of CWC 13241 factors is not required for the issuance of this general NPDES permit, the Central Valley Water Board has nonetheless considered cost information in issuing this Order, as discussed below. The Central Valley Water Board has also considered all of the evidence that has been presented to the Central Valley Water Board regarding the CWC section 13241 factors in adopting this Order. The Central Valley Water Board finds that the requirements in this Order are reasonably necessary to protect beneficial uses identified in the Basin Plans and the economic information related to costs of compliance and other CWC section 13241 factors are not sufficient to justify failing to protect those beneficial uses. Where appropriate, the Central Valley Water Board has provided or will consider providing Permittees with additional time to implement control measures to achieve final Water Quality Based Effluent Limitations and/or water quality standards.

2. Cost Information

Discussions of the financial and economic ramifications of municipal Storm Water Management Programs tend to focus on the significant costs incurred by

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municipalities in developing and implementing the programs. When considering the cost of implementing the programs, however, it is also important to consider the alternative costs that are incurred when programs are not fully implemented, as well as the economic benefits that result from effective program implementation.

The recent financial and economic conditions have amplified the concerns about the costs incurred by the municipalities in developing and implementing their programs. The reduction in resources resulting from the recent financial and economic conditions has been cited by Permittees as a justification for reducing the requirements that must be met by their programs. While the recent conditions are a cause for concern in the short term, these programs also have an opportunity to identify and implement improvements and efficiencies before the next period of growth and development, resulting in more effective and sustainable programs over the long term.

In addition, it is very difficult to ascertain the true cost of implementation of each Permittee's Storm Water Management Program because of reporting inconsistencies. Reported costs of compliance for the same program element can vary widely from municipality to municipality, often by a very wide margin that is not easily explained. Despite these problems, efforts have been made to identify management program costs, which can be helpful in understanding the costs of program implementation.

The Central Valley Water Board recognizes that Permittees will incur costs in implementing this Order, potentially above and beyond the costs from each Permittee's prior permits. The Central Valley Water Board also recognizes that, due to California's current economic condition, Permittees currently have limited staff and resources to implement actions to address its MS4 discharges. Based on the economic considerations below, the Central Valley Water Board has provided Permittees a significant amount of flexibility to choose how to implement the requirements of this Order.

Under the Performance-Based approach, the Order allows each Permittee to customize its Storm Water Management Program to meet permit requirements. For instance, it is up to the Permittee to determine the effective BMPs and measures necessary to comply with this Order. Each Permittee can choose to implement the least expensive measures that are effective in meeting the requirements of this Order. Alternatively, the Executive Officer can direct a Permittee to implement the Prescriptive-Based approach should specific criteria be met (e.g., non-submittal of a SWMP, inadequate implementation of a Storm Water Management Program). The Prescriptive-Based approach follows a traditional storm water management program strategy included in previous permits issued by the Central Valley Water Board. In either case, this Order does not require each Permittee to fully implement all requirements within a single permit term. Where appropriate, the Central Valley Water Board has provided Permittees with additional time outside of the permit term to implement control measures to achieve water quality standards.

The Central Valley Water Board has considered cost information associated with compliance with this Order. It is not possible to predict accurately the cost impact of the requirements that involve an unknown level of implementation or that depend on

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environmental variables that are as yet undefined. Only general conclusions can be drawn from this information.

3. Estimated Municipal Storm Water Management Program Implementation Costs

The USEPA, the State Water Board, and the Regional Water Boards have attempted to evaluate the costs of implementing municipal storm water programs. The assessments have demonstrated that the true costs are difficult to ascertain and reported costs vary widely. In addition, reported fiscal analyses tend to neglect the costs incurred to municipalities when storm water and non-storm water runoff is not effectively managed, which are incurred as a result of pollution, contamination, nuisance, and damage to ecosystems, property, and human health. Nonetheless, they provide a useful context for considering the costs of requirements within this Order.

In 1999, the USEPA reported on multiple studies conducted to determine the cost of management programs. A study of Phase II municipalities determined that the annual cost of the Phase II program was expected to be $9.16 per household. The USEPA also studied 35 Phase I municipalities, finding costs to be $9.08 per household annually, similar to those anticipated for Phase II municipalities.[52]

In 2005, the State Water Board commissioned a study by the California State University, Sacramento to assess costs of the Phase I MS4 program. This study, the most recent of its kind currently available, includes an assessment of costs incurred by Phase I MS4s throughout the state to implement their programs. Annual cost per household in the study ranged from $18 to $46, with the City of Sacramento (Sacramento County) and Fresno-Clovis Metropolitan Area (Fresno County) representing the lower end of the range ($29 and $18 per household, respectively), and the City of Encinitas (in San Diego County) representing the upper end of the range ($46 per household).[53]

It is important to note that reported program costs are not all attributable to solely complying with MS4 permits. Many program components, and their associated costs, existed before any MS4 permits were ever issued. For example, street sweeping and trash collection costs cannot be solely or even principally attributable to MS4 permit compliance, since these practices have long been expected from and implemented by municipalities. Therefore, true program cost resulting from MS4 permit requirements is some fraction of reported costs. The California State University, Sacramento study found that only 38 percent of program costs are new costs fully attributable to MS4 permits. The remainder of the program costs either pre-existed or resulted from enhancement of pre-existing programs.[54]

4. Estimated Value of Healthy Water Quality

[52]Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations. p. 68791-68792.
[53]State Water Board, 2005.NPDES Storm Water Cost Survey. p.ii.
[54]State Water Board, 2005.NPDES Storm Water Cost Survey. Figure 9-7, pp. 56-58.

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Economic considerations of municipal Storm Water Management Programs cannot be limited only to program costs. Evaluation of programs must also consider information on the benefits derived from environmental protection and improvement.[55] Attention is often focused on municipal Storm Water Management Program costs, but the programs must also be viewed in terms of their value to the public.

Placing a value on healthy receiving waters is very difficult. Often the value of receiving waters with good water quality manifests in other forms, such as tourism, recreational opportunities, and/or increased property values. When surface water bodies are degraded, thereby degrading the habitat within and adjacent to the water bodies, the public loses the value and benefits associated with being able to use the area in and around the water bodies. Surface waters that are able to support the beneficial uses designated in the Basin Plans can sustain plants and wildlife that can attract visitors and residents, providing aesthetic, recreational, as well as monetary value to the public. At this time, however, there have been no studies for the Central Valley region to quantify the added value that surface waters with healthy water quality can provide.

USEPA has estimated that household willingness to pay for improvements in fresh water quality for fishing and boating is approximately $158-$210.[56] This estimate can be considered conservative, since it does not include important considerations such as marine waters benefits, wildlife benefits, or flood control benefits. Another study conducted by California State University, Sacramento reported that the annual household willingness to pay for statewide clean water is approximately $180.[57]

As can be seen, the benefits of the municipal Storm Water Management Programs are expected to considerably exceed their costs. Such findings are corroborated by USEPA, which found that the benefits of implementation of its Phase II storm water rule would also outweigh the costs.[58]

F. Unfunded State Mandates

Article XIII B, section 6(a) of the California Constitution provides that whenever "*any state agency mandates a new program or higher level of service on any local government, the state shall provide a subvention of funds to reimburse that local government for the costs of the program or increased level of service*." The requirements of this Order do not constitute state mandates that are subject to a subvention of funds for several reasons, including, but not limited to, the following:

1. The requirements of this Order do not constitute a new program or a higher level of service as compared to the requirements contained in the previous permits issued by the Central Valley Water Board. The overarching requirement to impose controls to reduce the pollutants in discharges from MS4s is dictated by the CWA and is not

[55]Ribaudo M.O. and D. Heelerstein. 1992, *Estimating Water Quality Benefits: Theoretical and Methodological Issues,.* U.S. Department of Agriculture. Technical Bulletin No. 1808.
[56]Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations.p. 68793.
[57]State Water Board, 2005.NPDES Storm Water Cost Survey. p. iv.
[58]Federal Register / Vol. 64, No. 235 / Wednesday, December 8, 1999 / Rules and Regulations.p. 68791.

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new to this permit cycle. (33 United States Code (USC) section 1342(p)(3)(B).) The inclusion of new and advanced measures as the MS4 programs evolve and mature over time is anticipated under the CWA (55 Fed Reg. 47990, 48052 (Nov. 16, 1990)), and these new and advanced measures do not constitute a new program or higher level of service.

2. Mandates imposed by federal law, rather than by a state agency, are exempt from the requirement that the local agency's expenditures be reimbursed. (Cal. Const., art. XIII B, section 9, subd. (b).) This Order implements federally mandated requirements under the CWA and its requirements are therefore not subject to subvention of funds. This includes federal requirements to effectively prohibit non-storm water discharges, to reduce the discharge of pollutants to the MEP, and to include such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. (30 USC section 1342(p)(3)(B).) Federal cases have held these provisions require the development of permits and permit provisions on a case-by-case basis to satisfy federal requirements. (*Natural Resources Defense Council, Inc. v. USEPA* (9th Cir. 1992) 966 F.2d 1292, 1308, fn. 17.)

   The authority exercised under this Order is not reserved state authority under the CWA's savings clause (cf. *Burbank v. State Water Resources Control Bd*. (2005) 35 Cal.4th 613, 627-628 [relying on 33 USC section 1370, which allows a state to develop requirements which are not "less stringent" than federal requirements]), but instead is part of a federal mandate to develop pollutant reduction requirements for MS4s. To this extent, it is entirely federal authority that forms the legal basis to establish the permit provisions. (See, *City of Rancho Cucamonga v. Regional Water Quality Control Bd.-Santa Ana Region* (2006) 135 Cal.App.4th 1377, 1389; *Building Industry Ass'n of San Diego County v. State Water Resources Control Bd*. (2004) 124 Cal.App.4th 866, 882-883.)

   The MEP standard is a flexible standard that balances a number of considerations, including technical feasibility, cost, public acceptance, regulatory compliance, and effectiveness. (*Building Ind. Asso., supra,* 124 Cal. App.4th at pp. 873, 874, 889.) Such considerations change over time with advances in technology and with experience gained in storm water management. (55 Fed. Reg. 47990, 48052 (Nov. 16, 1990)) Accordingly, a determination of whether the conditions contained in this Order exceed the requirements of federal law cannot be based on a point by point comparison of the permit conditions and the six minimum control measures that are required "at a minimum" to reduce pollutants to the MEP and to protect water quality (40 CFR section 122.34). Rather, the appropriate focus is whether the permit conditions, as a whole, exceed the MEP standard.

   The requirements of the Order, taken as a whole rather than individually, are necessary to reduce the discharge of pollutants to the MEP and to protect water quality. The Central Valley Water Board finds that the requirements of the Order are practicable, do not exceed federal law, and thus do not constitute an unfunded mandate. These findings are the expert conclusions of the principal state agency charged with implementing the NPDES program in California. (Water Code sections 13001, 13370).

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It should also be noted that the provisions in this Order to effectively prohibit non-storm water discharges are also mandated by the CWA. (33 USC section 1342(p)(3)(B)(ii).) Likewise, the provisions of this Order to implement TMDLs are federal mandates. The CWA requires TMDLs to be developed for water bodies that do not meet federal water quality standards. (33 USC section 1313(d)). Once the USEPA or a state establishes or adopts a TMDL, federal law requires that permits must contain effluent limitations consistent with the assumptions and requirements of any applicable waste load allocation in a TMDL. (40 CFR section 122.44(d)(1)(vii)(B).)

3. The local agency Permittee's obligations under this Order are similar to or less stringent than, the obligations of non-governmental dischargers who are issued NPDES permits for storm water discharges. With a few inapplicable exceptions, the CWA regulates the discharge of pollutants from point sources (33 USC section 1342) and the Porter-Cologne Water Quality Control Act (Porter-Cologne Act) regulates the discharge of waste (CWC section 13263), both without regard to the source of the pollutant or waste. As a result, the "costs incurred by local agencies" to protect water quality reflect an overarching regulatory scheme that places similar requirements on governmental and non-governmental dischargers. (See *County of Los Angeles v. State of California* (1987) 43 Cal.3d 46, 57-58 [finding comprehensive workers compensation scheme did not create a cost for local agencies that was subject to state subvention].)

   Generally, the CWA requires point source dischargers, including discharges of storm water associated with industrial or construction activity, to comply strictly with water quality standards. (33 USC section 1311(b)(1)(C), *Defenders of Wildlife v. Browner* (1999) 191 F.3d 1159, 1164-1165 [noting that industrial storm water discharges must strictly comply with water quality standards]) As discussed and authorized in prior State Water Resources Control Board decisions, certain provisions of this Order do not require strict compliance with water quality standards. (e.g. SWRCB Order No. WQ 2015-0075, pp. 32-40; SWRCB Order No. WQ 2001-15, p. 7.) Those provisions of this Order regulate the discharge of waste in municipal storm water under the Clean Water Act MEP standard. These provisions, therefore, regulate the discharge of waste in municipal storm water based on the MEP standard.

4. The Permittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in CWA section 301, subdivision (a) (33 USC section 1311(a)). To the extent that the local agencies have voluntarily availed themselves of the permit, the program is not a state mandate. (Accord *County of San Diego v. State of California* (1997) 15 Cal.4th 68, 107-108.)

5. The local agencies' responsibility for preventing discharges of waste that can create conditions of pollution or nuisance from conveyances that are within their ownership or control under state law predates the enactment of Article XIIIB, Section (6) of the California Constitution.

6. Even if any of the permit provisions could be considered unfunded mandates, under Government Code (Govt Code) section 17556, subdivision (d), a state mandate is not subject to reimbursement if the local agency has the authority to charge a fee. The local agency Permittees have the authority to levy service charges, fees, or

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assessments sufficient to pay for compliance with this Order subject to certain voting requirements contained in the California Constitution. (See California Constitution XIII D, section 6, subdivision (c); see also *Howard Jarvis Taxpayers Association v. City of Salinas* (2002) 98 Cal. App. 4th 1351, 1358-1359.). The Fact Sheet demonstrates that numerous activities contribute to the pollutant loading in the MS4. Local agencies can levy service charges, fees, or assessments on these activities, independent of real property ownership. (See, e.g., *Apartment Ass'n of Los Angeles County, Inc. v. City of Los Angeles* (2001) 24 Cal.4th 830, 842 [upholding inspection fees associated with renting property].) The authority and ability of a local agency to defray the cost of a program without raising taxes indicates that a program does not entail a cost subject to subvention. (*Clovis Unified School Dist. v. Chiang* (2010) 188 Cal. App.4th 794, 812, quoting *Connell v. Superior Court* (1997) 59 Cal.App.4th 382, 401; *County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487-488.)

G. **Hydromodification Requirements Pursuant to Federal Law**

This Order contains requirements for Permittees to minimize the adverse effects of hydromodification on water quality. "Hydromodification," as the term is used in this Permit, refers to ecologically significant modification of a watershed's natural hydrograph, characterized by increased volume, velocity, rate, duration, and/or overall energy (collectively, "flow"). Hydromodification typically results from new land development that increases impervious surfaces, thereby increasing the flow of storm water runoff into the MS4 and receiving waters during storm events. Controls that minimize hydromodification impacts typically are designed to capture storm water runoff during storm events and control its release into receiving waters in a manner that approximates how the natural hydrograph would have responded to such a storm. Properly designed, installed, and maintained LID measures are a primary method to address the causes of hydromodification. ~~Hydromodification controls are especially important when LID measures fail to perform due to improper design, installation or maintenance.~~

Left uncontrolled, hydromodification has the potential to increase the discharge of pollutants into waters of the United States in at least two ways. First, significantly increasing the flow of storm water runoff is associated with increased sedimentation of receiving waters, whether such sediment originates from lands surrounding the receiving water or from the bed/bank of the receiving water itself.[59] Second, the sediment roiled by increased storm water flows can mobilize other pollutants that absorb or adsorb to sediment, thereby facilitating their deposition into waters of the United States. Such eroded sediment and sediment-bound pollutants often have adverse impacts to the quality of waters of the United States, sensitive habitat, and/or aquatic or terrestrial

[59] Higher intensity flows can loosen sediment within the MS4's Jurisdictional Runoff Area and cause the MS4 to discharge the sediment into waters of the United States. Additionally, higher intensity flows from an MS4 can loosen sediment that had settled in the bed and/or banks of waters of the United States and which would have remained settled if not for increased flows from the MS4. In this manner, higher intensity flows from an MS4 can cause or contribute to discharge of sediment into waters of the United States even when the sediment is not physically present in the MS4's effluent. *See Conway v. State Water Resources Control Board* (2015) 235 Cal.App.4th 671, ___, 185 Cal.Rptr.3d 490, 493-494 ("[O]ne can discharge a pollutant from one part of the receiving waters into another part of the same receiving waters.").

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organisms. Significant changes to the pre-development hydrograph can also disrupt natural drainage patterns in ways that cause significant increases in water temperatures in stream segments. These and similar changes can set off further water quality impacts, such as excessive nutrient loads and corresponding drops in dissolved oxygen. This explanation is intended as an illustrative, but not exhaustive list of the ways that hydromodification can lead to the discharge of pollutants into waters of the United States.

The connection between significant increases in flow and the discharge of pollutants finds additional support in precedential State Water Board orders. For example, in the 2000 State Water Board order *In re Bellflower* (the "SUSMPs Order"), the Board considered a challenge to the Los Angeles Regional Water Board's inclusion of numeric design criteria to manage the volume of Permittee's urban storm water runoff. The State Water Board made the following observation regarding the new development controls:

> [The controls] are aimed at limiting not just the pollutants in the runoff from the new development, but also the volume of runoff that enters the [MS4]. By limiting runoff from new development, the [controls] prevent increased impacts from urban runoff generally. <u>There is adequate technical information in the record to show that by controlling the volume of runoff from new development, BMPs can be effective in reducing the discharge of pollutants in storm water runoff</u>.[60]

The State Water Board reiterated this concept in 2001, stating, "The Regional Water Board is appropriately concerned not only with pollutants in runoff but also the volume of runoff, since the volume of runoff can affect the discharge of pollutants."[61] The well-established connection between higher intensity flows and the discharge of pollutants puts this Region-wide Permit's hydromodification requirements squarely within the mandates of the federal Clean Water Act. Section 402(p) of the Act provides that MS4 permits:

> … shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the [US EPA] Administrator or the State determines appropriate for the control of such pollutants.[62]

The hydromodification requirements in this Order fall within the MEP standard because they (1) are designed to effectively address pollutants of concern, (2) are technically feasible, and (3) will achieve benefits that bear a reasonable relationship to the cost of implementation. To the extent any of the hydromodification requirements in this Region-wide Permit may go beyond the MEP standard, their inclusion in this Order represents the Central Valley Water Board's judgment that they are necessary and appropriate for the control of pollutants.

[60] State Water Board Order WQ 2000-11, at p. 5 (emphasis added).
[61] State Water Board Order WQ 2001-15, at p. 12, fn. 23.
[62] 33 USC section 1342(p)(3)(B)(iii).

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III. APPLICATION REQUIREMENTS

A. Application

This Order specifies an effective date of **XX August 2016**. To obtain authorization under this Order, the Permittee must submit to the Central Valley Water Board a complete application within the time frames specified. To be eligible, the Permittee must be located within the Central Valley region coverage area of this General Permit (**Attachment D**, *Map of the Central Valley Region Covered by Order R5-2016-XXXX*). A complete application consists of the following:

1. A Notice of Intent (NOI) (**Attachment L**, *Notice of Intent*) signed in accordance with the signatory requirements of the Standard Permit Provisions and General Provisions in **Attachment H.** To enroll under this General Permit, Permittees authorized to discharge under another Central Valley Water Board or State Water Board MS4 permit that has not yet expired shall submit a NOI to the Executive Officer no later than thirty (30) days prior to the expiration date of its current MS4 permit. A Permittee authorized to discharge pursuant to an administratively extended MS4 permit shall submit a NOI within thirty (30) days of the Effective Date of this Order. [40 CFR § 122.28(b)(2)(iii)]. A Permittee desiring coverage under this permit that was not previously authorized to discharge under another Central Valley Water Board or State Water Board MS4 permit shall submit a NOI at least ninety (90) days in advance of the anticipated discharge date to provide time for review of the application package (40 CFR § 122.28(b)(2)(iii)). This time period may be waived by the Executive Officer; and
2. An application fee. A fee is required only for new Permittees enrolling for the first time. Permittees that were authorized to discharge under a prior Central Valley Water Board or State Water Board MS4 Permit and are applying for coverage under this Permit will be billed during the regular annual billing cycle.

Within ninety (90) days of receipt of an application, the Central Valley Water Board will either issue a Notice of Applicability (NOA) or deny the application if incomplete. If an NOA is issued, the Permittee is authorized to discharge under this Order starting on the date indicated on the NOA [40 CFR 122.28(b)(2)(iii)].

B. Fees

The fee for enrollment under this Order shall be based on Title 23, California Code of Regulations (CCR), section 2200, which is available at http://www.waterboards.ca.gov/resources/fees/water_quality/ and is payable to the State Water Board.

C. Terminating Coverage

1. To terminate permit coverage, the Permittee must submit a complete and accurate Notice of Termination (NOT) provided in **Attachment M** within thirty (30) days following permanent termination of a discharge or discharges authorized under the Order. Upon approval of the NOT, the Permittee's authorization to discharge under

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this Order is discontinued. Prior to the termination effective date, the Permittee is subject to the terms and conditions of this Order and is responsible for submitting the annual fee and all reports associated with this Order.

2. The Permittee shall submit an NOT when one of the following conditions occurs:

   a. The Permittee has ceased all discharges for which it obtained Order coverage and does not expect to discharge during the remainder of this permit term; or

   b. The Permittee has obtained coverage under an individual permit or an alternative Order for all discharges required to be covered by an NPDES permit.

IV. RATIONALE FOR DISCHARGE PROHIBITION SPECIFICATIONS

A. Definition of Storm Water and Non-Storm Water

Federal regulations define "storm water" as "storm water runoff, snow melt runoff, and surface runoff and drainage." (40 C.F.R. section 122.26(b)(13).) While "surface runoff and drainage" is not defined in federal law, USEPA's preamble to the federal regulations demonstrates that the term is related to precipitation events, such as rain and/or snowmelt. (55 FR 47990, 47995-96 (Nov. 16, 1990)). For example, USEPA states:

> In response to the comments [on the proposed rule] which requested EPA to define the term 'storm water' broadly to include a number of classes of discharges which are not in any way related to precipitation events, EPA believes that this rulemaking is not an appropriate forum for addressing the appropriate regulation under the NPDES program of such non-storm water discharges….Consequently, the final definition of storm water has not been expanded from what was proposed.

(*Ibid.*) The storm water regulations themselves identify numerous categories of discharges including landscape irrigation, diverted stream flows, discharges from drinking water supplier sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, and street wash water as "non-storm water." While these types of discharges may be regulated under storm water permits, they are not considered storm water discharges. (40 CFR section 122.26(d)(2)(iv)(B)). USEPA states that, "in general, municipalities will not be held responsible for prohibiting some specific components of discharges or flows … through their municipal separate storm sewer system, *even though such components may be considered non-storm water discharges*…" (emphasis added). However, where certain categories of non-storm water discharges or specific non-storm water discharges are identified by the Permittee (or the Regional Water Board) as needing to be addressed, the~~sey~~ discharges are no longer exempt and become subject to the effective prohibition requirement in CWA section 402(p)(3)(B)(ii). This review of the storm water regulations and USEPA's discussion of the definition of storm water in its preamble to these regulations strongly supports the interpretation that storm water includes only precipitation-related discharges. Therefore, non-precipitation related discharges are not storm water discharges and, therefore, are not subject to the MEP standard in CWA section

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402(p)(3)(B)(iii). Rather, non-storm water discharges shall be effectively prohibited pursuant to CWA section 402(p)(3)(B)(ii).

B. Regulatory Background

The CWA employs the strategy of prohibiting the discharge of any pollutant from a point source into waters of the United States unless the discharger of the pollutant(s) obtains an NPDES permit pursuant to CWA section 402. The 1987 amendment to the CWA included section 402(p) that specifically addresses NPDES permitting requirements ~~-~~for municipal discharges from MS4s. Section 402(p) prohibits the discharge of pollutants from specified MS4s to waters of the United States except as authorized by an NPDES permit and identifies the substantive standards for MS4 permits. MS4 permits (1) "shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers" and (2) "shall require ~~[i]~~ controls to reduce the discharge of pollutants to the MEP, including management practices, control techniques and system, design and engineering methods, and ~~[ii]~~ such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." (CWA § 402(p)(3)(B)(ii-iii).)

C. Storm Water Discharge Prohibitions

Part II.A.1 of this Order prohibits MS4 discharges in a manner causing or contributing to a condition of pollution, contamination or nuisance. **Part II.A.2** of this Order incorporates by reference any and all prohibitions in the Central Valley Water Board's basin plans that may apply to the MS4 Permittee.

As noted above, CWA section 402(p)(3)(B) requires MS4 permits to require, among other provisions, "such other provisions as the Administrator or the State determines appropriate for the control of … pollutants [in storm water]." CWC section 13377 requires that,

> "[n]ot withstanding any other provision of this division, the state board or the regional boards shall, as required or authorized by the [CWA], as amended, issue waste discharge requirements and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the act and acts amendatory thereof or supplementary, thereto, together with any more stringent effluent standards or limitation necessary to implement water quality control plans, or for the protection of beneficial uses, or to prevent nuisance."

Including storm water prohibitions in this Order that incorporate (i) applicable basin plan prohibitions, and (ii) a prohibition on creating a condition of pollution, contamination or nuisance, appropriately implement applicable basin plans and are necessary for the protection of beneficial uses. Accordingly, the Central Valley Water Board has determined that these prohibitions are an appropriate method of controlling pollutants in municipal storm water pursuant to CWA section 402(p)(3)(B).

D. Non-Storm Water Discharge Prohibitions

Consistent with federal law, **Part II.B** of this Order contains a prohibition on non-storm water discharges to the MS4, where such discharges are not conditionally authorized. On November 16, 1990, USEPA published regulations to implement the 1987 amendments to the CWA. (55 Fed. Reg. 47990 (Nov. 16, 1990)). The regulations

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establish minimum requirements for MS4 permits. The regulations address both storm water and non-storm water discharges from MS4s; however, the minimum requirements for each are significantly different. This is evident from USEPA's preamble to the storm water regulations, which states that "Section 402(p)(B)(3) [of the CWA] requires that permits for discharges from municipal separate storm sewers require the municipality to "effectively prohibit" non-storm water discharges from the municipal storm sewer. Ultimately, such non-storm water discharges through a MS4 must either be removed from the system or become subject to an NPDES permit." (55 Fed Reg. 47990, 47995 (Nov. 16, 1990). USEPA states that MS4 Permittees are to begin to fulfill the "effective prohibition of non-storm water discharges" requirement by: (1) conducting a screening analysis of the MS4 to provide information to develop priorities for a program to detect and remove illicit discharges, (2) implementing a program to detect and remove illicit discharges, or ensure they are covered by a separate NPDES permit, and (3) to control improper disposal into the storm sewer. (40 CFR § 122.26(d)(2)(iv)(B).) These non-storm water discharges therefore are not subject to the MEP standard.

"Illicit discharges" defined in the regulations is the most closely applicable definition of "non-storm water" contained in federal law and the terms are often used interchangeably. In fact, "illicit discharge" is defined by USEPA in its 1990 rulemaking, as "any discharge through a municipal separate storm sewer that is not composed entirely of storm water and that is not covered by an NPDES permit [other than the permit for the discharge from the MS4]." (55 Fed. Reg. 47990, 47995).

Non-storm water discharges from the MS4 that are not authorized by separate NPDES permits, nor specifically exempted, are subject to requirements under the NPDES program, including discharge prohibitions, technology-based effluent limitations and water quality-based effluent limitations (40 CFR section 122.44). USEPA's preamble to the storm water regulations also supports the interpretation that regulation of non-storm water discharges through an MS4 is not limited to the MEP standard in CWA section 402(p)(3)(B)(iii):

> "*Today's rule defines the term "illicit discharge" to describe any discharge through a municipal separate storm sewer system that is not composed entirely of storm water and that is not covered by an NPDES permit. Such illicit discharges are not authorized under the Clean Water Act. Section 402(p(3)(B) requires that permits for discharges from municipal separate storm sewers require the municipality to "effectively prohibit" non-storm water discharges from the municipal separate storm sewer…Ultimately, such non-storm water discharges through a municipal separate storm sewer must either be removed from the system or become subject to an NPDES permit.*" (55 FR 47990, 47995.)

In its 1990 rulemaking, USEPA explained that the illicit discharge detection and elimination program requirement was intended to begin to implement the CWA's provision requiring permits to "effectively prohibit non-storm water discharges." (55 FR 47990, 47995).

V. RATIONALE FOR RECEIVING WATER LIMITATIONS

The Clean Water Act generally requires NPDES permits to include technology-based effluent limitations and any more stringent limitations necessary to meet water quality

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standards. Additionally, under the Porter-Cologne Act, waste discharge requirements must implement applicable water quality control plans, which include water quality standards developed by the State and Regional Water Boards.[63] In the special context of NPDES permits for MS4s, however, the Clean Water Act does not explicitly reference the requirement to meet technology-based limits or water quality standards. MS4 discharges must effectively prohibit non-storm water discharges and reduce pollutants in the discharge to the Maximum Extent Practicable (MEP) in all cases, but requiring strict compliance with water quality standards (e.g., by imposing numeric effluent limitations) is at the discretion of the permitting agency. Specifically the Clean Water Act states as follows:

> "Permits for discharges from municipal storm sewers –
>
> . . .
>
> (ii) shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers; and
>
> (iii) shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as . . . the State determines appropriate for the control of such pollutants.[64]"

Thus, a permitting agency imposes requirements related to attainment of water quality standards where it determines that those provisions are "appropriate for the control of [relevant] pollutants" pursuant to the Clean Water Act municipal storm water provisions.[65]

The State Water Board has previously exercised this discretion under federal law in favor of requiring compliance with water quality standards, but has required less than strict or immediate compliance. In precedential orders, the State Water Board has directed that MS4 permits require discharges to be controlled so as not to cause or contribute to exceedances of water quality standards in receiving waters,[66] but has prescribed an iterative process whereby an exceedance of a water quality standard triggers a process of BMP improvements.[67] However, mere engagement in the iterative process does not provide a Permittee with a "safe harbor" from enforcement of receiving water limitations. Rather, as discussed further below, avoiding a violation of this Order's receiving water limitations requires the Permittee to develop and meet concrete and measurable interim milestones toward final compliance with water quality standards, including meeting all deadlines for achievement of such interim milestones.

The State and Regional Water Boards' authority under federal law to require compliance with water quality standards in MS4 permits has been judicially upheld on several occasions. The receiving water limitations provisions of the 2001 Los Angeles MS4 Order

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[63] CWC section 13263. The term "water quality standards" encompasses the beneficial uses of the water body and the water quality objectives (or "water quality criteria" under federal terminology) that must be met in the waters of the United States to protect beneficial uses. Water quality standards also include the federal and state anti-degradation policies.
[64] 33 USC section 1342(p)(3)(B).
[65] See *Defenders of Wildlife v. Browner*, 191 F.3d 1159, 1166 (9th Cir. 1999).
[66] State Water Board Orders WQ 98-01 (Environmental Health Coalition), WQ 99-05 (Environmental Health Coalition), WQ 2001-15 (Building Industry Association of San Diego).
[67] State Water Board Order WQ 99-05, pp. 2-3; see also State Water Board Order WQ 2001-15, pp. 7-9.

specifically have been litigated twice, and in both cases, the courts upheld the provisions and the Los Angeles Water Board's interpretation of the provisions. In a decision resolving a challenge to the 2001 Los Angeles MS4 Order, the Los Angeles County Superior Court stated: "[T]he Regional [Water] Board acted within its authority when it included [water quality standards compliance] in the Permit without a 'safe harbor,' whether or not compliance therewith requires efforts that exceed the 'MEP' standard."[68] The lack of a safe harbor in the iterative process of the 2001 Los Angeles MS4 Order was again acknowledged in 2011 and 2013, this time by the United States Court of Appeal for the Ninth Circuit. In these instances, the Ninth Circuit was considering a citizen suit brought by the Natural Resources Defense Council against the County of Los Angeles and the Los Angeles County Flood Control District for alleged violations of the receiving water limitations of that order. The Ninth Circuit held that, as the receiving water limitations of the 2001 Los Angeles MS4 Order (and accordingly as the precedential language in State Water Board Order WQ 99-05) was drafted, engagement in the iterative process does not excuse liability for violations of water quality standards.[69] The California Court of Appeal has come to the same conclusion in interpreting similar receiving water limitations provisions in MS4 Orders issued by the San Diego Regional Water Quality Control Board in 2001 and the Santa Ana Regional Water Quality Control Board in 2002.[70]

Consistent with the foregoing precedent, receiving water limitations are included in this Order to ensure that individual and collective discharges from the MS4 do not cause or contribute to exceedances of water quality standards, including in instances where the Permittee is already complying with the MEP standard. The receiving water limitations in this Order provide that discharges from a Permittee's MS4 may not cause or contribute to exceedances of applicable water quality standards in ~~any~~ receiving waters. Such water quality standards consist of (1) beneficial uses, water quality objectives, and plans for their implementation in the applicable Basin Plan; (2) water quality control plans or policies adopted by the State Water Resources Control Board; and (3) federal regulations, including but not limited to, 40 CFR sections 131.12 and 131.38.

This Order offers what the State Water Board has termed an "alternative approach to compliance" with receiving water limitations. Permittees may comply with receiving water limitations "through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the storm water management program and its components and other requirements of this Order including any modifications." A Permittee's storm water management program establishes water quality requirements and BMPs; interim milestones toward compliance with receiving water limitations, including dates for their achievement; and final compliance deadlines for meeting receiving water limitations.

[68] *In re Los Angeles County Municipal Storm Water Permit Litigation* (L.A. Super. Ct., No. BS 080548, Mar. 24, 2005) Statement of Decision from Phase I Trial on Petitions for Writ of Mandate, pp. 4-5, 7. The decision was affirmed on appeal (*County of Los Angeles v. State Water Resources Control Board* (2006) 143 Cal.App.4th 985); however, this particular issue was not discussed in the court of appeal's decision.
[69] Natural Resources Defense Council v. County of Los Angeles (9th Cir. 2011) 673 F.3d. 880, rev'd on other grounds sub nom. Los Angeles County Flood Control Dist. v. Natural Resources Defense Council (2013) 133 S.Ct. 710, mod. by Natural Resources Defense Council v. County of Los Angeles (9th Cir. 2013) 725 F.3d 1194, cert. den. Los Angeles County Flood Control Dist. v. Natural Resources Defense Council (2014) 134 S.Ct. 2135.
[70] Building Industry Assn. of San Diego County v. State Water Resources Control Bd. (2004) 124 Cal.App.4th 866; City of Rancho Cucamonga v. Regional Water Quality Control Bd. (2006) 135 Cal.App.4th 1377.

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Milestones and deadlines must be clear, concrete and finite, based on measurable criteria or indicators, in order to provide the rigor and accountability necessary to justify the alternative approach to compliance with receiving water limitations through the iterative process. A Permittee that complies with all BMPs and interim and final deadlines in a ~~board~~Board-approved storm water management ~~program~~ plan (SWMP) is deemed in compliance with the receiving water limitations of this Order, notwithstanding continued exceedances of ~~receiving~~ water ~~limitations~~ quality standards in receiving waters that may persist prior to the ~~Permittee's~~ final date of attainment provided in the Permittee's SWMP.~~compliance.~~

This Order's alternative approach to compliance with receiving water limitations also contains an adaptive management procedure specifying a process by which Permittees must refine their storm water management plans based on updated information. When timely implementation of BMPs in a Permittee's storm water management plan does not achieve interim water quality milestones as expected, this Order imposes procedures designed to re-evaluate the program and modify it in a manner that ultimately will result in timely compliance with water quality standards. For the sake of clarity, this Order's specific procedures for adaptive management should be distinguished from the general concept of an "iterative process," which historically has been used to refer to an open-ended process of continually improving BMPs through trial and error.

In accordance with the judicial precedent discussed above, mere engagement in an iterative process of BMP improvements does not provide a safe harbor from enforcement of this Order's receiving water limitations. This Order's adaptive management process places specific and concrete requirements on Permittees that, if not complied with, open Permittees up to immediate enforcement for failure to meet applicable water quality standards in receiving waters. The State Water Board has stated that direct enforcement of water quality standards is necessary to protect water quality, at a minimum as a backstop where dischargers fail to meet requirements of the Order that are designed to ensure progress toward meeting the standards.

This Order includes requirements to implement WLAs assigned to MS4 discharges in TMDLs. Those TMDLs adopted through the State's basin planning process include programs of implementation pursuant to CWC section 13242, including implementation schedules for attaining water quality standards. The TMDL provisions and attachments include compliance schedules for TMDLs adopted by the Central Valley Water Board consistent with the TMDL implementation schedule to achieve the final receiving water limitations. The Central Valley Water Board recognizes that, in the case of impaired waters subject to a TMDL, the permit's receiving water limitations for the pollutants addressed by the TMDL may be exceeded during the period of TMDL implementation. Therefore, this Order provides that a Permittee's full compliance with the applicable TMDL requirements pursuant to the compliance schedules in this Order constitutes a Permittee's compliance with the receiving water limitations provisions of this Order for the particular pollutant addressed by the TMDL.

This Order requires the Permittee to develop a Storm Water Management Program that will ensure timely progress toward a condition in which the Permittee's discharges are no longer causing or contributing to exceedances of water quality standards in receiving waters. Once the Permittee has identified prioritized water quality constituents (PWQCs), the Permittee must prepare and submit a Reasonable Assurance Analysis (RAA) demonstrating that the water quality control measures the Permittee has selected are reasonably certain to achieve

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anticipated pollutant reductions. The objective of the RAA is to demonstrate the ability of the water quality controls selected for a Permittee's Storm Water Management Program to ensure that the Permittee's MS4 discharges will achieve applicable water quality based effluent limitations and do not cause or contribute to exceedances and/or excursions of water quality standards.

The Permittee may address multiple PWQCs in a single RAA, but each PWQC must be addressed by at least one RAA.

This Order's requirements with respect to the RAA are informed by the State Water Board's recent order concerning the Los Angeles Regional Water Board's MS4 Permit (State Water Board Order No. WQ 2015-0075). In order to provide analytical rigor and accountability within the alternative compliance pathway, the RAA must be, at a minimum, a quantitative evaluation that relies on (1) best management practices performance data, and (2) reasonable assumptions that are clearly stated. The RAA must be supported, at least in part, by models that are in the public domain or by comparable methodologies with wide acceptance, such as trend analyses. Models to be considered for the RAA include, but are not limited to: land/watershed model (e.g., Hydrologic Simulation Program-FORTRAN (HSPF) model), BMP performance models (e.g., Storm Water Management Model (SWMM) BMP model), or integrated BMP model (e.g., USEPA System for Urban Stormwater Treatment and Analysis Integrational (SUSTAIN) model). To the extent that multiple Permittees propose to address the same PWQC(s) with the same/substantially similar strategies and activities, those Permittees may pool their resources to jointly conduct and rely on an RAA. In addition, the RAA may evaluate multiple constituents and ultimately identify the limiting pollutant that drives the implementation strategies and activities.

The RAA commences with assembly of the available, relevant data collected, including land use and pollutant loading data, establishment of quality assurance/quality control (QA/QC) criteria, QA/QC checks of the data, and identification of the data set meeting the criteria for use in the analysis. These data shall be statistically analyzed to determine the best estimate of performance and the confidence limits on that estimate for the pollutants to be evaluated. Based on estimated baseline conditions and pollutant loadings, required pollutant reductions are estimated and best management practices and an implementation schedule will be generated. The RAA shall be submitted with the SWMP in accordance with **Part V.F.2** of the Order.

A Permittee's full compliance with all requirements and dates for their achievement in an approved Storm Water Management Program constitutes compliance with the storm water discharge prohibitions in **Part II.A** and the receiving water limitations of **Part IV** of this Order for the specific water body-pollutant combinations addressed by an approved SWMP. However, if a Permittee fails to meet any interim or final requirement or date for its achievement beginning with notification of a Permittee's intent to develop a Storm Water Management Program, and continuing with implementation of an approved Storm Water Management Program, the Permittee is subject to strict enforcement of receiving water limitations for the water body-pollutant combination(s) that were to be addressed by the requirement.

VI. RATIONALE FOR EFFLUENT LIMITATIONS

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A. Technology-Based Effluent Limitations (TBELs)

Section 301(b)(1)(A) of the CWA and 40 CFR section 122.44(a) require that NPDES permits include technology based effluent limitations.[71] In 1987, the CWA was amended to require that municipal storm water discharges "reduce the discharge of pollutants to the maximum extent practicable." (CWA § 402(p)(3)(B)(iii).) The "maximum extent practicable" standard is the applicable federal technology based standard that MS4 owners and operators must attain to comply with their NPDES permits. [72] The corresponding regulatory provisions that further detail the MEP standard can be found in 40 CFR sections 122.26(d)(2)(iv) and 122.44(k)(2).

Neither Congress nor the USEPA has specifically defined the term "maximum extent practicable." Rather, the MEP standard is a flexible and evolving standard. Congress established this flexible MEP standard so that administrative bodies would have "the tools to meet the fundamental goals of the CWA in the context of storm water pollution."[73] This standard was designed to allow permit writers flexibility to tailor permits to the site-specific nature of MS4s and to use a combination of pollution controls that may be different in different permits.[74] The MEP standard is also expected to evolve in light of programmatic improvements, new source control initiatives, and technological advances that serve to improve the overall effectiveness of storm water management programs in reducing pollutant loading to receiving waters. This is consistent with USEPA's interpretation of storm water management programs. As explained by USEPA in its 1990 rulemaking, "EPA anticipates that storm water management programs will evolve and mature over time" (55 FR 47990, 48052 (Nov. 16, 1990)). There is ample evidence of this evolution in storm water management.

This Order includes programmatic requirements in six areas pursuant to 40 CFR section 122.26(d)(2)(iv) as well as numeric design standards for storm water runoff from new development and redevelopment consistent with the federal MEP standard (see State Water Board Order WQ 2000-11). This Order also includes protocols for periodically evaluating and modifying or adding control measures, consistent with the concept that MEP is an evolving and flexible standard.

B. Water Quality Based Effluent Limitations (WQBELs) and Compliance Schedules

In addition to requiring that MS4 permits include technology based requirements consistent with the MEP standard, section 402(p)(3)(B)(iii) of the CWA authorizes the inclusion of "such other provisions as the Administrator or the State determines appropriate for the control of [] pollutants." This requirement gives ~~USEPA or the~~

[71] A technology based effluent limitation is based on the capability of a model treatment method to reduce a pollutant to a certain concentration (NPDES Permit Writer's Manual, Appendix A). Technology based requirements represent the minimum level of control that must be imposed in a permit issued under CWA section 402.

[72] Note that the MEP standard only applies to storm water discharges from the MS4. Non-storm water discharges are subject to a different standard – specifically, non-storm water discharges into the MS4 must be effectively prohibited. 33 U.S.C. section 1342(p)(B)(ii)

[73] Building Industry Ass'n of San Diego County v. State Water Resources Control Board (2004) 124 Cal.App.4th 866, 884.

[74] In re City of Irving, Texas, Municipal Storm Sewer System, (July 16, 2001), 10 E.A.D. 111 (EPA), *6.

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~~State~~the permitting authority discretion to determine what permit conditions are necessary to control pollutants. Generally, permit requirements designed to achieve water quality standards are referred to as water quality based effluent limitations (WQBELs). A WQBEL is a restriction on the quantity or concentration of a pollutant that may be discharged from a point source into a receiving water that is necessary to achieve an applicable water quality standard in the receiving water.[75] WQBELs may be expressed narratively or numerically.

In its Phase I Stormwater Regulations, Final Rule, USEPA elaborated on these requirements, stating that, "permits for discharges from MS4s must require controls to reduce the discharge of pollutants to the MEP, and where necessary water quality-based controls" (see 55 FR.47990, 47994 (Nov. 16, 1990). In December 1999, USEPA reiterated in its Phase II Stormwater Regulations, Final Rule that MS4 "permit conditions must provide for attainment of applicable water quality standards (including designated uses), allocations of pollutant loads established by a TMDL, and timing requirements for implementation of a TMDL." [76] The State Water Board has affirmed that MS4 permits must include requirements necessary to achieve compliance with the applicable technology based standard of MEP and to achieve water quality standards.[77]

WQBELs are required for point source discharges that have the reasonable potential to cause or contribute to an excursion of water quality standards and technology based effluent limitations or standards are not sufficient to achieve water quality standards.[78]

The State Water Board has previously concluded that sole reliance in MS4 permits on BMP based requirements is not sufficient to ensure attainment of water quality standards.[79] The Central Valley Water Board concurs with this conclusion, which is amply supported by Central Valley Water Board established TMDLs for impaired waters in the Central Valley region, indicating that MS4 discharges are a continuing source of pollutants to the impaired receiving waters notwithstanding the implementation of storm water management programs that have been driven by the MEP standard by Permittees for the last two decades.

In this Order, WQBELs are included where the Central Valley Water Board has determined that discharges from the MS4 have the reasonable potential to cause or contribute to an excursion above water quality standards.[80] Reasonable potential can be demonstrated in several ways, one of which is through the TMDL development process. Where a point source is assigned a WLA in a TMDL, the analysis conducted in the development of the TMDL may provide~~s~~ the basis for the ~~Regional~~ Central Valley Water Board's determination that the discharge has the reasonable potential to cause or

[75] See 40 CFR section 122.2; NPDES Permit Writer's Manual, Appendix A. A WQBEL is distinguished from a technology based effluent limitation in that the basis for the WQBEL is the applicable water quality standard for the receiving water, while the basis for a technology based effluent limitation is generally the performance of the best available technology.
[76] *See, e.g.,* Phase II Stormwater Regulations, Final Rule, 64 FR 68722, 68737.
[77] See, e.g., State Water Board Orders WQ 99-05, 2001-15, and 2015-75.
[78] 40 CFR sections 122.44(d)(1)(i); 122.44(d)(1)(iii)
[79] *See* State Water Board Order WQ 2015-0075, p. 14.

[80] 40 CFR sections 122.44(d)(1)(i)-(iii); 122.44(d)(1)(vii)(B)

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contribute to an exceedance of water quality standards in the receiving water. This approach is affirmed in USEPA's Permit Writer's Manual, which states, "[w]here there is a pollutant with a WLA from a TMDL, a permit writer must develop WQBELs." Therefore, WQBELs are included in this Order for all pollutants for which a WLA is assigned to MS4 discharges.[81] The 2014 U.S. EPA Memo, while not binding authority, states "[w]here the TMDL includes WLAs for stormwater sources that provide numeric pollutant loads, the WLA should, where feasible, be translated into effective, measurable WQBELs that will achieve this objective. This could take the form of a numeric limit, or of a measurable, objective BMP-based limit that is projected to achieve the WLA." The 2014 U.S. EPA Memo further acknowledges that the permitting authority should consider the schedules in the TMDL as it decides whether and how to establish enforceable interim requirement and interim dates into the permit.

Federal regulations further require that, "when developing water quality-based effluent limits…the permitting authority shall ensure that effluent limits … are consistent with the assumptions and requirements of any available waste load allocation for the discharge…" (40 CFR § 122.44(d)(1)(vii)(B)).

The Central Valley Water Board interprets this to mean that the WQBEL must be expressed ~~in similar terms as~~consistent with the underlying WLA. Additionally, WQBELs must be designed such that a Permittee's compliance with the WQBELs should result in attainment of the WLA by the final compliance date. In **Attachment G** of this Order, the Central Valley Water Board has devised permit requirements that meet these mandates: for each TMDL, the requirements in **Attachment G** have been specifically designed to attain compliance with applicable WLAs by the final compliance deadline. Where the applicable TMDL implementation plan includes a final compliance date beyond the permit term, monitoring and other requirements are being included in this Order to monitor progress towards achieving future compliance.

According to the Basin Plans, the Central Valley Water Board will, as necessary, include schedules of compliance in NPDES permits for compliance with water quality-based effluent limits based on the waste load allocations. The compliance schedules must be consistent with the requirements of federal laws and regulations, including, USEPA regulations 40 CFR 122.47, State laws and regulations.

1. Supplemental Information Regarding Specific TMDLs

Stockton Urban Water Bodies Pathogen TMDL

The Permittees submitted the City of Stockton San Joaquin County Pathogen Plan (Pathogen Plan) to the Central Valley Water Board in August 2004. The Permittees submitted an updated Pathogen Plan in April 2009 as part of the 2009 SWMP, and in June 2012 as part of the 2012 Report of Waste Discharge. The goal of the Pathogen

[81] *See* U.S. EPA, "Revision to the November 22, 2002, Memorandum 'Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those WLAs'" (November 26, 2014) (hereinafter "2014 U.S. EPA Memo.")

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Plan is to protect water quality by identifying, monitoring, and mitigating the controllable sources of bacteria to the MEP. The Pathogen Plan meets the requirements for a pathogen pollution prevention plan under the previously adopted NPDES area-wide MS4 permit, Order No. R5-2002-0181 (NPDES No. CAS083470), and the requirements of the Water Code Section 13267 Order issued on 14 November 2007. In addition, the Central Valley Water Board specified that TMDL implementation would occur through the Permittee's MS4 Permit and the existing Pathogen Plan when the Board approved the TMDL for Pathogens in Stockton Urban Water Bodies in 2008. Monitoring and implementation activities under the Pathogen Plan, including any amendments or updates made in accordance with the requirements of Order No. R5-2015-0024, and as prescribed in the associated Storm Water Management Plan and Annual Reports, is ongoing and shall continue.

Lower San Joaquin River, Stockton Deep Water Ship Channel (SDWSC) TMDL (Organic Enrichment, Low Dissolved Oxygen)

The San Joaquin River (SJR) Dissolved Oxygen Control Program defines oxygen demanding substances and their precursors as any substance or substances that consume, have the potential to consume, or contribute to the growth or formation of substances that consume or have the potential to consume oxygen from the water column.

The Basin Plan Amendment establishing this TMDL set the initial waste load allocations for NPDES-permitted discharges of oxygen demanding substances and their precursors as the effluent limitations that were applicable on 28 January 2005. Waste load allocations and permit conditions for new or expanded point source discharges in the SJR Basin upstream of the SDWSC, including NPDES and stormwater, are based on the discharger demonstrating that the discharge will have no reasonable potential to cause or contribute to a negative impact on the dissolved oxygen impairment in the SDWSC.

On 28 January 2005, the 2002 Phase I MS4 permit for the Stockton Urbanized Area (Section 33) stated the following for effluent limits: "... the effluent limitations in this Order are narrative, and include the requirement to reduce pollutants in storm water discharges to the MEP. In lieu of numeric effluent limitations, this Order requires the implementation of BMPs identified in the Permittees' SWMP to control and abate the discharge of pollutants in storm water discharges. Implementation of BMPs and compliance with performance standards in accordance with the Permittees' SWMP and its schedules constitutes compliance with the MEP standard" This permit applies these limitations to discharges from the Stockton Urbanized Area MS4 maintained by the City of Stockton and County of San Joaquin upon Central Valley Water Board issuance of NOAs.

On 28 January 2005, the 2004 Phase I MS4 permit for the Port of Stockton (Section 30) stated the following for effluent limitations: "...the effluent limitations in this Order are narrative, and include the requirement to reduce pollutants in storm sewer discharges to the MEP. This Order requires the implementation of BMPs and performance standards identified in the Port's SWMP to control and abate the discharge of pollutants in storm water discharges. Implementation of BMPs and compliance with performance standards in accordance with the Port's SWMP and its schedules constitutes compliance with the MEP standard." This permit applies these limitations to discharges from the Port of Stockton upon Central Valley Water Board issuance of an NOA.

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On 28 January 2005, the 2003 Phase II MS4 permit stated the following for effluent limitations in section A. Application Requirements C.1. Effluent Limitations: “Permittees must implement BMPs that reduce pollutants in storm water to the technology-based standard of MEP.” This permit applies these limitations to discharges from Phase II MS4s maintained by the municipalities identified in the column to the left to which the Central Valley Water Board has issued NOAs.

For both Phase I and Phase II Permittees: In measuring compliance with permit requirements related to attainment of these waste load allocations, credit will be given for control measures implemented after 12 July 2004.

The Stockton Urbanized Area MS4 Permittees submitted to the Central Valley Water Board the Low Dissolved Oxygen Plan pursuant to the previously adopted NPDES area-wide MS4 permit, Order No. R5-2002-0181 (NPDES No. CAS083470), on 1 April 2004; a revised Dissolved Oxygen Plan on 1 October 2004 and 15 April 2009; and the Low Dissolved Oxygen Plan Final Report pursuant to Order No. R5-2007-0173 on 29 January 2013. The goal of the Low Dissolved Oxygen Plan is to protect water quality by identifying, monitoring, and mitigating the controllable sources of oxygen demanding substances and their precursors to the MEP. The Dissolved Oxygen Plan meets the requirements of Order No. R5-2002-0181 and the requirements of the Water Code Section 13267 Order issued on 14 November 2007, which were designed to implement the requirements of the San Joaquin River Dissolved Oxygen Control Program. Monitoring and implementation activities under this Plan, including any amendments or updates made in accordance with the requirements of Order No. R5-2015-0024 and the 2007 Section 13267 Order, and as prescribed in the associated Storm Water Management Plan and Reports, are ongoing and shall continue.

Previously adopted NPDES permits required the Port of Stockton MS4 to incorporate a Low Dissolved Oxygen Program in its SWMP and implement the Program if the Port’s urban discharges were causing or contributing to an exceedance of water quality standards and/or the TMDL allocation for dissolved oxygen. The Port of Stockton implemented the Low Dissolved Oxygen Program throughout its prior permit term (2011-2015). As described in the Port of Stockton Municipal Storm Water Program Report of Waste Discharge and Annual Report submitted to the Central Valley Water Board on 5 August 2015, data collected in accordance with the Low Dissolved Oxygen Program indicate that the low dissolved oxygen impairment in the SDWSC is unaffected by the Port’s urban discharges because levels of oxygen demanding substances in the Port’s urban runoff are negligible to non-existent. In addition, the Port of Stockton continues to monitor dissolved oxygen in the SDWSC, provide operations and maintenance services for multiple aeration devices in the SDWSC, and participate in the aerator operations and maintenance agreement that is maintained among the stakeholders of the San Joaquin River Dissolved Oxygen Control Program. The Port of Stockton conducts these activities to mitigate the impacts on dissolved oxygen in the SDWSC caused by increased channel geometry resulting from dredging. Based on these factors, this Order does not require the Port of Stockton to continue to implement the Low Dissolved Oxygen Program as part of the Port’s SWMP, except for those elements consistent with the provisions described earlier in this section.

2. Compliance Schedules for Achieving TMDL Requirements

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A Regional Water Board may include a compliance schedule in an NPDES permit when the state's water quality standards or regulations include a provision that authorizes such schedules in NPDES permits.[82] In California, TMDL implementation plans[83] are typically adopted through Basin Plan Amendments. The TMDL implementation plan, which is part of the Basin Plan Amendment, becomes a regulation upon approval by the State of California Office of Administrative Law (OAL).[84] Pursuant to California Water Code sections 13240 and 13242, TMDL implementation plans adopted by the ~~Regional~~ Central Valley Water Board "shall include … a time schedule for the actions to be taken [for achieving water quality objectives]," which allows for compliance schedules in future permits. This Basin Plan Amendment becomes the applicable regulation that authorizes an MS4 permit to include a compliance schedule to achieve ~~effluent limitations~~WQBELs derived from ~~wasteload allocation~~WLAs.

Where a TMDL implementation schedule has been established through a Basin Plan Amendment, it~~, it~~ is incorporated into this Order as a compliance schedule to achieve interim and final WQBELs and corresponding receiving water limitations, in accordance with 40 CFR section 122.47. WQBELs that implement TMDLs must be consistent with the assumptions and requirements of any applicable WLA, which includes applicable implementation schedules.[85] Further, California Water Code sections 13263 and 13377 state that waste discharge requirements must implement the Basin Plan.[86] Therefore, compliance schedules for attaining WQBELs derived from WLAs must be based on a state-adopted TMDL implementation plan~~ and cannot exceed the maximum time that the implementation plan allows~~.

Only one TMDL addressed by this Order has a final compliance date beyond the term of this Order: the Delta TMDL for addressing methylmercury impairments. In determining the compliance schedule associated with this TMDL, the Central Valley Water Board considered numerous factors to ensure that the schedule would be as short as possible. Factors examined include, but are not limited to, the size and complexity of the watershed; the pollutants being addressed; the number of responsible agencies involved; time for Permittees to negotiate agreements; development of water quality management plans; identification of funding sources; determination of an implementation

[82] *See In re Star-Kist Caribe, Inc.*, 3 E.A.D. 172, 175 (Apr. 16, 1990), modification denied, 4 E.A.D. 33, 34 (EAB 1992).

[83] TMDL implementation plans consist of those measures, along with a schedule for their implementation, that the Water Boards determine are necessary to correct an impairment. The NPDES implementation measures are thus required by sections 303(d) and 402(p)(3)(B)(iii) of the CWA. State law also requires the Water Boards to implement basin plan requirements. (See Wat. Code §§ 13263, 13377; *State Water Resources Control Board Cases* (2006) 136 Cal.App.4th 189.)

[84] See Gov. Code, § 11353, subd. (b). Every amendment to a Basin Plan, such as a TMDL and its implementation plan, requires approval by the State Water Board and OAL. When the TMDL and implementation plan is approved by OAL, it becomes a state regulation.

[85] *See* 40 C.F.R. § 122.44(d)(1)(vii)(B).

[86] Cal. Wat. Code, § 13263, subd. (a) ("requirements shall implement any relevant water quality control plans that have been adopted"); *id.* § 13377 ("the state board or the regional boards shall ... issue waste discharge requirements and dredged or fill material permits which apply and ensure compliance with all applicable provisions of the [CWA], thereto, together with any more stringent effluent standards or limitations necessary to implement waste quality control plans, or for the protection of beneficial uses, or to prevent nuisance"); *see also, State Water Resources Control Board Cases* (2006) 136 Cal.App.4th 189.

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strategy based on the recommendations of water quality management plans and/or special studies; and time for the implementation strategies to yield measurable results. Compliance schedules may be altered based on the monitoring and reporting results as set forth in the individual TMDLs. In many ways, the incorporation of interim and final WQBELs and associated compliance schedules is consistent with the adaptive management process of implementing BMPs that has been employed in the previous Central Valley Water Board MS4 Permits in that progress toward compliance with the final effluent limitations may occur over the course of many years. However, because the water bodies in the Central Valley are impaired due to MS4 discharges, it is necessary to establish more specific provisions in order to: (i) ensure measurable reductions in pollutant discharges from the MS4, resulting in progressive water quality improvements during the iterative process, and (ii) establish a final date for completing implementation of BMPs and, ultimately, attaining WLAs and water quality standards. The compliance schedule in this Order associated with the Delta methylmercury TMDL is consistent with the implementation plan established in that individual TMDL.

3. TMDLs with Past Final Compliance Deadlines

In accordance with federal regulations, this Order includes WQBELs necessary to achieve applicable waste load allocations assigned to MS4 discharges. The WLAs addressed by this Order all are expressed such that it is possible to verify an individual permittee's attainment with the WLA. In some cases, the deadline specified in the TMDL implementation plan for achieving the final waste load allocation has passed. This Order requires that Permittees meet applicable WLAs and/or receiving water limitations for which final compliance deadlines have passed.

Where a Permittee determines that, upon adoption of this Order, its MS4 discharge may not meet the WLA for which the final compliance date has already passed, the Permittee may request a time schedule order (TSO) from the Central Valley Water Board. TSOs are issued pursuant to California Water Code section 13300, whenever a Water Board "finds that a discharge of waste is taking place or threatening to take place that violates or will violate [Regional Water Board] requirements."

For each Permittee, this Order is the first MS4 permit to implement the TMDLs addressed by **Attachment G** as WQBELs. Because final compliance deadlines for some of these TMDLs have passed, and the WQBELs in **Attachment G** require the Permittees subject to them to meet WLAs by the final compliance deadline, the WQBELs implementing those TMDLs result in numeric limitations that are more stringent than the requirements in Permittees' previous MS4 permits. The water quality objectives that those WQBELs are designed to implement therefore meet the definition of "newly interpreted water quality objectives" under the State Water Board's Policy for Implementation of Compliance Schedules in National Pollutant Discharge Elimination System Permits, State Water Board Resolution No. 2008-0025 (the "Compliance Schedule Policy"). Accordingly, the Central Valley Water Board has legal authority to adopt a compliance schedule for a Permittee that satisfies the application requirements listed in Paragraph 4 of the Compliance Schedule Policy, which are reproduced in **Part III.B.3**. This Order allows a Permittee requesting additional time to come into compliance with WQBELs that implement a "newly interpreted water quality objective" to include a proposed compliance schedule in its SWMP, including a justification satisfying the

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criteria listed in **Part III.B.3**. Central Valley Water Board approval of a SWMP operates as approval and adoption of any compliance schedules contained therein.[87]

VII. RATIONALE FOR PROVISIONS

A. Implementation of Water Quality Focused Framework in Storm Water Management Programs

Part V includes the requirements for the Storm Water Management Programs to be implemented by each of the Permittees. Compliance with the requirements for the Storm Water Management Programs will allow the Permittees to demonstrate that they are implementing programs to effectively prohibit non-storm water discharges to the MS4 and reduce pollutants in storm water discharges from the MS4 to the MEP. The Storm Water Management Plan prepared by each Permittee will also provide the details for implementing the water quality improvement strategies identified in the Storm Water Management Plan specifically within its Jurisdictional Runoff Area.

This Order includes requirements to incorporate a water quality focused framework in the Permittee's Storm Water Management Program as described in its SWMP. The **overall** process for the water quality focused framework is illustrated in **Attachment A** (*Water Quality Focused Framework for Order R5-2016-XXXX*). The process consists of six overarching steps: assessment, prioritization, development, implementation, effectiveness assessment and reporting, and adaptive management and modification. The Permittee shall address all steps in this process. The Permittee may start at any step in the process so long as the proceeding step(s) have been completed consistent with this Order. A Permittee that complies pursuant to the Performance-Based approach shall address all steps in this process. A Permittee that complies pursuant to the Prescriptive-Based approach shall address all steps in this process except prioritization. Each Permittee must comply with the monitoring requirements defined under the Performance-Based approach described in **Attachment J** or the Prescriptive-Based approach described in **Attachment K**.

Implementation of the Storm Water Management Program requirements under **Part V** is how the Permittee will implement *controls to reduce the discharge of pollutants to the MEP"* consistent with the federal regulations under 40 CFR 122.26. As required pursuant to 40 CFR 122.26(d)(2)(iv), components of the Storm Water Management Program include the "*comprehensive planning process" applied across the Jurisdictional Runoff Area* and "*intergovernmental coordination*" between the Permittee and other MS4 permit holders necessary to achieve the goals of each Permittee's Storm Water Management Plan.

The Storm Water Management Program requirements are included to provide each Permittee criteria that can be used to demonstrate that its Storm Water Management Program is implementing the "*comprehensive planning process*" within its Jurisdictional Runoff Area to "*effectively prohibit non-stormwater discharges into the storm sewers*",

[87] A Permittee may still request a compliance schedule separately from the SWMP process if it so chooses.

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and to identify and implement the most effective "*controls to reduce the discharge of pollutants to the MEP"* in accordance with the performance standards given in the CWA.

The purpose for each step is described hereon and in **Part V** of this Order. The criteria, methodology and results must be described in the Permittee's SWMP.

1. Assessment

The first step in the water quality focused framework is described under **Part V.E.1** which outlines a process to evaluate receiving water and MS4 discharge monitoring data in order to develop a list of water quality constituents (WQCs) The Permittee must perform an assessment of receiving water conditions and MS4 discharges to develop a list of WQCs that may be adversely impacting water quality. The Permittee must rely on data sources such as the Total Maximum Daily Loads, the CWA section 303(d) List, and the results of chemical, physical, and biological monitoring performed by the Permittee and compiled by other entities.

***2.* Prioritization**

Part V.E.2 describes the process for the second step in the water quality focused framework. Under the prioritization step, the Permittee must rank the WQCs compiled in the assessment to develop a prioritized list of water quality constituents. Ranking the water quality constituents will result in a prioritized list that will be based on an evaluation of whether or not the Permittee's MS4 is a contributing source to PWQCs. The evaluation of the MS4 contribution must consider potential point and nonpoint sources, such as illegal connections and illicit discharges other NPDES permitted discharges, and land uses. Under the Prescriptive-Based compliance approach, all water quality constituents shall be treated as PWQCs.

3. Reasonable Assurance Analysis

Each water body-pollutant combination identified as a PWQC must be analyzed in a RAA as described in **Part V.E.3**.

The analysis must address each PWQC in a water body-pollutant paired combination and include best management performance data. The Storm Water Management Program must include a RAA that includes a quantitative evaluation of each PWQC as a water body-pollutant paired combination. The analysis may be performed using a model in the public domain. Models to be considered for the RAA include, but are not limited to, land/watershed model (e.g., Hydrologic Simulation Program-FORTRAN (HSPF) model), BMP performance models (e.g., Storm Water Management Model (SWMM) BMP model), or integrated BMP model (e.g., USEPA System for Urban Stormwater Treatment and Analysis Integrational (SUSTAIN) model). Models used for the RAA are expected to possess the following capabilities.

The RAA shall commence with assembly of all available, relevant data, including land use and pollutant loading data, establishment of QA/QC criteria, QA/QC checks of the data, and identification of the data set meeting the criteria for use in the analysis. These data shall be statistically analyzed to determine the best estimate of performance and the confidence limits on that estimate for the pollutants to be evaluated. Based on estimated baseline conditions and pollutant loadings, required

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pollutant reductions are estimated and best management practices and an implementation schedule will be generated.

The **RAA** shall be submitted with the Permittee's SWMP.

4. Development

The third step in the water quality focused framework is described under **Part V.E.4** which outlines a process to identify water quality improvement and effectiveness assessment approaches, and develop Monitoring Study Design and Implementation Schedule and programmatic elements for the Permittee's Storm Water Management Program. The Storm Water Management Program will be described in the Permittee's Storm Water Management Plan.

The Permittee must identify effective ~~water quality improvement~~ milestones, strategies, and activities to address PWQCs by effectively prohibiting non-storm water discharges into the MS4 and reducing pollutants in storm water discharges to the MEP, in addition to an effective assessment approach. This step also contains specific local water quality monitoring and program element development and implementation requirements with which the Permittee must comply with. Programmatic elements will be developed based on the development and implementation of a Monitoring Study Design and Implementation Schedule, as this permit centers on a water quality focused framework.

a. **Water Quality Improvement and Effectiveness Assessment Approaches**

The Permittee must develop water quality improvement and effectiveness assessment approaches to implement its Storm Water Management Program over the course of the permit. The Permittee must first identify ~~programmatic and/or water quality focused short-and long-term, programmatic,~~non-water quality and water quality ~~-~~milestones that support program implementation and measure progress towards addressing identified PWQCs. The milestones must be based on measureable criteria or indicators capable of demonstrating incremental progress. Second, the Permittee must identify the approach for monitoring and each program element to address PWQCs and identify metrics for monitoring and each program element to measure the program effectiveness and verify that the program is meeting the established milestones. Finally, the Permittee must develop an effectiveness assessment approach to assess the efficacy of the Storm Water Management Program's water milestones, strategies, and activities.

b. **Monitoring Requirements**

Attachments J and K describe the monitoring requirements necessary to address the PWQCs as the first requirement to identify water quality milestones, strategies, and activities for the Permittee's Storm Water Management Program. **Attachments J and K** establish monitoring and recordkeeping requirements that implement the federal and state laws and/or regulations. Section 308(a) of the CWA, and sections 122.41(h), (j)-(l), 122.44(i), and 122.48 of Title 40 of the Code of Federal Regulations requires that all NPDES permits specify monitoring and reporting requirements. Federal regulations applicable to large and medium

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MS4s also specify additional monitoring and reporting requirements. (40 C.F.R. §§ 122.26(d)(2)(i)(F) & (d)(2)(iii)(D), 122.42(c).) California Water Code section 13383 further authorizes the Central Valley Water Board to establish monitoring, inspection, entry, reporting, and recordkeeping requirements. The following provides the rationale for the monitoring requirements contained in this Order.

This Order requires each Permittee to develop and implement a Monitoring Study Design and Implementation Schedule for conducting local water quality monitoring. Local water quality monitoring includes chemical, biological and physical subcomponents, and is based on the assessment and prioritization of monitoring data by the Permittee. The Monitoring Study Design and Implementation Schedule must comply with the monitoring requirements provided in **Attachment G** (*Specific Provisions for Total Maximum Daily Loads Applicable to Order R5-2016-XXXX*) and **Attachment H** (*Standard Permit Provisions and General Provisions*). The Monitoring Study Design and Implementation Schedule must include goals, an approach, parameters, types and methods, sampling frequency, locations, and quality assurance/quality control.

The Monitoring Study Design and Implementation Schedule must identify incremental ~~programmatic~~ non-water quality and water quality milestones, strategies, and activities that can be used to measure and demonstrate progress or improvements toward addressing those priorities. Water quality milestones, strategies, and approaches developed by the Permittee must be clear and include dates for their achievement consistent with other compliance dates described in this Order (e.g., TMDL compliance dates, reporting due dates). Water quality based milestones and dates must be developed and implemented for monitoring and program elements and comprehensively consider this Order's water quality focused framework.

Each Permittee must develop an Implementation Schedule that integrates the milestones, dates for their achievement, compliance strategies, and activities described in their SWMP. As part of the monitoring study design and implementation schedule, the Permittee must identify enforceable requirements, milestones and dates for their achievement to control MS4 discharges such that they do not cause or contribute to exceedances of receiving water limitations within a timeframe(s) that is as short as possible, taking into account the technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary. Milestones and dates must relate to a specific water quality endpoint (e.g., a percentage reduction in sediment toxicity or MS4 drainage area is meeting the receiving water limitations, load reduction targets, or ~~meeting~~ assigned waste load allocations).

For the Performance-Based approach outlined in **Attachment J**, the Monitoring Study Design and Implementation Schedule must describe the following:

i. Monitoring Approach

ii. Monitoring Parameters Types and Methods

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iii. Monitoring Locations

iv. Quality Assurance/Quality Control

The Monitoring Study Design and Implementation Schedule submittal shall include a Quality Assurance Project Plan (QAPP) in accordance with the QA/QC and other protocols (e.g., Standard Operating Procedures for bioassessment) established by the Surface Water Ambient Monitoring Program (SWAMP). All samples shall be collected and analyzed in accordance with the methods specified in 40 CFR Part 136.

v. Local Water Quality Monitoring

For the Performance-Based approach, depending on the status of the current MS4 monitoring program (how long the monitoring program has been in place, what assessments have already been conducted, and the available data), the monitoring program described in the SWMP may include one or more of the following:

(1) Receiving water monitoring
(2) Source characterization
(3) Urban discharge monitoring
(4) Special studies
(5) TMDL monitoring

For the Prescriptive-Based approach outlined in **Attachment K**, the Monitoring Study Design and Implementation Schedule must describe the following:

i. Monitoring Frequency and Locations

Monitoring must be conducted throughout each water year during qualifying rain events, including targeting seasonal first flush events and coordinated, when necessary, with downstream receiving water monitoring to evaluate the influence of urban runoff discharges. A qualifying rain or wet weather event has 0.25 inches of accumulated rainfall over the past 24-hours and is sufficient to produce an urban runoff discharge event. In some regions and drainages, more rainfall may be necessary to cause urban runoff discharges (e.g. from LID or extended detention basins). Monitoring is conducted for pollutants of concern including all pollutants with assigned WQBELs. Parameters to be monitored during dry and wet weather include: flow, pollutants subject to a TMDL applicable to the receiving water, pollutants listed on the CWA section 303(d) list for the receiving water or a downstream receiving water and may include **Tables 1 and 2** (**Attachment E**, *Monitoring Tables for Attachment K*). Flow is necessary to calculate pollutant loading. Sampling requirements, including methods for collecting flow-weighted composite samples, are consistent with those requirements in previous MS4 permits issued by the Central Valley Water Board.

ii. Monitoring Parameters and Types, and Methods

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In addition to PWQCs identified by the Permittee, water quality parameters to be monitored in receiving water and MS4 discharges are listed in **Table 2** (**Attachment E**, *Monitoring Tables for Attachment K*). Hardness, pH and temperature are parameters impacting the effect of pollutants in freshwater (i.e., metals water quality standards are dependent on hardness, ammonia toxicity is dependent on pH and temperature). Temperature and dissolved oxygen are interdependent and fundamental to supporting aquatic life beneficial uses. Specific conductivity is a parameter important to assessing potential threats to MUN and freshwater aquatic life beneficial uses.

The Monitoring Study Design and Implementation Schedule submittal shall include a Quality Assurance Project Plan (QAPP) in accordance with the QA/QC and other protocols (e.g., Standard Operating Procedures for bioassessment) established by the Surface Water Ambient Monitoring Program (SWAMP). All samples shall be collected and analyzed in accordance with the methods specified in 40 CFR Part 136.

The monitoring data is to be accompanied by rainfall data and hydrographs, and a narrative description of the storm event. This information will allow the Permittee and the Central Valley Water Board staff to evaluate the effects of differing storm events in terms of storm water runoff volume and duration and in-stream effects.

iii. Dry Weather Screening Monitoring

Clean Water Act section 402(p) regulates discharges from MS4s. Clean Water Act section 402(p)(3)(B)(ii) requires the Permittees to effectively prohibit non-storm water from entering the MS4. Non-exempted, non-storm water discharges are to be effectively prohibited from entering the MS4 or become subject to another NPDES permit (55 FR 47990, 47995 (Nov.16, 1990)). Conveyances which continue to accept non-exempt, non-storm water discharges do not meet the definition of MS4 and are not subject to CWA section 402(p)(3)(B) unless the discharges are issued separate NPDES permits. Instead, conveyances that continue to accept non-exempt, non-storm water discharges that do not have a separate NPDES permit are subject to sections 301 and 402 of the CWA (55 FR 47990, 48037 (Nov. 16, 1990)).

iv. MS4 Discharge Monitoring

The purpose of the MS4 discharge monitoring is to characterize the storm water discharges from each Permittee's drainages within each subwatershed. Outfall based monitoring is also conducted to assess compliance with WQBELs. In previous permits issued by the Central Valley Water Board, Permittees have proposed and received approval for customized monitoring programs. The selected outfall(s) should receive drainage from an area representative of the land uses within the portion of its Jurisdictional Runoff Area that drains to the subwatershed, and not be unduly influenced by storm water discharges from upstream jurisdictions or other NPDES discharges. It is assumed that storm water runoff quality will be similar for similar land use areas, and therefore runoff from a representative area will provide sufficient

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characterization of the entire drainage area. Factors that may impact storm water runoff quality include the land use (industrial, residential, commercial) and the control measures that are applied. Factors that may impact storm water runoff volume include percent effective impervious cover (connected to the storm drain system), vegetation type, soil compaction and soil permeability. Storm water outfall monitoring is linked to receiving water monitoring (see above).

v. Receiving Water Monitoring

The purposes of receiving water monitoring are to measure the effects of storm water and non-storm water discharges from the MS4 to the receiving water, to identify water quality exceedances, to evaluate compliance with TMDL WLAs and receiving water limitations, and to evaluate whether water quality is improving, staying the same or declining. Receiving water is to be monitored during both dry and wet weather conditions to assess the impact of non-storm water and storm water discharges. Wet weather and dry weather are defined in each watershed, consistent with the definitions in TMDLs approved within the watershed. Monitoring is to commence as soon as possible after linked outfall monitoring in order to be reflective of potential impacts from MS4 discharges. At a minimum, the parameters to be monitored and the monitoring frequency are the same as those required for the linked outfalls.

vi. Bioassessment

The purpose of the bioassessment requirement is to assess the biological integrity of receiving waters, detect biological responses to pollution, identify probable causes of impairment not detected by chemical and physical water quality analysis, and provide a more holistic approach to evaluating processes of the waterways for designing effective BMPs. Bioassessment data will be used to continue assessment of biological integrity of receiving water, establishing Index of Biological Integrity (IBI) reference stations, and assisting the statewide SWAMP's long term goal of utilizing bioassessment to develop biocriteria for a variety of eco-regions and land-use dominated areas in California. Bioassessment sampling and measurement protocols must be collected consistent with SWAMP protocols described in this Order. Bioassessment sampling must occur at least once during the permit term.

5. CWA section 303(d) Listed Impairments and TMDL (Water Quality Based Plans)

a. **Attachment G** (*Specific Provisions for Total Maximum Daily Loads Applicable to Order R5-2016-XXXX*) provides requirements to be included in the Monitoring Study Design and Implementation Schedule.~~.~~

b. ***Sediment and Water Column Toxicity Monitoring***. Toxicity testing and evaluation protocols for sediment and water column toxicity (e.g., aquatic toxicity) monitoring and collection of samples are provided in **Table 1** of this Order

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(**Attachment E**, *Monitoring Tables)*.[88] Aquatic toxicity monitoring is required in receiving waters during wet weather conditions. Aquatic toxicity testing measures test species toxicity and integrates synergistic effects of known and unidentified pollutants. When samples are found to be toxic a Toxic Identification Evaluation shall be performed in an attempt to identify the pollutants causing toxicity, if they are not yet known. Where the causes of aquatic toxicity are known, less frequent status monitoring of the most sensitive species is sufficient to characterize conditions.

c. ***Quality Assurance/*Quality *Control*** All sampling and analysis methods must meet QA/QC and other protocols established by SWAMP. Collected monitoring data shall be uploaded for each water year (July 1 to June 30) to the California Environmental Data Exchange Network (CEDEN), or the Storm Water Multi-Application Reporting and Tracking System (SMARTS) database when available. All samples should be collected and analyzed in accordance with the methods specified in 40 CFR Part 136.

6. Regional Monitoring Program

This Order also provides for a regional monitoring program participation option to address all or part of the local water quality monitoring requirements of this Order. The process for the regional monitoring program participation option is outlined in **Attachments J and K**. The Permittee may participate in a regional monitoring program (RMP) in lieu of all or part of the local water quality monitoring requirements of this Order in a cost efficient and effective manner. Permittees that elect to participate in a RMP may request a reduction in some or all of the local water quality monitoring specified in the monitoring requirements of this Order. Currently there is a RMP for the Delta area[89]. Participation in a RMP by a Permittee shall consist of providing funds and/or in-kind services to the RMP at least equivalent to discontinued individual monitoring and study efforts.

B. Development of Storm Water Management Plan

Attachments J and K include the Performance- or Prescriptive-Based requirements for describing each of the components that must be included in the Permittee's Storm Water Management Program. **Attachment J** provides requirements for a Performance-Based approach, while **Attachment K** includes Prescriptive-Based requirements. Implementation of the components of each Permittee's Storm Water Management Program must be consistent with the water quality milestones, strategies, and activities identified in the Permittee's Storm Water Management Plan. The rationale for each program element described under **Attachment J or K** are described hereon.

1. Legal Authority Establish and Enforcement

[88] Summary of Toxicity in California Waters: 2001-2009, J. Hunt, D. Markiewiez, and M. Pranger, State Water Resources Control Board, prepared for the Surface Water Ambient Monitoring Program, November 2010.

[89] The Delta RMP is an identified priority in the State Water Resources Control Board's and Central Valley Water Board's Delta Strategic Plan, and the Delta RMP is recommended in the Delta Plan adopted by the Delta Stewardship Council.

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Each Permittee is required to establish and enforce sufficient legal authority to control discharges to the MS4 within its Jurisdictional Runoff Area as described under **Attachments J and K** of this Order. The Order provides minimum criteria that each Permittee must include to update their legal authority forming a stable foundation for each jurisdiction to exercise its authority implementing their Storm Water Management Programs, including the development and implementation of Enforcement Response policies and procedures.

Pursuant to 40 CFR 122.26(d)(1)(ii) and40 CFR 122.26(d)(2)(i), each Permittee must have sufficient "*legal authority to control discharges to the municipal separate storm sewer system*" and be able to demonstrate that it can "*operate pursuant to legal authority established by statute, ordinance or series of contracts.*" **Attachments J and K** describe the minimum legal authorities each Permittee must establish for itself within its Jurisdictional Runoff Area to control discharges to its MS4 The requirements contained in **Attachments J and K** are consistent with the requirements set forth in 40 CFR 122.26(d)(2)(i)(A)-(F) and 122.34, as applicable.

Pursuant to 40 CFR 122.26(d)(1)(ii) and40 CFR 122.26(d)(2)(i), each Permittee must have sufficient "*legal authority to control discharges to the municipal separate storm sewer system*" and be able to demonstrate that it can "*operate pursuant to legal authority established by statute, ordinance or series of contracts*" to control the discharge of non-storm water and pollutants in storm water to and from its MS4. Pursuant to 40 CFR 122.26(d)(2)(i)(E) each Phase I MS4s Permittees are specifically required to have the legal authority to "*[r]equire compliance with conditions in ordinances, permits, contracts or order*s." Phase II MS4s are required to effectively prohibit no-storm water discharges through ordinance, or other regulatory mechanism, to the extent allowed under the law (40 CFR 122.34(B)(3)(ii)(B); 40 CFR 122.34(b)(4)(ii)(A); 40 CFR 122.34(b)(5)(ii)(B)). The requirements in **Attachments J and K** are necessary to demonstrate that each Permittee can enforce its legal authority to *"effectively prohibit non-stormwater discharges"* and "*reduce the discharge of pollutants to the MEP*" as well as "*[r]equire compliance with conditions in ordinances, permits, contracts or order*."

Enforcement Response procedures required under **Attachments J and K** will serve as a reference for the Permittee and the Central Valley Water Board to determine if consistent enforcement actions are being implemented to achieve timely and effective compliance from all public and private entities that are not in compliance with the Permittee's ordinances, permits, or other requirements. The Enforcement Response procedures must include approaches and options, violation corrections, escalated enforcement definition, and reporting non-compliant sites. The Enforcement Response procedures must contain clear direction for each Permittee to take immediate enforcement action, when appropriate and necessary, in their illicit discharge detection and elimination, development planning, construction management, and industrial, commercial, and municipal operation programs. Proper implementation of the Enforcement Response procedures is necessary to effectively prohibit non-storm water discharges to the MS4, and reduce the discharge of pollutants in storm water from the MS4 to the MEP. A description of the Enforcement Response procedures must be submitted with the Permittee's SWMP.

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If the entities subject to a Permittee's legal authority do not implement appropriate corrective actions in a timely manner, or if violations repeat, the Permittee must take progressively stricter responses to enforce its legal authority and achieve compliance with its ordinances, permits, or other requirements to *"effectively prohibit non-stormwater discharges"* and "*reduce the discharge of pollutants to the MEP.*"

2. Fiscal Analysis

The Permittee is required to secure the resources necessary to meet the permit requirements of this Order, including identifying the expenditures necessary to achieve the milestones, strategies, and activities of its Storm Water Management Program. In accordance with 40 CFR 122.42(c)(5), Annual Reports must include annual expenditures and a budget for the following year (July 1 through June 30). The Central Valley Water Board has chosen to only require fiscal analyses as part of the Permittee's Mid-Term and End-Term Reports that include quantitative and qualitative components. The fiscal analysis requirements should address jurisdiction-wide fiscal benefits of protection including, public health, tourism, property values, economic activity, and beneficial uses to assist the Permittee improve the allocation of resources and secure adequate funding for the program. The Central Valley Water Board encourages the Permittee to consider means for conducting assessments of fiscal benefits derived from the programs. Such assessments could be conducted on a regional scale similar to studies of program costs conducted by the State Water Board.[90]

Each Permittee is required to secure the resources and provide an analysis of the resources that will be necessary to implement the requirements of the Order, as described in **Attachments J and K**. Adequate fiscal resources are necessary for a Storm Water Management Program to effectively prohibit non-storm water discharges to the MS4, and reduce pollutants in storm water from the MS4 to the MEP.

According to 40 CFR 122.26(d)(2)(vi), each Permittee is responsible for providing "*a* fiscal *analysis of the necessary capital and operation and maintenance expenditures necessary to accomplish the activities*" required by this Order, including "*a description of the source of funds that are proposed to meet the necessary expenditures, including legal restrictions on the use of such funds.*" The fiscal analysis requirements of **Attachments J and K** are consistent with 40 CFR 122.26(d)(2)(vi).

3. Illegal Connection and Illicit Discharge Elimination Program

Under **Attachment J or K**, each Permittee is required to implement an illicit discharge detection and elimination program. Such programs facilitate compliance with the CWA's effective prohibition of non-storm water discharges into the MS4 by actively detecting and eliminating illicit discharges into, and connections to, their MS4s. **Attachment J or K** establishes the minimum requirements that each Permittee must implement within its Jurisdictional Runoff Area to prevent and eliminate illicit discharges, and effectively prohibit non-storm water discharges, from

[90]State Water Board, 2005.NPDES Stormwater Cost Survey.

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entering its MS4. Under this program element, the Permittee is required to develop and implement Spill Response procedures. For efficiency and cost-effectiveness, a description of the procedures will be submitted with the Permittee's SWMP.

The federal CWA requires permits for municipal storm sewer systems to "*effectively prohibit non-storm water discharges into the storm sewers*." Under 40 CFR 122.26(d)(2)(iv)(B)[91], each Permittee must implement a "*program…to detect and remove…illicit discharges and improper disposal into the storm sewer.*" The federal NPDES regulations, under 40 CFR 122.26(b)(2), define illicit discharges as "*any discharge to a municipal separate storm sewer that is not composed entirely of storm water."* Thus, non-storm water discharges are not authorized to enter the MS4 and are considered to be illicit discharges, unless authorized by a separate NPDES permit.

The Phase I Final Rule clarifies that non-storm water discharges through an MS4 are not authorized under the CWA (55 FR 47995):

> "*Today's rule defines the term "illicit discharge" to describe any discharge through a municipal separate storm sewer system that is not composed entirely of storm water and that is not covered by an NPDES permit. Such illicit discharges are not authorized under the Clean Water Act. Section 402(p(3)(B) requires that permits for discharges from municipal separate storm sewers require the municipality to "effectively prohibit" non-storm water discharges from the municipal separate storm sewer…Ultimately, such non-storm water discharges through a municipal separate storm sewer must either be removed from the system or become subject to an NPDES permit*."

The federal NPDES requirements for the program to address illicit discharges must include "*inspections, to implement and enforce an ordinance, orders, or other similar means to prevent illicit discharges to the MS4*." The federal NPDES regulations also reference several categories of "*non-storm water discharges or flows* [which] *shall be addressed where such discharges are identified…as sources of pollutants to waters of the United States*." The Phase I Final Rule (55 FR 48037) further clarified the requirements of 40 CFR 122.26(d)(2)(iv)(B)(1) as follows:

> "*EPA is clarifying that section 402(p)(3)(B) of the CWA (which requires permits for municipal separate storm sewers to 'effectively' prohibit non-storm water discharges) does not require permits for municipalities to prohibit certain discharges or flows of non-storm water to waters of the United States through municipal separate storm sewers in all cases*."

In previous iterations of the municipal storm water permits for the Central Valley Region, these categories were simply listed and referred to as categories of non-storm water discharges "not prohibited" unless identified as a source of pollutants. The Permittee have often referred to these categories as "exempt" discharges. In

[91] See 40 CFR 122.34(b)(3) for Phase II MS4 Illicit Discharge Detection and Elimination Program

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both cases, however, that language is inconsistent with the federal CWA and NPDES regulations. The clarification provided in the Phase I Final Rule does not specifically state that such discharges are "not prohibited" or "exempt" or in any way authorized. The federal NPDES regulations do, however, state that specific categories of non-storm water discharges must be "*addressed*" if identified as "*sources of pollutants to waters of the United States*."

The language of **Part II** is consistent with the language of the CWA and the requirements of the federal regulations under 40 CFR 122.26(d)(2)(iv)(B)(1). **Part II** requires each Permittee to address all types of non-storm water discharges into its MS4 as illicit discharges, unless the discharge is authorized by a separate NPDES permit, or identified as a category of non-storm water discharges or flows that must be addressed pursuant to **Part II**. Only non-NPDES-permitted non-storm water discharges identified as a category of non-storm water discharges under **Part II** and *not identified as a source of pollutants* do not have to be addressed as illicit discharges.

Non-storm water categories listed in 40 CFR 122.26(d)(2)(iv)(B)(1) and 40 CFR 122.34(b)(3)(iii)[92] are listed under **Part II** and generally fall into four categories: (1) non-storm water discharges subject to existing State Water Board or Central Valley Water Board waste discharge requirements and NPDES permits; (2) non-storm water discharges generally not expected to be a source of pollutants to receiving waters; (3) non-storm water discharges likely to contain pollutants requiring some form of control to address the pollutants prior to discharging to the MS4; and (4) non-storm water discharges or flows associated with firefighting.

Part II includes several categories of non-storm water discharges listed in 40 CFR 122.26(d)(2)(iv)(B)(1) for which the Central Valley Water Board or State Water Board has developed general waste discharge requirements and NPDES permits to address the discharges. The Permittee are only required to address these types of non-storm water discharges as illicit discharges if the Permittee or the Central Valley Water Board identifies these non-storm water discharges not having coverage under the applicable NPDES permit or as a source of pollutants to receiving waters. Generally, if these types of non-storm water discharges have coverage under an NPDES permit and are identified as a source of pollutants to receiving waters, the Permittee would be expected to identify the responsible dischargers and report their identities to the Central Valley Water Board. The Central Valley Water Board would then have the responsibility to enforce the NPDES permit and/or waste discharge requirements.

Part II includes several categories of non-storm water discharges listed in 40 CFR 122.26(d)(2)(iv)(B)(1) which are generally not expected to be a source of pollutants to receiving waters, many of which originate from what are typically natural, uncontrollable sources. The Permittee are only required to address these types of non-storm water discharges as illicit discharges if the Permittee or the Central Valley Water Board identifies these non-storm water discharges as a source of pollutants to receiving waters. Because many of these sources are generally uncontrollable,

[92] 40 CFR 122.34(b)(3)(iii) does not list essential non-emergency or emergency firefighting activities as a category of non-storm water discharges or flows under **Provision II.B** (*Discharge Prohibitions*).

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enforcing a prohibition may not be a possibility for the Permittee. The Permittee would be able to address these non-storm water discharges by preventing these non-storm water discharges from entering the MS4. This could potentially be achieved by sealing their MS4 structures so the discharges cannot enter the MS4.

Part II includes several categories of non-storm water discharges listed in 40 CFR 122.26(d)(2)(iv)(B)(1) that are likely to contain pollutants requiring some form of control to address the pollutants prior to discharging to the MS4. At this time, an outright prohibition of these types of non-storm water discharges does not yet appear to be warranted. Thus, **Part II** includes several requirements for the Permittee to control the pollutants from these types of non-storm water discharges. This is consistent with the clarification of the federal regulations in the Phase I Final Rule (55 FR 48037), which states the Central Valley Water Board has the authority to require the Permittee to "*control any of these types of discharges where appropriate*."

Unlike non-storm water discharges from over-irrigation, these types of non-storm water discharges are not expected to occur in close proximity to each other or very frequently. Provided these types of non-storm water discharges are controlled as required in **Part II**, the Permittee would only be required to address these types of non-storm water discharges as illicit discharges if the Permittee or the Central Valley Water Board identifies these non-storm water discharges as a source of pollutants to receiving waters.

Part II includes specific requirements for firefighting discharges and flows. The requirements for non-storm water discharges and flows associated with firefighting have been separated into requirements for: a) non-emergency firefighting discharges and flows, and b) emergency firefighting discharges and flows.

Discharges from building fire suppression system maintenance (e.g. fire sprinklers) may contain waste and may potentially be a significant source of pollutants to receiving waters. As such, the Central Valley Water Board is requiring these discharges be addressed as illicit discharges by the Permittee. Thus, the discharges to the MS4 are to be prohibited via ordinance, order or similar means. For other non-emergency firefighting discharges and flows (i.e., flows from controlled or practice blazes, firefighting training, and maintenance activities not associated with building fire suppression systems), the Permittee ~~are~~ is required to develop and implement a program to address pollutants in these non-storm water discharges and flows. This is consistent with the clarification of the federal regulations in the Phase I Final Rule (55 FR 48037), which states the Central Valley Water Board has the authority to require the Permittee to "*control any of these types of discharges where appropriate*."

For emergency firefighting discharges and flows, the Phase I Final Rule (55 FR 48037) has clarified the requirements of 40 CFR 122.26(d)(2)(iv)(B)(1) pertaining to emergency firefighting flows and discharges, which states:

> "*In the case of firefighting it is not the intention of these rules to prohibit in any circumstances the protection of life and public or private property through the use of water or other fire retardants that flow into separate storm sewers*."

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Thus, the requirements have been made to be consistent with the guidance provided by the Phase I Final Rule. The Order recommends that the Permittee develop and encourage implementation of BMPs to reduce or eliminate the discharge of pollutants from emergency firefighting flows to the MS4s and receiving waters.

The Permittee are expected to review the dry weather MS4 outfall discharge monitoring data they collect to determine if and when there are non-storm water discharges to or from their MS4s that are a source of pollutants to receiving waters. If the Permittee identifies one of the types of non-storm water discharges listed in **Part II** as a source of pollutants to receiving waters based on the review and evaluation of monitoring data, **Part II** requires the Permittee to prohibit those categories of discharges from entering the MS4 through ordinance, order or similar means.

Part II also clarifies that the Central Valley Water Board may identify categories of non-storm water discharges or flows listed under **Part II** that must be prohibited. This is consistent with the clarification of 40 CFR 122.26(d)(2)(iv)(B)(1) in the Phase I Final Rule(55 FR 48037), which states the Central Valley Water Board may "*require municipalities to prohibit or otherwise control any of these types of discharges where appropriate*."

Finally, **Part II** has been included in the requirements for non-storm water discharges to clarify that any non-storm water discharges to the Permittee's MS4 even those identified pursuant to **Part II** must be reduced or eliminated. USEPA's NURP study showed that many storm water outfalls continued to discharge during substantial dry periods and that pollutant levels during significantly elevated, degrading water quality. **Part II.B** is consistent with the requirements of CWA section 402(p)(3)(B)(ii) and 40 CFR 122.26(d)(1)(v)(B), as clarified in the Phase I Final Rule (55 FR 47995) that "*[u]ltimately, such non-storm water discharges through a municipal separate storm sewer must either be removed from the system or become subject to an NPDES permit*."

Outfall *Mapping and Illicit Discharge Source/Facility Inventory*
Consistent with 40 CFR 122.26(d)(2)(iv)(B) and 122.26(d)(2)(iv)(B)(1), each Permittee must implement a "*program…to prevent illicit discharges to the municipal storm sewer system*" and "*detect…illicit discharges and improper disposal into the storm sewer.*" **Attachment J or K** requires each Permittee to implement measures to prevent and detect illicit discharges and connections to its MS4 as part of its illicit discharge detection and elimination program.

As part of the program to prevent and detect illicit discharges to the MS4, 40 CFR 122.26(d)(2)(iv)(B)(2) requires "*procedures to conduct on-going field screening activities during the life of the permit, including areas or locations that will be evaluated by such field screens*." Under the Prescriptive-Based path, each Permittee is required to maintain an updated map and inventory of its entire MS4 and the corresponding drainage areas within its Jurisdictional Runoff Area. Having knowledge about where inlets, access points, connections with other MS4s, and outfalls are located is necessary for each Permittee to track, identify, and eliminate illicit discharges and connections as part of this process. Thus, **Attachment K** of the Order specifies that the map and inventory must include the segments of the storm sewer system owned, operated, and maintained by each Permittee, and include

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locations of all known inlets, connections with other MS4s, and outfalls to each Permittee's MS4. The remaining requirements of **Attachment K** are consistent with the requirements of 40 CFR 122.26(d)(2)(iv)(B)(3)-(7) related to implementing measures to prevent and detect illicit discharges and connections to the MS4.

Field* Sampling *for Illicit Discharges
Under the Prescriptive-Based path, **Attachment K** requires each Permittee to conduct field screening and monitoring of MS4 outfalls and other portions of its MS4 within its Jurisdictional Runoff Area to detect non-storm water and illicit discharges and connections to the MS4. Field screening is a required element of the program to detect and eliminate illicit discharges and connections to the MS4, pursuant to 40 CFR 122.26(d)(2)(iv)(B)(2).

Illicit* Discharge *Source Investigation and Elimination
Under the Prescriptive-Based path **Attachment K** specifies the measures each Permittee must implement to eliminate illicit discharges and connections to its MS4. Elimination of illicit discharges and connections to the MS4 is consistent with the requirement of 40 CFR 122.26(d)(2)(iv)(B) "*to detect and remove [emphasis added]…illicit discharges and improper disposal into the storm sewer*" and will achieve the CWA requirement for MS4 permits to "*effectively prohibit non-storm water discharges into the storm sewers*."

Generally, each Permittee is responsible for prioritizing its efforts to eliminate non-storm water and illicit discharges or connections to its MS4 based on field screening and monitoring data, illicit discharge investigation records, and the known or suspected sources. Sources of non-storm water and illicit discharges or connections must be eliminated by enforcing the legal authority established by each Permittee pursuant to **Attachment J or K.** Under this requirement, the Permittee is required to identify and investigate illegal connections, promote and facilitate public reporting of non-storm water discharges and spills, and develop and implement education and training with staff, contractors, and the public.

4. Construction Site Storm Water Runoff Control Program

Each Permittee is required to implement a construction management program to control and reduce the discharge of pollutants in storm water from construction sites to the MEP, as described under **Attachment J or K**. Proper implementation of the construction management program will contribute toward effectively prohibiting non-storm water discharges from construction sites to the MS4. Pursuant to 40 CFR 122.26(d)(2)(iv)[93], each Permittee is required to implement a "*management program…to reduce the discharge of pollutants to the MEP using management practices, control techniques and system, design and engineering methods, and other such provisions where applicable*." As part of the management program, 40 CFR 122.26(d)(2)(iv)(D) requires "*a program to implement and maintain structural and non-structural BMPs to reduce pollutants in storm water runoff from construction sites to the municipal storm sewer system.*"

[93] See 40 CFR 122.34(b)(4) for Phase II MS4 Construction Site Storm Water Runoff Control Program

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Construction sites can be significant sources of sediment, trash, and other pollutants to receiving waters. Although sediment is naturally occurring in the natural environment, the discharge of sediment under unnatural conditions is problematic to receiving waters. Fine sediment in creeks causes high turbidity that interferes with the functionality of native flora and fauna in local creeks. For example, turbidity interferes with both photosynthesis of water plants, as well as successful foraging and reproduction of benthic macroinvertebrates. Sediment can also make it difficult for fish to breathe because it clogs fish gills. Other pollutants such as heavy metals or pesticides can adhere to sediment and are transported to receiving waters during storm events, where they dissolve in the water column and can become bioavailable to aquatic organisms. Sediment is recognized as a major stressor to surface waters and is responsible for the impairment of several lagoons and creeks in the Central Valley region.

Under the Prescriptive-Based path, **Attachment K** includes requirements that each Permittee must implement to minimize the discharge of sediment and other pollutants from construction sites to the MS4 within its Jurisdictional Runoff Area. The requirements under **Attachment K** are consistent with the previous MS4 permits issued by the Central Valley Water Board and apply to private and public construction sites. Therefore, Permittee are expected to implement the requirements seamlessly, with minimal changes to their existing construction management programs. Under the Performance-Based path described under **Attachment K**, the Permittee is given more flexibility to run its Storm Water Management Program as needed to maximize efficiency, and also to be consistent with the Storm Water Management Plan within its Jurisdictional Runoff Area. The Construction Site Storm Water Runoff Control Program includes measures such as development, implementation, and enforcement of best management practice requirements at all construction sites; developing a construction site inventory and plan review and approval procedures; and site inspection and enforcement.

BMP Requirements for All Construction Sites

Pursuant to 40 CFR 122.26(d)(2)(iv)(D)(2) each Permittee is required describe "requirements *for nonstructural and structural BMPs*" at construction sites. Under the Prescriptive-Based approach, **Attachment K** includes the types of construction site BMPs that the Permittee must implement, or require the implementation of, at each construction site to reduce pollutants in storm water discharges to the MEP.

Each Permittee is expected to require the implementation of appropriate BMPs given specific site conditions, the season and likelihood of rain events, and construction phase (i.e. grading vs. vertical construction). This means that throughout the life of the project construction, the appropriate BMPs will vary, especially if the construction of the project spans multiple wet seasons. As opposed to describing specific minimum BMPs that must be implemented, the Order describes major BMP categories that should be considered for each site.

Each Permittee is expected to use its prior years of storm water experience and knowledge to require implementation of appropriate BMPs from the various categories at each construction site within its Jurisdictional Runoff Area. For example, the Central Valley Water Board expects that each site will be required to implement erosion control and sediment control at each construction site. The Central Valley Water Board also expects each Permittee to require implementation of

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active/passive sediment treatment systems at sites where other BMPs have been tried and are known to be inadequate, and discharges of sediment are causing or contributing to water quality impairment downstream. Each Permittee is granted flexibility in specifying the minimum level of BMP requirements at each site, but the Central Valley Water Board expects each site to be capable of controlling pollutants in storm water discharges to the MEP and preventing illicit discharges.

Construction Site Inventory

Under the Prescriptive-Based approach, the requirements contained in **Attachment K** provide the data and information necessary to identify "*priorities for inspecting sites and enforcing control measures*" required pursuant to 40 CFR 122.26(d)(2)(iv)(D)(3). Further, under this path, each Permittee must identify construction sites that are considered a high threat to downstream surface waters. Designation of "high threat to water quality" construction sites will necessitate the Permittee to develop criteria to identify such sites. **Attachment K** describes a list of factors that must be considered when the Permittee considers threat to water quality. For example, a Permittee must identify sites as "high threat to water quality" if the site is located within a hydrologic subarea where sediment is known or suspected to contribute to the water quality conditions, according to the Storm Water Management Plan. This ensures that construction management program implementation is compatible with the Permittee's identified water quality conditions.

Construction Plan Review and Approval Procedures

As part of the construction management program, 40 CFR 122.26(d)(2)(iv)(D)(1) requires "*procedures for site planning which incorporate consideration of potential water quality impacts.*" Under the Prescriptive-Based path, **Attachment K** describes the minimum elements each Permittee is required to include as part of the construction site planning and project approval process. The construction site planning and approval process is based primarily on ensuring each project had an adequate site-specific pollution control, construction BMP, and/or erosion and sediment control plan (ESCP) that will be implemented to minimize the discharge of pollutants in storm water to the MEP, and minimize impacts to receiving waters.

Construction Site Inspection and Enforcement

Under the Prescriptive-Based approach, the requirements under **Attachment K** are necessary to demonstrate that each Permittee is implementing a program to ensure BMPs at construction sites will reduce pollutants in storm water discharges to the MEP. Pursuant to 40 CFR 122.26(d)(1)(ii) and40 CFR 122.26(d)(2)(i), each Permittee must have sufficient "*legal authority to control discharges to the municipal separate storm sewer system.*" Where enforcement is necessary for any development projects to compel compliance and ensure the pollutants in storm water discharges from the MS4 are reduced and continue to be reduced to the MEP, each Permittee is required to enforce its legal authority established pursuant to **Part III.C.6.a or b**, and in accordance with its Enforcement Response Plan required to be developed pursuant under the same provision.

Under the Performance-Based path, **Attachment J** does not include minimum required inspection frequencies for construction sites, but inspection frequency is stated under the Prescriptive-Based path **(Attachment K)**. Each Permittee must use its experience and knowledge to specify an appropriate inspection frequency for both high priority and lower priority sites in their Storm Water Management Plans and in

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accordance with the Storm Water Management Program. Appropriate inspection frequencies may vary by Permittee, but the Central Valley Water Board expects that the stated frequency will be adequate for each Permittee to properly oversee the construction sites within its Jurisdictional Runoff Area, confirm BMPs are implemented to reduce pollutants in storm water discharges from constructions sites to the MEP, and make needed changes to its program on an ongoing basis as necessary.

5. Industrial, Commercial, and Municipal Facilities Storm Water Runoff Control Programs

Attachment J or K requires each Permittee to implement industrial, commercial, and municipal operation programs to control and reduce the discharge of pollutants in storm water discharges from industrial, commercial, and/or municipal areas to the MEP. Proper implementation of the industrial, commercial, and municipal operation programs will also contribute toward effectively prohibiting non-storm water discharges from industrial, commercial, and/or municipal areas to the MS4.

Pursuant to 40 CFR 122.26(d)(2)(iv)[94], each Permittee is required to implement a "*management program…to reduce the discharge of pollutants to the MEP using management practices, control techniques and system, design and engineering methods, and other such provisions where applicable*." Within 40 CFR 122.26(d)(2)(iv)(A) and (C), the management program is required to reduce impacts on receiving waters and reduce pollutants in storm water discharges to the MEP from commercial and industrial facilities, and municipal facilities.

Commercial, industrial facilities and municipal facilities must be addressed by each Permittee with the industrial, commercial, and municipal operation programs required under **Attachment J or K**. Areas being developed or under construction will be addressed by the Permittee under the other requirements described under **Attachment J or K**, such as Planning and Land Development/Post Construction Storm Water Management Program or Construction Site Storm Water Control Program.

Industrial, commercial, and/or municipal areas typically include impervious surfaces, such as sidewalks, driveways, roads, and rooftops, which generate and concentrate pollutants (such as pesticides, petroleum hydrocarbons, heavy metals, and pathogens) that are otherwise not found in high concentrations in the natural environment. Pollutants that accumulate on impervious surfaces are not easily biodegraded or not subject to natural treatment processes. When it rains, these pollutants ~~are~~ can be transported in storm water runoff from these impervious surfaces into receiving waters, resulting in poor water quality and degradation of beneficial uses.

In addition to the generation of pollutants, areas of industrial, commercial, and municipal operation have generally altered the natural conditions of the land and removed vegetative cover, reduced the perviousness of the surface, and reduced the

[94] See 40 CFR 122.34(b)(6) for Phase II MS4 Pollution Prevention/Good Housekeeping for Municipal Operations Program

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capacity of storm water that can be intercepted, captured, stored, infiltrated, evaporated, and/or evapotranspired. The alteration of the natural conditions and the impervious surfaces associated with areas of industrial, commercial, and municipal operations causes water quality problems due to the alteration of natural flow regimes within the watersheds, resulting in hydromodification of channels, streams and habitats that exist within or adjacent to areas of industrial, commercial, and municipal operations.

Thus, storm water discharges from areas of industrial, commercial, and municipal operation ~~are~~ can be responsible for poor water quality, degraded habitats, and hydromodified channels throughout the developed portions of the watersheds in the Central Valley region. To improve the health and functionality of the receiving waters in the region, land use practices and ~~the amount of~~storm water runoff from impervious surfaces in areas of industrial, commercial, and municipal operation must ~~change~~ be managed to reduce the various impacts caused by hydromodification and pollutants from storm water runoff generated in developed areas. Each Permittee must be aggressive in tackling pollutant sources and runoff from areas of industrial, commercial, and municipal operation to be able to reduce pollutants in storm water discharges from the MS4 to the MEP.

The requirements under **Attachment J or K** build upon existing industrial, commercial, and municipal operation programs being implemented by the Permittee. These requirements are generally consistent with the industrial, commercial, and municipal operation program requirements found in previous permits in the Central Valley region, but modified in **Attachment J** to provide more flexibility to implement the programs so resources can be better focused toward addressing the highest priority water quality conditions identified in the Permittee's SWMP. In general, the industrial/commercial, and municipal operations programs include measures to track, assess, prioritize, and inspect pollutant sources, implement best management practices, and develop enforcement capability. The Municipal Operations Storm Water Reduction Program includes an additional requirement for the Permittee to develop and implement Storm Water Pollution Prevention Plans at pollutant priority areas.

Track and Inspect Industrial, Commercial, and Municipal Facilities

Under the Prescriptive-Based path, **Attachment K** includes the information that must be included in the inventory and specifies what facilities or areas must be included. A commercial facility may be identified in the inventory as a facility (e.g. individual building, individual business) or an area (e.g. shopping center, commercial zone). An industrial facility must be identified in the inventory by facility (e.g. individual industrial entity). A municipal facility must be identified in the inventory by facility, with a list of specific municipal facilities that must be included in the inventory.

Knowledge of the sources of industrial, commercial, and municipal operations likely contributing to the highest priority water quality conditions is expected to be a key element in the Permittee development of the water quality improvement strategies that will be included in its Storm Water Management Plan. The strategies described in the Storm Water Management Plan will direct the industrial, commercial, and municipal operation programs implemented by the Permittee.

Implementation of Effective Best Management Practices

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Pursuant to 40 CFR 122.26(d)(2)(iv)(A) each Permittee is required describe "structural *and source control measures to reduce pollutants*" in storm water runoff discharged from areas of industrial, commercial, and municipal operations. Under the Prescriptive-Based path, **Attachment K** includes the BMP implementation and maintenance requirements that ~~the~~ each Permittee must require at industrial, commercial, or municipal areas of industrial, commercial, and municipal operations to reduce pollutants in storm water discharges to the MEP. The Central Valley Water Board, however, recognizes that BMP implementation and maintenance for residential areas will require much more education and encouragement through less authoritative measures than for commercial, industrial and municipal facilities and areas. Thus, the BMP implementation and maintenance requirements have been separated between requirements under **Attachment K** for commercial, industrial and municipal facilities and areas.

Most of the requirements in **Attachment J or K** are consistent with the related requirements in the previous permits issued by the Central Valley Water Board. Under the Performance-Based path, the level of specificity, however, has been changed to allow each Permittee the flexibility to implement its program to achieve maximum efficiency, and to perform functions that will address the highest priority water quality conditions identified in a Storm Water Management Plan. Each Permittee is expected to require the implementation of appropriate BMPs to address the expected pollutants from each industrial, commercial, or municipal facility or area. Consistent with previous permit requirements, each Permittee is required to maintain, or require the maintenance of, all BMPs as needed.

Permittees, as covered and required under State Water Board Order No. 2006-0003-DWQ, *Statewide General Waste Discharge Requirements for Sanitary Sewer System (*amended by State Water Board Order No. WQ 2008-0002-EXEC, on 20 February 2008*),* must report sanitary sewer overflows and spills to the State Water Board under the Sanitary Sewer Overflow Reduction Program and California Integrated Water Quality System, commonly referred to as CIWQS. If covered under that permit, the Permittee is separately required to develop a Sewer System Management Plan which addresses their legal authority to "…prevent illicit discharges into its sanitary sewer system (examples may include [inflow and infiltration], stormwater, chemical dumping, unauthorized debris and cut roots, etc.)." For MS4s that do not have sanitary sewer authority, but have MS4 infrastructure co-located near sanitary sewers, those Permittee must develop and implement an overflow emergency response plan outlining procedures for addressing illicit discharges from a sanitary sewer system to the MS4.

The BMP implementation and maintenance requirements include a schedule of operation and maintenance activities for the MS4 and related structures (such as catch basins, storm drain inlets, and detention basins), as well as public streets and roads. Public streets and roads specifically include public rural, unpaved roads.

Inspection and Enforcement

Attachment K describes industrial, commercial, and municipal site inspection frequency, content, and tracking that each Permittee must incorporate into their industrial, commercial, and municipal operation programs. These requirements are necessary to demonstrate each Permittee is implementing a program that ensures BMP implementation in industrial, commercial, and municipal areas will reduce

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pollutants in storm water discharges to the MEP. This Order does not stipulate a minimum inspection frequency and directs the Permittee to develop an inspection procedure describing methods to inspect. The Permittee may consider onsite inspections or drive-by inspections. Inspections may be performed by the Permittee's municipal and contract staff, or by volunteer monitoring or patrol programs. Volunteer monitoring or patrol programs are not expected to enforce the Permittee's ordinances, or to inspect areas or facilities where members of the public are not allowed access. Volunteer monitoring or patrol programs must be trained by the Permittee, and are only expected to collect visual observations. By utilizing drive-by inspections and volunteer monitoring or patrol programs, the Permittee will be able to maximize and efficiently use their resources to identify and address sources of pollutants in areas of industrial, commercial, and municipal operations.

Pursuant to 40 CFR 122.26(d)(1)(ii) and40 CFR 122.26(d)(2)(i), each Permittee must have sufficient "*legal authority to control discharges to the municipal separate storm sewer system.*" Where enforcement is necessary for any development projects to compel compliance and ensure the pollutants in storm water discharges from the MS4 are reduced and continue to be reduced to the MEP, each Permittee is required to enforce its legal authority established pursuant to **Attachment J or K**, and in accordance with its Enforcement Response Plan required to be developed pursuant under the same provision.

Under the Prescriptive-Based path, the inspection content specified in **Attachment K** includes the information required to be collected during an inspection by any method. The inspection content includes additional information that must be collected and specifies the information that each Permittee must maintain in its inspection records for a minimum of three (3) years.

6. Training, Public Education and Participation

Under **Attachment J**, the Permittee is required to implement a training, public education and participation program. Under **Attachment K**, each Permittee is only required to implement a public education and participation program since training requirements are described under each program element separately. Proper implementation of the training, public education and participation program as part of its Storm Water Management Program will contribute toward effectively prohibiting non-storm water discharges to the MS4, and toward the reduction of pollutants in storm water from the MS4 to the MEP.

Attachment K establishes the minimum requirements that each Permittee must implement to engage Permittee staff and contractors, and members of the public as part of its Storm Water Management Program. Under previous permits issued by the Central Valley Water Board, MS4 Permittees have been required to implement training and public education programs which are now well established. For the most part, the training and public education program requirements in **Attachments J and K** have been reduced to a set of requirements that are specifically included in the federal regulations under 40 CFR 122.26(d)(2)(iv)(A)(6), 122.26(d)(2)(B)(6) and

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122.26(d)(2)(D)(4)[95], which should already be incorporated into each Permittee's existing training and public education programs. Each Permittee is expected to utilize the information and data collected from the monitoring and assessments conducted within the Jurisdictional Runoff Area, and from its tracking inventories, maps, and inspections to best direct its training and public education program resources toward addressing the highest priority water quality conditions identified within their Storm Water Management Plans.

According to 40 CFR 122.26(d)(2)(iv), public participation is required to be included as part of the "*comprehensive planning process*", which includes the development and implementation of the Storm Water Management Plans and Storm Water Management Programs. The requirements under **Attachments J and K** specify the opportunities that the public must be provided to be involved in the "*comprehensive planning process*", as required by to 40 CFR 122.26(d)(2)(iv).

7. Planning and Land Development/Post Construction Storm Water Management Program

As described under **Attachments J and K**, each Permittee is required to use its land use and planning authority to implement a development planning program to control and reduce the discharge of pollutants in storm water from new development and significant redevelopment to the MEP. Proper implementation of the Planning and Land Development program will also contribute toward effectively prohibiting non-storm water discharges from development projects to the MS4.Pursuant to 40 CFR 122.26(d)(2)(iv)[96], each Permittee is required to implement a "*management program…to reduce the discharge of pollutants to the MEP using management practices, control techniques and system, design and engineering methods, and other such provisions where applicable*." As part of the management program, 40 CFR 122.26(d)(2)(iv)(A)(2) requires "*planning procedures including a comprehensive master plan to develop, implement and enforce controls to reduce the discharge of pollutants from municipal storm sewers which receive discharges from areas of new development and significant redevelopment*."

Development typically includes the construction of impervious surfaces such as sidewalks, driveways, roads, and rooftops. These impervious surfaces generate and concentrate pollutants (such as pesticides, petroleum hydrocarbons, heavy metals, and pathogens) that are otherwise not found in high concentrations in the natural environment. Pollutants that accumulate on impervious surfaces are not easily biodegraded or not subject to natural treatment processes. When it rains, these pollutants ~~are~~ can be transported in storm water runoff from these impervious surfaces into receiving waters, resulting in poor water quality and degradation of beneficial uses. The California Department of Pesticide Regulation completed an urban surface water monitoring program in northern California in 2010 collecting water and sediment samples in urban creeks located in the Sacramento and San

[95] See 40 CFR 122.34(b)(1) and (2) for Phase II MS4 Public Education and Outreach on Storm Water Impacts and Public Involvement/Participation Program
[96] See 40 CFR 122.34(b)(5) for Phase II MS4 Post Construction Storm Water Management in New Development and Redevelopment Program

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Francisco Bay areas. This study indicated that "ninety-five percent of the water samples contained at least one pesticide but multiple detections were common."[97]

In addition to the generation of pollutants, development ~~generally~~ can alter~~s~~ the natural conditions of the land by removing vegetative cover, reducing the perviousness of the surface, and reducing the capacity of storm water that can be intercepted, captured, stored, infiltrated, evaporated, and/or evapotranspired. The alteration of the natural conditions and addition of impervious surfaces associated with development causes water quality problems. Hydrograph modification, or hydromodification, is the change in the natural watershed hydrologic processes and runoff characteristics caused by development or other land use changes that result in increased stream flows, altered sediment transport, and morphological changes to channels receiving the runoff.

This is consistent with what USEPA has noted, that "*[m]ost stormwater runoff is the result of the man-made hydrologic modifications that normally accompany development. The addition of impervious surfaces, soil compaction, and tree and vegetation removal result in alterations to the movement of water through the environment. As interception, evapotranspiration, and infiltration are reduced and precipitation is converted to overland flow, these modifications affect not only the characteristics of the developed site but also the watershed in which the development is located. Stormwater has been identified as one of the leading sources of pollution for all water body types in the United States. Furthermore, the impacts of stormwater pollution are not static; they usually increase with more development and urbanization*."[98]

Reducing the impact from the increased pollutant loads and flows generated by impervious surfaces added to a watershed is essential to protecting and restoring the integrity of the receiving waters. **Attachments J and K** includes the minimum "*management practices, control techniques and system, design and engineering methods, and other such provisions where applicable"* to be included in the "*planning procedures…to reduce the discharge of pollutants…from areas of new development and significant redevelopment*." The Planning and Land Development requirements of **Attachments J and K** will achieve multiple goals, for example 1) minimize the generation and discharge of pollutants in storm water from the MS4, and 2) minimize the potential of storm water discharges from causing altered flow regimes and excessive downstream erosion in receiving waters.

Control Measures for New and Redevelopment Projects

Attachments J and K are based on the requirements of previous permits approved by the Central Valley Water Board. **Attachments J and K** have been modified to allow the more integrated, holistic, and long-term planning approach of the Storm Water Management Program to be incorporated into the Permittee's development planning. The result will be greater pollutant removal from storm water runoff, and

[97] Monitoring Urban Pesticide Runoff in Northern California, 2009-2010, Report 264, California Department of Pesticide Regulation, July 2011. http://www.cdpr.ca.gov/docs/emon/pubs/ehapreps/report_264.pdf

[98] Reducing Stormwater Costs through Low Impact Development (LID) Strategies and Practices, USEPA, December 2007.

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improvements ~~and/or rehabilitation of~~in the functionality and hydrologic regimes of the subwatersheds located in and ~~adjacent to~~downstream of the Permittee's ~~MS4~~Jurisdictional Runoff Area. Specific components addressed in the Planning and Land Development/Post Construction Storm Water Management Program include defined criteria for Priority Development Projects, source and treatment control measures, numeric sizing criteria, erosion control and sediment management, maintenance agreement and transfers, low impact development, hydromodification management practices, coordination, enforcement and tracking, and the implementation of best management practices to promote infiltration. Mitigation funding, regional storm water mitigation and alternatives to onsite low impact development and hydromodification measures options are also described.

Incorporating an integrated, holistic and long-term planning approach into each Permittee's Planning and Land Development program is essential to reducing the impact of development on receiving waters. Development projects that convert natural open space areas into urbanized areas result in the generation and discharge of pollutants associated with anthropogenic activities and significant modifications to the hydrologic flow regimes. Both can adversely affect the chemical, physical, and biological conditions of receiving waters. Redevelopment projects, on the other hand, are opportunities to reduce the generation of pollutants and restore more natural hydrologic flow regimes in areas of industrial, commercial, and municipal operations, which can contribute toward restoring or rehabilitating the chemical, physical, and biological conditions of impacted and/or impaired receiving waters.

To improve the health and functionality of the receiving waters within the Central Valley region, planning and land use practices must change to reduce the various impacts due to hydromodification and pollutants associated with storm water runoff from developing and developed areas. Planning principles to preserve enhance, and restore the functionality and hydrologic regimes were incorporated into the development planning provisions of all previous permit terms within the Central Valley region. **Attachments J and K**~~.~~ of this Order focus on mitigating the effects of development by continuing to include these principles, as well as promote the concept of utilizing storm water as a resource. By doing so, pollutants in storm water runoff generated within developing and developed areas will be treated more naturally, and storm water will be discharged to receiving waters at discharge rates that are not unnaturally erosive, thereby resulting in conditions that are more supportive of healthy and sustainable water bodies.

For development projects identified as Priority Development Projects, the requirements of **Attachments J and K** are the "*management practices, control techniques and system, design and engineering methods, and other such provisions where applicable"* to be included in the "*planning procedures…to reduce the discharge of pollutants…from areas of new development and significant redevelopment.*" **Attachments J and K** describe the performance criteria for the BMPs that must be implemented for each Priority Development Project.

Attachments J and K emphasize preserving natural watershed hydrology by requiring retention of storm water and management of flows to maintain or mimic the natural hydrology of a site or delineated drainage area. The holistic and long-term planning approach of the Storm Water Management Plans is incorporated into

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Attachments J and K by encouraging the Permittee to improve or rehabilitate watershed functionality and flow regimes with a combination of strategies.

Attachments J and K describes the storm water pollutant control BMP requirements that must be implemented by all Priority Development Projects. The purpose of **Attachments J and K** is to reduce pollutants in storm water runoff to the MEP from Priority Development Projects before discharging to the MS4. Of all the available treatment processes available, retention of storm water, and therefore capture of the pollutants in the storm water, will achieve 100 percent pollutant removal efficiency for the volume of storm water retained. No other method of treatment can achieve 100 percent pollutant removal efficiency. Thus, retention of as much storm water onsite as possible is the most effective way to reduce pollutants in storm water discharges to and from the MS4, and controls pollutants in storm water discharges from a site to the MEP.

Under **Attachments J and K**, retention of the 85th percentile storm event is the default design standard that Priority Development Projects must use to implement to mimic the pre-development retention volume ("design capture volume"). Since the 85thpercentile storm event has previously been used as the numeric design standard for treatment control BMPs, the same size storm event has been applied as the numeric design standard for the storm water pollutant control BMP requirements. This is consistent with previous permit requirements approved by the Central Valley Water Board.

The 85thpercentile storm event is the event that has a precipitation total greater than or equal to 85 percent of all storm events over a given period of record in a specific area or location. For example, to determine what the 85th percentile storm event is in a specific location, all 24 hour storms that have recorded values over a 30 year period would be tabulated and a 85th percentile storm would be determined from this record (i.e., 15 percent of the storms would be greater than the number determined to be the 85th percentile storm). Most jurisdictions in the Central Valley Region have already developed isopluvial maps that can provide this type of information. The 85th percentile storm might be determined to be a number such as 1.0 inch, and this would be multiplied by the total area of the project footprint to calculate the design capture volume. The Priority Development Project designer would then select a system of BMPs that would retain (i.e. intercept, infiltrate, store, evaporate, evapotranspire, or harvest and use) the design capture volume, based on the 85th percentile storm event onsite.

Retention of all storm water and all pollutants in storm water onsite for the 85th percentile storm event, however, may not always mimic the natural pre-development retention volume. Retention of the volume generated by the 85th percentile storm event also may not be practical, nor desirable, as storm water flows are a necessary component of the natural hydrologic processes in a watershed.

The optimum amount of storm water retained onsite, or regionally, would mimic the pre-development retention volume of the project site. Mimicking the pre-development retention volume is an approach USEPA allows for federal development projects. USEPA issued guidance on implementing storm water runoff requirements for federal projects that requires the retention of the 95th percentile storm event as the default design standard to mimic the pre-development hydrology

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of a project site.[99]The USEPA guidance also provided an option to develop a site-specific design standard. Similar to the USEPA guidance for federal facilities, **Attachments J and K** provide an option to develop a site specific design capture volume that would mimic the pre-development retention volume of the project site.

Retention BMPs will be designed to capture a specific volume, and may take some time for the intercepted or captured storm water to infiltrate, evaporate, evapotranspire, or be used. Retention of the design capture volume, however, will capture and retain a significant portion of the pollutants generated and accumulated on a Priority Development Project. In a recent study performed by SCCWRP, they found "*that the magnitude of constituent load associated with storm water runoff depends, at least in part, on the amount of time available for pollutant build-up on land surfaces. The extended dry period that typically occurs in arid climates such as southern California maximizes the time for constituents to build-up on land surfaces, resulting in proportionally higher concentrations and loads during initial storms of the season*."[100] This implies that the "first flush" of a rainy season and the first storm events after long antecedent dry periods tend to have the highest pollutant loads. Capturing and retaining the pollutant loads of the "first flush" of a rainy season and the first storm events after long antecedent dry periods will reduce a significant portion of the pollutants in storm water discharged to and from the MS4.

The Central Valley Water Board, however, acknowledges that in some situations retaining the design capture volume fully onsite may not be technically feasible, may be cost prohibitive, or may not provide any overall water quality benefits to the water bodies located within the Jurisdictional Runoff Area. If the design capture volume is not retained onsite because the Priority Development Project is allowed to implement alternative compliance options, the pollutants in the portion of the design capture volume not reliably retained onsite must still be reduced to the MEP. Thus, flow through conventional treatment control BMPs are required to be implemented, where needed, on Priority Development Projects in addition to the retention BMPs and/or biofiltration BMPs.

Where the purpose of the Planning and Land Development requirements under **Attachments J and K** is to reduce pollutants in storm water runoff to the MEP, the purpose of the requirements under **Attachments J and K** is to maintain or restore more natural hydrologic flow regimes to prevent increased, unnatural erosion in downstream receiving waters to the MEP. **Attachments J and K** describe hydromodification management BMP requirements that must be implemented by all Priority Development Projects.

The Planning and Land Development requirements under previous permits approved by the Central Valley Water Board required the Permittee to address hydromodification design concepts in Development Standard Manual. The

[99]USEPA, 2009.Technical Guidance on Implementing the Storm Water Runoff Requirements for Federal Projects under section 438 of the Energy Independence and Security Act, EPA 841-B-09-001. December 2009.

[100] Stein, E.D., Tiefenthaler, L.L., and Schiff, K.C., 2007. Technical Report 510, Sources, Patterns and Mechanisms of Storm Water Pollutant Loading from Watershed and Land Uses of the Greater Los Angeles Area, California, USA. March 20, 2007.

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performance criteria for the implementation of structural BMPs on Priority Development Projects described in this Order are consistent with the requirements in previous permits. At a minimum, the Permittee must update their Development Standards Manual to incorporate structural BMP requirements of **Attachments J and K**.

8. ***Low Impact Development and Hydromodification***
The requirements of **Attachments J and K** are the minimum "*management practices, control techniques and system, design and engineering methods, and other such provisions where applicable"* to be included in the "*planning procedures…to reduce the discharge of pollutants…from areas of new development and significant redevelopment*" applicable to all development projects, regardless of size or purpose of development. These requirements are based on and consistent with the requirements for new and redevelopment projects in previous permits issued by the Central Valley Water Board. New and redevelopment projects are required to implement source and treatment control BMPs that will minimize the generation of pollutants. Additionally, each new and redevelopment project must implement, where applicable and feasible, low impact development best management practices (LID BMPs), infiltration BMPs and hydromodification to mimic the natural hydrology of the site and retain and/or treat pollutants in storm water runoff prior to discharging to and from the MS4. The Order requires each Permittee to develop or update and implement Low Impact Development criteria and Hydromodification Management Plans, and develop and maintain a Technical Guidance manual of development standards, including source, treatment, and infiltration controls, LID, hydromodification, and erosion and sediment control strategies consistent with the Low Impact Development and Hydromodification Management Plans. The Permittee must submit Low Impact Development criteria, Hydromodification Plan, and schedule for the development, modification, and implementation of the Technical Manual with its SWMP.

The LID Center defines LID as "*a comprehensive land planning and engineering design approach with a goal of maintaining and enhancing the pre-development hydrologic regime of urban and developing watersheds.*"[101]LID designs seek to control storm water at the source, using small-scale integrated site design and management practices to mimic the natural hydrology of a site, retain storm water runoff by minimizing soil compaction and impervious surfaces, and disconnect storm water runoff from conveyances to the storm drain system.

LID BMPs may utilize interception, storage, evaporation, evapotranspiration, infiltration, and filtration processes to retain and/or treat pollutants in storm water before it is discharged from a site so long as the processes or devices will not adversely impact groundwater quality. Because of these numerous options, the Central Valley Water Board expects that every development project will be able to implement some form of LID BMPs. Examples of LID BMPs include using permeable pavements, rain gardens, rain barrels, grassy swales, soil amendments, and native plants.

[101] www.lowimpactdevelopment.org

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Attachments J and K also include requirements for all development projects to, where feasible, landscape with native and/or low water use plants to minimize the discharge of non-storm water discharges associated with excessive irrigation, as well as harvest (i.e., storage) and use precipitation to promote the concept of utilizing storm water as a resource.

Only Priority Development Projects are subject to the Planning and Land Development requirements of **Attachments J and K**, which provide size thresholds and/or fit under specific use categories. Priority Development Projects are required to incorporate specific performance criteria for structural BMPs incorporated into the project plan to reduce the generation of pollutants, and address potential impacts from hydromodification.

The Priority Development Project categories are based on the requirements of the Third Permit Term for the Permittee. Priority Development Projects generally include new development and significant redevelopment projects that can generate large amounts of pollutants, or have large areas of impervious surface that will contribute to adverse impacts in receiving waters. Placement of impervious surfaces within the environment not only generates and accumulates significant amounts of pollutants that will be transported in storm water runoff, but also drastically modifies the natural hydrologic processes within the watersheds.

Impervious surfaces do not allow natural infiltration and treatment of storm water runoff to take place. Instead, storm water runoff from impervious surfaces have typically been directed through pipes, curbs, gutters, and other hardscape into receiving waters, with little treatment at significantly increased volumes and accelerated flow rates over what would occur naturally. The increased pollutant loads, storm water volume, discharge rates and velocities, and discharge durations discharged from the MS4 adversely impacts the flora and fauna of receiving waters, and causes increased, unnatural erosion and scouring within creek bed and banks. Placement of impervious surfaces also encapsulates “good” sediment (such as sand, gravel, rocks and cobbles) that would normally replenish creek beds and banks to help stabilize them.

Attachments J and K contain requirements for Permittees to minimize the adverse effects of hydromodification on water quality. “Hydromodification,” as the term is used in this Permit, refers to ecologically significant modification of a watershed’s natural hydrograph, characterized by increased volume, velocity, rate, duration, and/or overall energy (collectively, “flow). Hydromodification typically results from new land development that increases impervious surfaces, thereby increasing the flow of storm water runoff into the MS4 and receiving waters during peak storm events. Controls that minimize hydromodification impacts typically are designed to capture storm water runoff during peak storm events and control its release into receiving waters in a manner that approximates how the natural hydrograph would have responded to such a storm. Hydromodification controls are especially important when low-impact development (LID) measures fail to perform due to improper design, installation or maintenance.

Left uncontrolled, hydromodification has the potential to increase the discharge of pollutants into waters of the United States in at least two ways. First, significantly increasing the flow of storm water runoff is associated with increased sedimentation

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of receiving waters, whether such sediment originates from lands surrounding the receiving water or from the bed/bank of the receiving water itself.[102] Second, the sediment roiled by increased storm water flows can mobilize other pollutants that absorb or adsorb to sediment, thereby facilitating their deposition into waters of the United States. Such eroded sediment and sediment-bound pollutants often have adverse impacts to the quality of waters of the United States, sensitive habitat, and/or aquatic or terrestrial organisms. Significant changes to the preexisting hydrograph can also disrupt natural drainage patterns in ways that cause significant increases in water temperatures in stream segments. These and similar changes can set off further water quality impacts such as excessive nutrient loads and corresponding drops in dissolved oxygen. This explanation is intended as an illustrative, but not exhaustive list of the ways that hydromodification can lead to the discharge of pollutants into waters of the United States.

The connection between significant increases in flow and the discharge of pollutants finds additional support in precedential State Water Board orders. For example, in the 2000 State Water Board order *In re Bellflower* (the "SUSMPs Order"), the board considered a challenge to the Los Angeles Regional Water Board's inclusion of numeric design criteria to manage the volume of Permittee's urban storm water runoff. The State Water Board made the following observation regarding new development controls:

> [The controls] *are aimed at limiting not just the pollutants in the runoff from the new development, but also the volume of runoff that enters the [MS4]. By limiting runoff from new development, the [controls] prevent increased impacts from urban runoff generally. <u>There is adequate technical information in the record to show that by controlling the volume of runoff from new development, BMPs can be effective in reducing the discharge of pollutants in storm water runoff</u>*.[103]

The State Water Board reiterated this concept in 2001, stating, "The Regional Water Board is appropriately concerned not only with pollutants in runoff but also the volume of runoff, since the volume of runoff can affect the discharge of pollutants."[104]

The well-established connection between higher intensity flows and the discharge of pollutants puts this Region-wide Permit's hydromodification requirements squarely

[102] Higher intensity flows can loosen sediment within the MS4's Jurisdictional Runoff Area and cause the MS4 to discharge the sediment into waters of the United States. Additionally, higher intensity flows from an MS4 can loosen sediment that had settled in the bed and/or banks of waters of the United States and which would have remained settled if not for increased flows from the MS4. In this manner, higher intensity flows from an MS4 can discharge sediment into waters of the United States even when the sediment is not physically present in the MS4's effluent. *See Conway v. State Water Resources Control Board* (2015) 235 Cal.App.4th 671, ___, 185 Cal.Rptr.3d 490, 493-494 ("[O]ne can discharge a pollutant from one part of the receiving waters into another part of the same receiving waters.").
[103] State Water Board Order WQ 2000-11, at p. 5 (emphasis added).
[104] State Water Board Order WQ 2001-15, at p. 12, fn. 23.

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within the mandates of the CWA. Section 402(p) of the Act provides that MS4 permits

> *… shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the* [US EPA] *Administrator or the State determines appropriate for the control of such pollutants*.[105]

The hydromodification requirements in this Order fall within the MEP standard because they (1) are designed to effectively address pollutants of concern, (2) are technically feasible, and (3) will achieve benefits that bear a reasonable relationship to the cost of implementation. To the extent any of the hydromodification requirements in this Order may go beyond the MEP standard, their inclusion in the Order represents the Central Valley Water Board's judgment that they are necessary and appropriate for the control of pollutants, as supported by the studies referenced in this Fact Sheet.

This increased and unnatural erosion, which is caused by both altered storm water flow and altered sediment flow regimes, is largely responsible for degradation of creeks, streams, and associated habitats in the Central Valley region. In an ongoing study by the Stormwater Monitoring Coalition to assess the health of streams throughout Southern California, researchers found that three of the four highest risk stressors to creeks (percent sands and fines present, channel alteration, and riparian disturbance) were related to physical habitat.[106] Researchers studying flood frequencies in Riverside County have found that increases in watershed imperviousness of only 9-22 percent can result in increases in peak flow rates for the two-year storm event of up to 100 percent.[107] Such changes in runoff have significant impacts on channel morphology.

In addition, a technical report issued by the Southern California Coastal Water Research Project (SCCWRP) stated that "*[r]ecent studies indicate that California's intermittent and ephemeral streams are more susceptible to the effects of hydromodification than streams from other parts of the United States. Physical degradation of stream channels in the central and eastern United States can initially be detected when watershed impervious cover approaches 10 percent, although biological effects (which may be more difficult to detect) may occur at lower levels. In contrast, initial response of streams in the semi-arid portions of California appears to occur between 3 and 5 percent impervious cover*."[108] These studies highlight the extent to which impacts originating from impervious surfaces created by

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[105] 33 USC section 1342(p)(3)(B)(iii).
[106] Assessing the Health of Southern California Streams, Stormwater Monitoring Coalition, Fact Sheet
[107] Schueler and Holland, 2000.Storm Water Strategies for Arid and Semi-Arid Watersheds (Article 66).*The Practice of Watershed Protection*.
[108] Stein, E. and Zaleski, S., 2005. Technical Report 475, Managing Runoff to Protect Natural Streams: The Latest Development on Investigation and Management of Hydromodification in California. December 30, 2005.

development are responsible for the degradation and hydromodification of creeks and streams.

Attachments J and K, however, do allow exemptions from hydromodification requirements for development project types that meet certain conditions. Exempted projects do not need to apply the hydromodification control criteria. The exemptions have been provided as an incentive for the Permittee to encourage and promote the implementation of LID design concepts and green infrastructure and building principles. Development projects that meet the exemption conditions are not expected to be cost prohibitive and also expected to be protective of water quality.

This Order also establishes hydromodification control criteria to protection natural drainage systems. Hydromodification control criteria are numeric storm water management objectives applied to non-exempted new and redevelopment projects to meet pre-project hydrology in natural drainage systems. The purpose of the hydrologic controls is to minimize changes in post-project hydrologic storm water runoff discharge rates, velocities, and duration. This must be achieved by maintaining the project's pre-project storm water runoff flow rates and durations. Control criteria include demonstrating storm water runoff is retained onsite or the Erosion Potential (Ep) in the receiving water channel will approximate 1, as determined by the equation provided in **Attachment I** (*Determination of Erosion Potential*). The Permittee must demonstrate that post-project conditions are expected to approximate the pre-project erosive effect of sediment transporting flows in receiving waters. The hydromodification control criteria must lead to the incorporation of project design features intended to approximate, to the extent feasible, an Ep value of 1 to demonstrate that the project design features will be protective of the natural drainage systems from erosion, incision, and sedimentation that can occur as a result of flow increases from impervious surfaces and damage stream habitat in natural drainage systems. Control criteria are applied differently to projects disturbing between one (1) and fifty (50) acres, which are presumed to meet pre-project hydrology and projects disturbing over fifty (50) acres.

Attachments J and K require that post-project flow rates and durations mimic the *pre-project* condition consistent with those requirements under previous permits. This includes assuming artificially hardened channels receiving storm water discharges from a Priority Development Project have the characteristics of a natural stream segment similar to that found in the watershed.

Attachments J and K require hydromodification management BMPs to compensate for sediment loss in cases where the development would cause loss of sediment supply as a result of the project. Maintaining the pre-project flows and durations from a Priority Development Project will significantly reduce the potential for increased erosion caused by development. Loss of natural sediment because pervious areas covered by the impervious surfaces on the Priority Development Project, however, can still cause increased, unnatural erosion in receiving waters. Runoff that is discharged from a Priority Development Project that lacks sediment becomes "sediment hungry" and can result in increased erosion upstream and downstream from the point of discharge.

Alternative Compliance Options

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This Order provides an option for a Permittee to identify and compile a list of candidate projects that could potentially be used as alternative compliance options for Priority Development Projects. A Permittee may allow alternative compliance in instances where it determines that offsite measures will have a greater overall water quality benefit than if the Priority Development Project were to implement structural BMPs onsite. Such projects include, for example, opportunities for stream or riparian area rehabilitation, opportunities for retrofitting existing infrastructure to incorporate storm water retention or treatment, and opportunities for regional BMPs, among others. Once these candidate projects are identified, Permittees may allow Priority Development Projects to fund, partially fund, or completely implement these candidate projects. The Permittee must first find that implementing such a candidate project would provide greater overall benefit to the watershed than requiring implementation of the structural BMPs onsite, and also enter into a voluntary agreement with the Priority Development Project that authorizes this arrangement.

Other options allow the Permittee to propose a mitigation funding framework, regional storm water mitigation program, an in-lieu fee structure, or water quality credit system. A Permittee may choose to propose a mitigation management framework to support regional or sub-regional solutions to storm water pollution, or regional storm water mitigation program to substitute the development standard requirements required to be included in the Technical Guidance manual. An in-lieu fee structure or water quality credit system options are innovative pathways for Permittees to regulate their land development programs by allowing alternative compliance on each and every Priority Development Project. The Permittee may use an alternative compliance program to reach their stated goals of the Storm Water Management Program by using Priority Development Projects to either fund or implement projects that will provide water quality benefit and/or as an alternative to requiring strict adherence to the structural BMP design standards.

The Central Valley Water Board understands, however, that undertaking any of these approaches involves extensive planning, could be resource intensive for a Permittee. Therefore, the alternative compliance programs are optional and not a requirement of this Order.

Retrofitting and Rehabilitating Areas of Existing Development

This Order encourages the Permittee to identify areas of existing development (e.g., industrial, commercial, municipal, residential) as candidates for retrofitting, and streams, channels, and/or habitats as candidates for rehabilitation. The requirements have been incorporated into this Order to be more focused on utilizing these types of projects for addressing the highest priority water quality conditions identified in the Permittee's SWMP. Interest and opportunity to retrofit areas of existing development and rehabilitate channels located in areas of existing development has been observed in several programs the Central Valley Water Board oversees (e.g., CWA Section 401 Water Quality Certification program, supplemental environmental projects, and grant programs). For example, each jurisdiction has miles and miles of streets that could be retrofitted to become green streets. Reshaping landscaped areas from convex to concave configurations can detain storm water instead of directing runoff as quickly as possible to the MS4. Retrofit projects could also include simply replacing impervious surfaces with permeable surfaces.

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Retrofitting projects do not necessarily have to be expensive. Retrofitting projects could be as simple as redirecting downspouts from roofs to pervious or landscaped areas instead of to hardscaped areas discharging directly to the MS4, providing rain barrels to harvest storm water from downspouts for use at a later time, or planting more trees in areas with little vegetation to provide canopy that can intercept storm water. The Central Valley Water Board encourages the Permittee to identify simple, low-cost retrofitting opportunities that can be easily implemented, in addition to other more expensive retrofitting and channel rehabilitation projects.

Rehabilitation of channels, streams, and/or habitat will require more significant planning and resources to implement. There are, however, also abundant opportunities to rehabilitate channels, streams and/or habitats in or adjacent to areas of existing development. Each Jurisdictional Runoff Area likely has several creeks and stream reaches that have been undergrounded, artificially hardened, or hydromodified that could be rehabilitated to be more sustainably configured, which would slow down storm water flows and potentially have more assimilative capacity for pollutants while still being supportive of designated beneficial uses.

The Central Valley Water Board recognizes that it may be infeasible to implement retrofitting or channel rehabilitation projects within certain areas of a Permittee's jurisdictions. For such areas, the Permittee is encouraged to instead identify, develop, and implement regional retrofitting and channel rehabilitation projects (i.e. projects that can retain and/or treat storm water from one or more areas of existing development) adjacent to and/or downstream of the areas of existing development.

This Order encourages the development and implementation of retrofitting and rehabilitation projects, so that a Permittee can to develop a program with strategies to facilitate the implementation of these types of projects in areas of existing development. The strategies are expected to include allowing and encouraging Priority Development Projects to implement retrofitting types of projects as a means of compliance with the structural BMP performance criteria requirements.

C. Implementation

Part V.E.4 describes requirements for the Permittee to implement a Storm Water Management Program as described in an approved SWMP. The Permittee must continue implementation of their current SWMP until that SWMP has either been a) deemed to meet the intent of this Order, or b) has been modified to be consistent with this Order. Once the SWMP has been approved by the Central Valley Water Board, the Permittee shall implement the new, approved SWMP and corresponding Work Plan, consistent with the schedule developed as a part of this Order. Annual Reports must include proposed SWMP modifications based on results implementing the Permittee's Storm Water Management Program. The SWMP, with modifications, revisions, or amendments as approved by the Central Valley Water Board, is an enforceable component of this Order.

Effectiveness Assessment and Reporting

Part V.E.5 describes the effectiveness assessment and reporting requirements of this Order. The Permittee must develop and implement an effectiveness assessment approach to track the short- and long-term effectiveness of its Storm Water Management Program in addressing the PWQCs. The effectiveness assessment approach will assist

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the Permittee in adaptively managing its Storm Water Management Program and making necessary modifications to the program in order to address the PWQCs, achieve the MEP standard for storm water discharges from its MS4, and protect water quality. The short and long term effectiveness assessment approach must be described in the SWMP by the Permittee. An effectiveness assessment evaluates receiving waters, MS4 discharges, storm water pollutant discharge reductions, Water Quality Based Plans and Special Studies, and program elements. The results of the effectiveness assessments will be provided in in the Mid-Term Report (short term effectiveness assessment) and End Term Report (long term effectiveness assessment). As described in USEPA's guidance on effectiveness assessments, the purposes of a program evaluation include:

1. Meeting regulatory requirements;

2. Documenting progress toward water quality milestones;

3. Justifying commitment of resources;

4. Providing feedback to the management program; and

5. Assessing reductions in pollutants of concerns.

Part V.F describes the reporting requirements under this Order. The purpose of this provision is to determine and document compliance with the requirements set forth in this Order. The goal of reporting is to communicate to the Central Valley Water Board and the people of the State the implementation status of each Storm Water Management Program and compliance with the requirements of this Order. This goal is to be accomplished through the submittal of specific deliverables to the Central Valley Water Board by the Permittee. Annual Reports must include several components to meet the requirements in 40 CFR 122.24(c); all reports must meet the requirements contained in **Attachment H (***Standard Permit Provisions and General Provisions*) and of this Order. The Permittee is also required to submit a completed certification statement in accordance with the signatory requirements in **Attachment H** (*Standard Permit Provisions and General Provisions)*.

Storm Water Management Plans
The Permittee shall develop/revise and submit a SWMP to the Central Valley Water Board for approval. The SWMP, including the RAA, shall be submitted in accordance with the timelines outlined in **Part V.F.2** of the Order.

Work Plans
The Permittee must develop a five (5) year Work Plan to be submitted in conjunction with the SWMP. The Work Plan serves as the Permittee's schedule for implementing their SWMP. The Work Plan must contain a detailed implementation schedule that covers all of the tasks outlined in the SWMP. Proposed modifications to the Work Plan may be submitted during the Annual Reporting process. The Work Plan and modifications to the Work Plan must be approved by the Executive Officer.

Annual Reports
The Permittee must submit an Annual Report for each reporting period no later than October 1 of each permit year. The annual reporting period consists of the reporting period of July 1 through June 30 of the previous fiscal year.

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The Annual Report shall include a certification that the Storm Water Management Program and Work Plan were implemented as proposed/approved, a discussion of proposed compliance with the SWMP and Work Plan for the forthcoming year, and any proposed minor modifications to the Storm Water Management Program, or any proposed Work Plan modifications.

Mid-Term and End-Term Reports
The Permittee must develop and submit Mid-term and End-Term Reports to the Central Valley Water Board. The Mid-Term Report shall be submitted within three (3) years of filing a Notice of Intent to obtain coverage under this Order, and the End-Term Report shall be submitted within five (5) years of filing the Notice of Intent to obtain coverage under this Order. The Mid-Term and End-Term Reports shall include a cumulative summary of Storm Water Management Program activities; status of compliance with SWMP milestones, strategies, and activities, or if SWMP milestones, strategies, and activities were not met, justifications to revise the SWMP; a fiscal analysis; a cumulative summary of the monitoring data; all physical, chemical, and biological monitoring data collected to date; data analytical results and recommendations to modify the Monitoring Study Design and Implementation Schedule, Water Quality Based Plans and Special Studies; and/or Quality Assurance/Quality Control Plan.

The Mid-Term Report shall include a short-term Storm Water Management Program effectiveness assessment. The End-Term Report shall include a long-term Storm Water Management effectiveness assessment.

The Mid-Term and End-Term Reports serve as the Annual Reports for the years they are submitted.

Adaptive Management and Modification
The last step in the water quality focused framework is adaptive management and modification. **Part V.E.6** describes the iterative approach and adaptive management process. The Permittee must implement an adaptive management approach and modify the SWMP and Work Plan so that the Storm Water Management Program is effective over the long term. The adaptive management process fulfills the requirements in **Part V.C.5** to address exceedances of receiving water limitations. As applicable, the Permittee must evaluate the results of the each effectiveness assessment and determine if significant progress is being made and/or if the identified milestones are being achieved. The adaptive management approach shall be described in the Permittee's SWMP. Specifically, the Permittee must develop and implement an adaptive management approach that addresses the following:

1. Progress towards achieving improved water quality in receiving water and MS4 **discharges**, and receiving water limitations based on the Effectiveness Assessment (**Part V.E.5**);

2. Achievement of water quality milestones, including providing quantifiable reductions in pollutant concentrations and loads in MS4 discharges over time;

3. Re-evaluation of the water quality priorities based on newly identified sources and/or more recent monitoring data for discharges from the MS4 and the receiving water(s), and the effectiveness of implemented pollutant controls;

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4. Compliance with water quality objectives or standards and if beneficial uses are being met; and

5. Availability of new information and data from sources other than the Permittee's monitoring program(s) that informs the effectiveness of the actions implemented by the Permittees.

Based on the results of the adaptive management process, the Permittee must report any modification~~,~~ necessary to improve the effectiveness of the Storm Water Management Program, including modifications to final dates for attainment with water quality standards (except for those compliance deadlines established in a TMDL), or the need for a compliance schedule (**Part III.B.3**)~~, with the exception of those compliance deadlines established in a TMDL, necessary to improve the effectiveness of the Storm Water Management Program~~. The Permittee shall identify modifications to the Storm Water Management Program, including monitoring modifications to be revised in the Permittee's SWMP.

The Permittee must implement any minor modifications to the Storm Water Management Plan upon approval by the Executive Officer or within ninety (90) days of submittal if the Executive Officer expresses no objections.

Standard Permit Provisions and General Provisions
Standard Provisions, which apply to all NPDES permits in accordance with 40 CFR section 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR section 122.42, are provided in **Attachment H** (*Standard Permit Provisions and General Provisions*). Dischargers must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR section 122.42.

These provisions are based on 40 CFR sections 122.44, 122.62, 122.63, 122.64, 124.5, 125.62, and 125.64, and are also consistent with requirements included in previous permit issued by the Central Valley Water Board. The Central Valley Water Board may reopen the permit to modify permit conditions and requirements, as well as revoke, reissue, or terminate in accordance with federal regulations. Causes for such actions include, but are not limited to, endangerment to human health or the environment; acquisition of newly-obtained information that would have justified the application of different conditions if known at the time of Order adoption; to incorporate provisions as a result of new federal or state laws, regulations, plans, or policies (including TMDLs and other Basin Plan amendments); modification in toxicity requirements; violation of any term or condition in this Order; and/or minor modifications to correct typographical errors or require more frequent monitoring or reporting by a Permittee. The Order also includes additional causes including: approval or revised TMDL, where the revisions warrant a change to the provisions of this Order, the Central Valley Water Board may modify this Order consistent with the assumptions and requirements of the revised WLA(s), including the program of implementation; in consideration of any State Water Board action regarding the precedential language of State Water Board Order WQ 99-05; and to include provisions or modifications to WQBELs in **Attachment ~~H~~ G** (*Specific Provision for Total Maximum Daily Loads Applicable to Order R5-2016-XXXX*) in this Order prior to the final compliance deadlines, if practicable, that would allow an action-based, BMP compliance demonstration approach with regard to final WQBELs for storm

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water discharges based on the Central Valley Water Board's evaluation of whether Storm Water Management Programs in **Part V.E** of the Order have resulted in attainment of interim WQBELs for storm water and review of relevant research, including but not limited to data and information provided by Permittees and other stakeholders, on storm water quality and the efficacy and reliability of control technologies.

VIII. PUBLIC PARTICIPATION

Central Valley Water Board staff held a kick-off meeting on 2 July 2013 to discuss the preliminary schedule for permit development; identify potential alternative permit structures; and outline some of the major technical and policy aspects of permit development. All Central Valley Water Board MS4 Permittees, as well as other known interested stakeholders, were invited to attend. Over 70 individuals attended the meeting, representing most of the Permittees as well as environmental organizations. After a presentation by Board staff, Permittees and interested persons had an initial opportunity to ask questions of staff, raise concerns, and provide feedback.

Subsequent stakeholder meetings were held on 7 September 2013 and 12 November 2013. Topics discussed included program elements and different permit structures. A Working Group was formed to work with Central Valley Water Board staff on developing permit language. Central Valley Water Board staff met with members of the Working Group over multiple meetings, in addition to holding ongoing discussions ~~and attending meetings~~ with USEPA, State Water Board, ~~-~~and interested environmental group representatives.

The Central Valley Water Board released an ~~Preliminary~~ Administrative Draft of this Order to stakeholders and interested persons on 11 March 2016. The Central Valley Water Board conducted a staff level workshop on 6 April 2016 to solicit comments and answer questions regarding the draft permit.

Prior to the Board's consideration of this Order, the Central Valley Water Board notified the Permittees and all interested agencies and persons of its intent to hold a hearing to issue a Region-wide NPDES permit for discharges from the Central Valley Water Board's MS4s and provided them with an opportunity to submit written comments on the Tentative Order over a 30-day period. The procedures followed for submission of written comments are described in the Notice of Public Hearing and Tentative Order transmittal documents published for this Order. Notification was provided through the Central Valley Water Board's website, the Central Valley Water Board's e-mail subscription service, and major newspapers in the Central Valley.

The Central Valley Water Board held a public hearing on the Tentative Order during its regular Board meeting on XX June 2016. Permittees and interested persons were invited to attend. At the public hearing, the Central Valley Water Board heard testimony and comments pertinent to the discharge and this Order. The hearing procedures followed by the Central Valley Water Board are described in the Notice of Public Hearing published for this Order.

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ATTACHMENT G – Specific Provisions for Total Maximum Daily Loads Applicable to Order R5-2016-XXXX

G

Central Valley Water Board Approved TMDLs where urban runoff is listed as a source

TMDL Effective Date / BPA / Res. No.	Municipality	Applicable Water Bodies	Deliverables/Actions Required/~~Waste Load Allocations~~Water Quality Based Effluent Limitations
Stockton Urban Water Bodies Pathogen TMDL, *Pathogens* Effective Date: 13 May 2008 Resolution No.: R5-2008-0030	Stockton Area MS4 (City of Stockton and County of San Joaquin)	Five Mile Slough (from Alexandria Place to Fourteen Mile Slough) Lower Calaveras River (from Stockton Diverting Canal to Stockton Deep Water Ship Channel) Mormon Slough (from Commerce Street to Stockton Deep Water Ship Channel) Mosher Slough (from 3.5 miles upstream of Interstate 5 to confluence with the Stockton Deep Water Channel) Smith Canal (from Yosemite Lake to the confluence with the San Joaquin River) Walker Slough (from Duck Creek confluence to French Camp Slough)	**Water Quality Based Effluent Limitations (WQBELs):** City of Stockton and County of San Joaquin (collectively, "Permittees") shall implement BMPs that will attain applicable WLAs by the Final Compliance Deadline and maintain such attainment thereafter. **Waste Load Allocations (WLAs)** Fecal Coliform Allocation: 200/100 mL Geometric Mean[1], nor 400/100 mL for 10% of samples[2] *E. Coli* Allocation: 126/100 mL Geometric Mean[3], and 235/100 mL single sample maximum [1] Geometric mean concentration of not less than five samples for any 30-day period [2] During any 30-day period [3] Geometric mean concentration of a statistically sufficient number of samples (generally not less than five samples equally spaced over a 30-day period) **Deadline for Attainment of WLAs:** 30 June 2018 ("Final Compliance Deadline") **Monitoring Provisions and Provisions for Implementing the Control Program:** The following provisions apply to the City of Stockton and County of San Joaquin MS4 Permittees upon Central Valley Water Board issuance of NOAs: 1. The Permittees shall continue to implement the Pathogen Plan or other monitoring and implementation activities consistent with the Stockton Urban Water Bodies Pathogen Control Program. If necessary, additional controls and regulatory options will be identified by the Central Valley Water Board with assistance by the Permittees to address the impairment. 2. ~~Consistent with the requirements of the Pathogen Plan, t~~The Permittees shall document in Mid-Term and End-Term Reports ~~Annual Reports~~ the implementation of BMPs to control the discharge of pathogens in their urban discharge. 3. The Permittees shall complete and submit program effectiveness assessments in their Mid-Term and End-~~of-~~Term Reports as specified in **Part V.E.5** of the Order that include assessment of the effectiveness of the BMPs implemented to control the discharge of pathogens in their urban discharge.

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TMDL Effective Date / BPA / Res. No.	Municipality	Applicable Water Bodies	Deliverables/Actions Required/~~Waste Load Allocations~~Water Quality Based Effluent Limitations
			4. The Permittees shall use the information gained from the program effectiveness assessments to improve their SWMPs and identify new BMPs or modifications of existing BMPs to ensure that they are meeting applicable WQBELs. 5. Monitoring and assessment information may come from the Permittees' monitoring efforts; monitoring programs conducted by State or federal agencies or collaborative watershed efforts; or from special studies that evaluate the effectiveness of management practices. 6. With Executive Officer approval, the Permittees may participate in the Delta Regional Monitoring Program or other collective monitoring efforts in lieu of some or all of the individual monitoring requirements required by the Pathogens Plan. **Demonstration of Compliance with WQBELs** Compliance with the effluent limitations in **Part III.B** of this Order associated with applicable ~~waste load allocation~~WLAs for fecal coliform and *E. coli* may be demonstrated by any one of the following methods: 1. Prior to the Final Compliance Deadline, implementation of the BMPs consistent with an approved SWMP that outlines ~~BMPs and~~ a schedule of BMPs to reduce discharges of fecal coliform and *E. ~~C~~coli* that are capable of achieving compliance with applicable WLAs by the Final Compliance Deadline. 2. Receiving water monitoring and/or other information, as authorized by the Executive Officer, that reasonably demonstrates attainment of applicable WLAs in the Applicable Water Bodies. 3. Attainment of applicable WLAs within the discharge. 4. ~~Permanent cessation of~~No discharges from the Permittee's MS4s to the Applicable Water Bodies. ~~4.~~5. After the Final Compliance Deadline, timely implementation of a Central Valley Water Board-approved compliance schedule for meeting applicable fecal coliform and *E. coli* WLAs.
Lower San Joaquin River, Stockton Deep Water Ship Channel TMDL	Phase I MS4 Permittees: City of Stockton and County of San Joaquin (Stockton Urbanized Area)	Lower San Joaquin River (Stockton Deep Water Ship Channel)	**Water Quality Based Effluent Limitations (WQBELs):** Permittees listed under "Municipality" for this TMDL (left) shall implement BMPs that will attain and maintain applicable WLAs. **Waste Load Allocations (WLAs):** The Basin Plan Amendment establishing this TMDL set the initial waste load allocations for NPDES-permitted discharges of oxygen demanding substances and their precursors as the effluent limitations

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Organic Enrichment and Low Dissolved Oxygen Effective Date: 27 February 2007 Resolution No.: R5-2005-005	Port of Stockton[109] Phase II MS4 Permittees: Atwater City Bret Harte CDP Ceres City Delhi CDP Empire CDP Escalon City Hughson City Keyes CDP Lathrop City Livingston City Los Banos City Manteca City Merced City Merced County Newman City		that were applicable on 28 January 2005. Waste load allocations and permit conditions for new or expanded point source discharges in the SJR Basin upstream of the SDWSC, including NPDES and storm water, are based on the discharger demonstrating that the discharge will have no reasonable potential to cause or contribute to a negative impact on the dissolved oxygen impairment in the SDWSC. ~~Phase I Permittees. On 28 January 2005, the 2002 Phase I MS4 permit for the Stockton Urbanized Area (Section 33) stated the following for effluent limits: "... the effluent limitations in this Order are narrative, and include the requirement to reduce pollutants in storm water discharges to the MEP.~~ In lieu of numeric effluent limitations, this Order requires the implementation of BMPs identified in the Permittees' SWMP to control and abate the discharge of pollutants in storm water discharges. ~~Implementation of BMPs and compliance with performance standards in accordance with the Permittees' SWMP and its schedules constitutes compliance with the MEP standard". This permit applies these limitations to discharges from the Stockton Urbanized Area MS4 maintained by the City of Stockton and County of San Joaquin upon Central Valley Water Board issuance of NOAs.~~ ~~On 28 January 2005, the 2004 Phase I MS4 permit for the Port of Stockton (Section 30) stated the following for effluent limitations: "...the effluent limitations in this Order are narrative, and include the requirement to reduce pollutants in storm sewer discharges to the MEP. This Order requires the implementation of BMPs and performance standards identified in the Port's SWMP to control and abate the discharge of pollutants in storm water discharges. Implementation of BMPs and compliance with performance standards in accordance with the Port's SWMP and its schedules constitutes compliance with the MEP standard." This permit applies these limitations to discharges from the Port of Stockton upon Central Valley Water Board issuance of an NOA.~~ ~~Phase II Permittees. On 28 January 2005, the 2003 Phase II MS4 permit stated the following for effluent limitations in section A. Application Requirements C.1. Effluent Limitations: "Permittees must implement BMPs that reduce pollutants in storm water to the technology-based standard of MEP." This permit applies these limitations to discharges from Phase II MS4s maintained by the municipalities identified in the column to the left to which the Central Valley Water Board has issued NOAs.~~ ~~Phase I and Phase II Permittees. In measuring compliance with permit requirements related to attainment of these waste load allocations, credit will be given for control measures implemented after 12 July 2004.~~

[109] The Port of Stockton is listed as a "Municipality" for this TMDL, but its municipal storm water discharges' contribution to oxygen demanding substances has been shown to be *de minimis*. It participates in the aerator operation and maintenance agreement on a voluntary basis. Descriptions of Port of Stockton activities that implement this TMDL therefore should not be construed as WQBELs or other permit requirements.

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	Oakdale City Patterson City Ripon City Riverbank City Salida CDP San Joaquin County Stanislaus County Turlock City West Modesto CDP		**Deadline for Attainment of WLAs:** 31 December 2011 ("Final Compliance Deadline") **Monitoring Provisions and Provisions for Implementing the Control Program:** The following provisions apply to Phase I and Phase II Permittees identified in the column to the left to which the Central Valley Water Board has issued NOAs: 1. The Phase I and Phase II Permittees shall implement BMPs to control the discharge of oxygen demanding substances and their precursors in their urban discharge. These will be implemented through compliance with requirements in this Order. 2. The Phase I and Phase II Permittees shall document in their Work Plan, Mid-Term and End-Term Reports the implementation of BMPs to control the discharge of oxygen demanding substances and precursors in their urban discharge. 3. The Phase I and Phase II Permittees shall complete and submit program effectiveness assessments in their Mid-Term and End-Term Reports as specified in **Part V.E.5** of the Permit that include assessment of the effectiveness of the BMPs implemented to control the discharge of oxygen demanding substances and precursors in their urban discharge. 4. The Permittees shall use the information gained from the program effectiveness assessments to improve their SWMPs and identify new BMPs or modifications of existing BMPs to ensure that they are meeting applicable WLAs. 5. Monitoring and assessment information may come from the Permittees' monitoring efforts; monitoring programs conducted by State or federal agencies or collaborative watershed efforts; or from special studies that evaluate the effectiveness of management practices. 6. The Phase I and Phase II Permittees shall incorporate a monitoring and reporting plan into their respective SWMPs~~Within six months of NOA issuance, the Phase I and Phase II Permittees shall submit a monitoring and reporting plan for Executive Officer approval~~. 7. With Executive Officer approval, the Phase I and II Permittees may participate in the Delta Regional Monitoring Program or other collective monitoring efforts in lieu of some or all of the individual monitoring requirements required by this section. 8. Stockton Urbanized Area MS4 Permittees shall continue to implement the Low Dissolved Oxygen Plan or other monitoring and BMPs consistent with the San Joaquin Dissolved Oxygen Control Program and its associated WLAs. See Fact Sheet **Part B.1** (*Attachment F*) for a description of the Low Dissolved Oxygen Plan. If necessary, additional controls and regulatory options will be

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			identified by the Central Valley Water Board with assistance by the Permittees to address the impairment. 9. It is anticipated, but not required under this Order, that t~~T~~he Port of Stockton MS4 ~~shall~~will continue to implement the following elements of the Low Dissolved Oxygen Plan: Monitor dissolved oxygen in the SDWSC, provide operations and maintenance services for multiple aeration devices in the SDWSC, and participate in the aerator operations and maintenance agreement that is maintained among the stakeholders of the San Joaquin River Dissolved Oxygen Control Program. **Demonstration of Compliance with WQBELs** Compliance with the effluent limitations in **Part III.B** of this Order associated with applicable ~~waste load allocation~~WLAs for oxygen demanding substances and their precursors may be demonstrated by any one of the following methods: 1. Receiving water monitoring and/or other information, as authorized by the Executive Officer, that reasonably demonstrates attainment of applicable WLAs ~~by the Final Compliance Deadline~~. 2. Attainment of applicable WLAs within the discharge ~~by the Final Compliance Deadline~~. 3. ~~Permanent cessation of~~No discharges from the Permittee's MS4 to the Applicable Water Body ~~Body prior to the Final Compliance Deadline~~ or its tributaries. ~~3.~~4. Timely implementation of a Central Valley Water Board-approved compliance schedule for meeting applicable WLAs for oxygen demanding substances.
Delta TMDL *Methylmercury* Effective Date: 20 October 2011 Resolution No.: R5-2010-0043	Phase I MS4 Permittees: Port of Stockton Sacramento Area MS4 Stockton Area MS4 County of Contra Costa	Sacramento-San Joaquin Delta and Yolo Bypass waterways listed in Appendix 43 of the Basin Plan – Table A43-1	**Water Quality Based Effluent Limitations (WQBELs):** Permittees listed under "Municipality" for this TMDL (left) shall implement BMPs that will attain the applicable WLAs by the Final Compliance Deadline and maintain such attainment thereafter. **Waste Load Allocations (WLAs):** The methylmercury waste load allocations are as follows[110] : Municipality: City of Lathrop — Waste Load Allocations, Methylmercury (grams/year): 0.097

[110] From Water Quality Control Plan for the Sacramento-San Joaquin, Fourth Edition, Central Valley Regional Water Quality Control Board, June 2015. Chapter 4 (*Implementation*). Table IV-7C (*MS4 Methylmercury Waste Load Allocations for Urban Runoff within each Delta Area*). http://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/index.shtml

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	Phase II MS4 Permittees: City of Lathrop City of Lodi City of Rio Vista City of Tracy City of West Sacramento County of San Joaquin County of Yolo		

City of Lodi	0.053
City of Rio Vista	0.0078
City of Tracy	0.65
City of West Sacramento (Sacramento River subarea)	0.36
City of West Sacramento (Yolo Bypass subarea)	0.28
County of Contra Costa (Central Delta subarea)	0.75
County of Contra Costa (Marsh Creek subarea)	0.30
County of Contra Costa (West Delta subarea)	3.2
County of San Joaquin (Central Delta subarea)	0.57
County of San Joaquin (Mokelumne/Cosumnes River subarea)	0.016
County of San Joaquin (Sacramento River subarea)	0.11
County of San Joaquin (San Joaquin River subarea)	0.79
County of Yolo (Sacramento River subarea)	0.041
County of Yolo (Yolo Bypass subarea)	0.083
Port of Stockton (Central Delta subarea)	0.39
Port of Stockton (San Joaquin River subarea)	0.0036
Sacramento Area MS4 (Sacramento River subarea)	1.0
Stockton Area MS4 (Central Delta subarea)	3.6
Stockton Area MS4 (San Joaquin River subarea)	0.18

Deadline for Attainment of WLAs:
Methylmercury waste load allocations for MS4 dischargers in the Delta and Yolo Bypass shall be met as soon as possible, but no later than 31 December 2030 ("Final Compliance Deadline"), unless the Central Valley Water Board modifies the implementation schedule and final compliance date.

Provisions for Implementing the Control Program:

1. The MS4 Permittees listed above shall implement best management practices (BMPs) to control erosion and sediment discharges with the goal of reducing mercury discharges. This will be implemented through compliance with requirements in this Order.

2. Phase 1 of the Delta Mercury Control Program. The Sacramento MS4, Contra Costa County MS4, and Stockton MS4 shall implement the mercury control studies required by the Delta Mercury Control Program. The permittees shall continue to conduct mercury control studies to monitor and evaluate the effectiveness of existing BMPs and develop and evaluate additional BMPs as needed to reduce their mercury and methylmercury discharges into the Delta and Yolo Bypass. Per the Delta Mercury Control Program, by 20 October 2018, the Sacramento MS4, Contra Costa County MS4, and Stockton MS4 shall complete their control studies and submit final reports to the Central Valley Water Board. The final reports shall present the results of methylmercury control studies, options for methylmercury controls, and proposed methylmercury management plan(s) (including

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			implementation schedules) for achieving methylmercury allocations. 3. During Phase 1 of the Delta Mercury Control Program, the Phase II MS4 Permittees listed above should implement methylmercury management practices identified by the large MS4 Permittees or other management practices identified by the Delta Mercury Control Program studies that are reasonable and feasible. 4. Phase 2 of the Delta Mercury Control Program. Phase 2 begins after the Central Valley Water Board's review of Phase I of the Delta Mercury Control Program, or 20 October 2022, whichever occurs first. During Phase 2, the MS4s will implement methylmercury management plans. Within two years after the start of Phase 2, the MS4s shall submit a Mercury/Methylmercury Management Plan or revised SWMP, which describes the actions that will be taken to comply with this TMDL. The Mercury/Methylmercury Management Plan or revised SWMP shall be submitted to the Central Valley Water Board for approval. The Permittees shall implement the Mercury/Methylmercury Management Plan six months after approval. Progress toward compliance with the waste load allocations shall be documented in the Permittee's Work Plan, Mid-Term and End-Term Reports. 5. All MS4 Permittees listed above shall implement the Delta Mercury Exposure Reduction Program (see *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Chapter IV*). This requirement may be met by ongoing participation in the collective Mercury Exposure Reduction Program work plan, dated October 2013 (available at http://waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/delta_hg/hg_exposure_reduction/2013oct_merp_wrkpln.pdf). Participation can include financial contributions and in-kind services that directly support exposure reduction activities. 6. The MS4 Permittees shall document in their Mid-Term and End-Term Reports, compliance with erosion and sediment control requirements, including a discussion of effectiveness of BMPs. The Permittees shall submit a program effectiveness assessment as specified in **Part V.E.5** of the Order. 7. As specified in subsection 4, above, the MS4 Permittees shall document implementation of any methylmercury controls or best management practices in their Mid-Term and End-Term Reports. **Monitoring Provisions:** The following monitoring requirements apply during Phase 2 of the Delta Mercury Control Program. 1. The MS4 Permittees listed above shall begin monitoring methylmercury loads and concentrations in storm water discharges to assess compliance with the TMDL allocations. Within one year of the Delta Mercury Control Program review, (or 20 October 2022, whichever date occurs first), the MS4 Permittees shall submit a plan, for Executive Officer approval, describing the locations and frequency of methylmercury monitoring. The plan shall be representative of the MS4 service area. The sampling locations, frequencies, and reporting may be the same as the requirements in the

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			main permit. The Permittees shall implement the monitoring plan within six months of Executive Officer approval 2. With Executive Officer approval, the MS4 Permittees may participate in the Delta Regional Monitoring Program or other collective monitoring efforts in lieu of some or all of the individual monitoring requirements required by this section. 3. Progress toward attainment of the waste load allocations shall be documented in the Mid-Term and End-Term Reports by monitoring methylmercury loads from the MS4 or by quantifying the annual average methylmercury load reduced by implementing pollution prevention activities and source and treatment controls. The Delta Mercury Control Program (see *Water Quality Control Plan for the Sacramento River and San* Joaquin *River Basins, Chapter IV*) provides guidance for the calculation of methylmercury loading from urban areas and determination of attainment. The assessment information may come from the Permittee's monitoring efforts, monitoring programs conducted by State or federal agencies or collaborative watershed efforts, or from special studies that evaluate the effectiveness of management practices, as approved by the Executive Officer. **Demonstration of Compliance with WQBELs:** Compliance with the effluent limitations in **Part III.B** of this Order associated with applicable methylmercury ~~waste load allocation~~WLAs may be demonstrated by any one of the following methods: 1. Prior to the Final Compliance Deadline, implementation of the BMPs consistent with an approved SWMP that outlines a schedule of BMPs to reduce discharges of methylmercury that are capable of achieving compliance with applicable WLAs by the Final Compliance Deadline. ~~1.~~2. Receiving water monitoring and/or other information, as authorized by the Executive Officer, that reasonably demonstrates attainment of applicable WLAs ~~by the Final Compliance Deadline~~. ~~2.~~3. Attainment of applicable WLAs within the discharge. ~~by the Final Compliance Deadline~~ 4. ~~Permanent cessation of~~No discharges from the Permittee's MS4 to Applicable Water Bodies ~~by the Final Compliance Deadline~~. 5. After the Final Compliance Deadline, timely implementation of a Central Valley Water Board-approved compliance schedule for meeting applicable methylmercury WLAs.
Clear Lake TMDL *Nutrients*	County of Lake City of	Clear Lake	**Water Quality Based Effluent Limitations (WQBELs):** Permittees listed under "Municipality" for this TMDL (left) shall implement BMPs that will attain the applicable WLAs by the Final Compliance Deadline and maintain such attainment thereafter.

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Effective Date: 21 September 2007 BPA: Chapter IV-37.04 Resolution No.: R5-2006-0060	Clearlake City of Lakeport		**Waste Load Allocations (WLAs):** County of Lake, City of Clearlake and City of Lakeport combined 2,000 kg phosphorus/yr, as an average annual load (five year rolling average). **Deadline for Attainment of WLAs:** 19 June 2017 ("Final Compliance Deadline") **Provisions for Implementing the Control Program:** 1. The MS4 Permittees identified in the column to the left to which the Central Valley Water Board has issued NOAs shall implement best management practices (BMPs) to control erosion and sediment discharges as a means of controlling phosphorous in compliance with the WQBEL. These will be implemented through compliance with requirements in this Order. 2. The MS4 Permittees shall document implementation of erosion and sediment BMPs in their Mid-Term and End-Term Reports as specified in this Order. 3. The Permittees shall complete and submit program effectiveness assessments in their Mid-Term and End-Term Reports as specified in **Part V.E.5** of this Order that include assessment of the effectiveness of the BMPs to control erosion and sediment discharges. 4. The Permittees shall use the information gained from the program effectiveness assessments to improve their SWMPs and identify new BMPs or modifications of existing BMPs. **Monitoring Provisions:** 1a. As part of the development of the SWMP, the Permittees shall submit, individually or collectively, a monitoring and reporting plan. ~~Within six months of NOA issuance, each Permittee shall submit individual monitoring and reporting plans or the Permittees can collectively submit a single monitoring plan, for Executive Officer approval.~~ The monitoring plan shall enable the Central Valley Water Board to evaluate the MS4 Permittee's progress toward attainment of the waste load allocation. The monitoring locations shall be representative of the respective MS4 service area. 1b. With Executive Officer approval, the MS4 Permittees may participate in a regional monitoring program or other collective monitoring efforts in lieu of some or all of the individual monitoring requirements required by this section. 2. Permittees shall document progress toward attainment of the waste load allocations in their Mid-Term and End-Term Reports. 3. MS4 Permittees may work with Central Valley Water Board staff to estimate nutrient loadings from activities in the watershed. Loading estimates can be conducted using either water quality

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			monitoring or computer modeling or a combination of the two. **Demonstration of Compliance with WQBELs** Compliance with the effluent limitations in **Part III.B** of this Order associated with the applicable phosphorus ~~waste load allocations~~WLAs may be demonstrated by any one of the following methods: 1. Receiving water monitoring and/or other information, as authorized by the Executive Officer, that reasonably demonstrates attainment of applicable WLAs ~~by the Final Compliance Deadline~~. ~~1.~~2. Attainment of WLAs within the discharge. 3. ~~Permanent cessation of~~No discharges from the Permittee's MS4 to the Applicable Water Body. 4. After the Final Compliance Deadline, timely implementation of a Central Valley Water Board-approved compliance schedule for meeting applicable phosphorus WLAs.
Sacramento County Urban Creeks *Diazinon & Chlorpyrifos* Effective Date: 20 December 2004 Resolution No.: R5-2004-0109	County of Sacramento and Cities of Citrus Heights, Elk Grove, Rancho Cordova and Sacramento	Arcade Creek, Elder Creek, Elk Grove Creek, Morrison Creek, Chicken Ranch Slough, Strong Ranch Slough	**Water Quality Based Effluent Limitations (WQBELs):** Permittees listed under "Municipality" for this TMDL (left) shall implement BMPs that will attain and maintain the applicable WLAs. **Waste Load Allocations (WLAs):** The waste load allocations for NPDES permitted municipal storm water Permittees shall not exceed the sum (S) of one (1) as defined below: $$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$ where CD = diazinon concentration in ug/L of point source discharge CC = chlorpyrifos concentration in ug/L of point source discharge WQOD = acute or chronic diazinon water quality criterion (0.080 and 0.050 ug/L, respectively) WQOC = acute or chronic chlorpyrifos water quality criterion (0.020 and 0.014 ug/L, respectively) For the purpose of calculating the sum (S) above, non-detectable concentrations are considered to be zero. In determining compliance with permit requirements related to attainment of these waste load allocations, the Central Valley Water Board will consider data or information submitted by the Permittee regarding diazinon and chlorpyrifos inputs from sources that are outside of the jurisdiction of the permitted discharge, and any applicable provisions in the Permittee's NPDES permit requiring the

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			Permittee to reduce the discharge of pollutants to the maximum extent practicable. ~~**Deadline for Attainment of WLAs:**~~ ~~2 December 2007 ("Final Compliance Deadline")~~ **Provisions for Monitoring and Implementing the Control Program:** 1.a. Conduct an assessment: Within one year of receipt of the NOA for this permit, Permittees shall complete and submit to the Executive Officer an assessment to, at a minimum: determine the diazinon and chlorpyrifos levels and attainment of waste load allocations in urban discharge; evaluate attainment of established water quality objectives applicable to diazinon and chlorpyrifos for the receiving water. Assessment monitoring may be done in coordination or conjunction with other municipalities and/or Permittees. Permittees listed in this Attachment G for this are responsible for providing the assessment and necessary information related to the assessment to the Executive Officer for review and approval. The assessment information may come from the Permittee's monitoring efforts; monitoring programs conducted by State or federal agencies or collaborative watershed efforts; or from special studies that evaluate the effectiveness of management practices. 1.b. With Executive Officer approval, the MS4 Permittees may participate in the Delta Regional Monitoring Program or other collective monitoring efforts in lieu of some or all of the individual monitoring requirements required by this section. 2. SWMP Pesticide Management Plans: Unless Permittees can demonstrate attainment of the waste load allocations, permittees shall include in their SWMP a description of actions that will be taken to reduce diazinon and chlorpyrifos discharges to meet the applicable allocations. SWMP provisions addressing diazinon and chlorpyrifos can be included in pesticide management plans covering current use pesticides with the goal of reducing the discharge of pesticides from municipal storm water to receiving water. Pesticide management plans shall address the Permittee's own use of pesticides, and to the extent authorized by law, the use of such pesticides by other sources within their jurisdictions. Pesticide management plans shall include identifying and promoting, within the context of IPM programs, the use of pest management practices that minimize the risk of pesticide impacts on surface water quality resulting from urban runoff discharges. Additionally, the plan shall include the integration of IPM into the Permittee's municipal operations and be promoted to residents, businesses, and public agencies within each Permittee's jurisdiction through public outreach. The Executive Officer may require revisions to the SWMPs if the waste load allocations are not attained

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			or the SWMP is not likely to attain the waste load allocations. SWMP pesticide management plans may refer to actions required by other agencies or actions required elsewhere in this permit. SWMP pesticide management plans may include actions to reduce MS4 pesticide discharges through participation or support of a regional or statewide pesticide reduction programs. To receive credit toward compliance for such participation, the MS4 Permittees must demonstrate that they have participated in the implementation of the program (i.e., contributing materially and in proportion in the size of a MS4 Permittee's service area, including, but not limited to, implementation of reduction program measures, membership, contribution of resources, etc.). Examples of programs that could be eligible include Our Water Our World (outreach), a recognized regional monitoring program, and CASQA's pesticide regulatory initiative. **Demonstration of Compliance with WQBELs** Compliance with the effluent limitations in **Part III.B** of this Order associated with the applicable diazinon and chlorpyrifos ~~waste load allocation~~WLAs may be demonstrated by any one of the following methods: 1. Submission of receiving water monitoring and/or other information, as authorized by the Executive Officer, that reasonably demonstrates attainment of the WLA. 2. Attainment of the WLA within the discharge (monitoring representative of the MS4 discharge may be used with Executive Officer approval). **3.** ~~Permanent cessation of~~No discharges from the Permittee's MS4 to the Applicable Water Bodies. ~~3.~~4. Timely implementation of a Central Valley Water Board-approved compliance schedule for meeting applicable diazinon and chlorpyrifos WLAs.
Lower San Joaquin River *Diazinon & Chlorpyrifos* Effective Date: 20 December, 2006	San Joaquin County City of Patterson	San Joaquin River from Mendota Dam to Vernalis	**Water Quality Based Effluent Limitations (WQBELs):** Permittees listed under "Municipality" for this TMDL (left) shall implement BMPs that will attain and maintain applicable WLAs. **Waste Load Allocations (WLAs):** The waste load allocations for NPDES permitted municipal storm water Permittees shall not exceed the sum (S) of one (1) as defined below:

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BPA: Chapter 3 Resolution No.: R5-2005-0138			$$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$ where CD = diazinon concentration in ug/L of point source discharge CC = chlorpyrifos concentration in ug/L of point source discharge WQOD = acute or chronic diazinon water quality objective (0.160 and 0.100 ug/L, respectively) WQOC = acute or chronic chlorpyrifos water quality objective. (0.025 and 0.015 ug/L, respectively) For the purpose of calculating the sum (S) above, non-detectable concentrations are considered to be zero. In determining compliance with permit requirements related to attainment of these waste load allocations, the Central Valley Water Board will consider data or information submitted by the Permittee regarding diazinon and chlorpyrifos inputs from sources that are outside of the jurisdiction of the permitted discharge, and any applicable provisions in the Permittee's NPDES permit requiring the Permittee to reduce the discharge of pollutants to the maximum extent practicable. **Deadline for Attainment of WLAs:** 01 December 2010 ("Final Compliance Deadline") **Provisions for Monitoring and Implementing the Control Program:** 1.a. Conduct an assessment: Within one year of receipt of the NOA for this permit, permittees shall complete and submit to the Executive Officer an assessment to, at a minimum: determine the diazinon and chlorpyrifos levels and attainment of waste load allocations in urban discharge; evaluate attainment of established water quality objectives applicable to diazinon and chlorpyrifos for the receiving water~~; determine whether alternatives to diazinon and chlorpyrifos are causing surface water quality impacts; and determine whether toxicity impairment is being caused or contributed to due to synergistic effects of multiple pollutants. The Central Valley Water Board, in coordination with the Department of Pesticide Regulation (DPR), will assist the Permittees in identifying applicable diazinon and chlorpyrifos alternatives for purposes of this assessment~~. Assessment monitoring may be done in coordination or conjunction with other municipalities and/or Permittees. Permittees listed in Attachment G for this TMDL are responsible for providing the assessment and necessary information related to the assessment to the Executive Officer for review and approval. The assessment information may come from the Permittee's monitoring efforts; monitoring programs conducted by State or federal agencies or collaborative watershed efforts; or from special studies that evaluate the effectiveness of management practices.

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			1.b. With Executive Officer approval, the MS4 Permittees may participate in the Delta Regional Monitoring Program or other collective monitoring efforts in lieu of some or all of the individual monitoring requirements required by this section. 2. SWMP Pesticide Management Plans: Unless Permittees can demonstrate attainment of the waste load allocations, permittees shall include in their SWMP a description of actions that will be taken to reduce diazinon and chlorpyrifos discharges to meet the applicable allocations. SWMP provisions addressing diazinon and chlorpyrifos can be included in pesticide management plans covering current use pesticides with the goal of reducing the discharge of pesticides from municipal storm water to receiving water. Pesticide management plans shall address the Permittee's own use of pesticides, and to the extent authorized by law, the use of such pesticides by other sources within their jurisdictions. Pesticide management plans shall include identifying and promoting, within the context of IPM programs, the use of pest management practices that minimize the risk of pesticide impacts on surface water quality resulting from urban runoff discharges. Additionally, the plan shall include the integration of IPM into the Permittee's municipal operations and be promoted to residents, businesses, and public agencies within each Permittee's jurisdiction through public outreach. The Executive Officer may require revisions to the management plans if the waste load allocations are not attained or the SWMP is not likely to attain the waste load allocations. SWMP pesticide management plans may refer to actions required by other agencies or actions required elsewhere in this permit. SWMP pesticide management plans for pesticides may include actions to reduce MS4 pesticide discharges through participation or support of a regional or statewide pesticide reduction program. To receive credit toward compliance for such participation, the MS4 Permittees must demonstrate that they have participated in the implementation of the program (i.e., contributing materially and in proportion in the size of a MS4 Permittee's service area, including, but not limited to, implementation of reduction program measures, membership, contribution of resources, etc.). Examples of programs that could be eligible include Our Water Our World (outreach), a recognized regional monitoring program, and California Stormwater Quality Association's (CASQA) pesticide regulatory initiative. In developing the monitoring and reporting programs for Permittees, the Central Valley Water Board will, in coordination with the DPR, assist the Permittee in identifying diazinon and chlorpyrifos alternatives for which monitoring may be necessary. **Demonstration of Compliance with WQBELs** Compliance with the effluent limitations in **Part III.B** of this Order associated with the applicable diazinon and chlorpyrifos ~~waste load allocation~~WLAs may be demonstrated by any one of the following

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			methods: 1. Submission of receiving water monitoring and/or other information, as authorized by the Executive Officer, that reasonably demonstrates attainment of applicable WLAs. . 2. Attainment of applicable WLAs within the discharge. **3.** ~~Permanent cessation of~~No discharges from the Permittee's MS4 to the Applicable Water Bodies. ~~3.~~4. Timely implementation of a Central Valley Water Board-approved compliance schedule for meeting applicable diazinon and chlorpyrifos WLAs.
Sacramento and San Joaquin Delta Diazinon & Chlorpyrifos Effective Date: 10 October 2006 BPA: Chapter 31 Resolution No.: R5-2006-0061	Phase I MS4s: City of Sacramento County of Sacramento City of Stockton County of San Joaquin Port of Stockton East Contra Costa County MS4's: City of Antioch City of Brentwood City of Oakley Contra Costa County Contra Costa County Flood Control and Water Conservation District Phase II MS4s: City of Lathrop City of Rio Vista	Sacramento-San Joaquin Delta Waterways (As Identified in Basin Plan Appendix 42)	**Water Quality Based Effluent Limitations (WQBELs):** Permittees listed under "Municipality" for this TMDL (left) shall implement BMPs that will attain and maintain applicable WLAs. **Waste Load Allocations (WLAs):** The waste load allocations for NPDES permitted municipal storm water Permittees shall not exceed the sum (S) of one (1) as defined below: $$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$ where CD = diazinon concentration in ug/L of point source discharge CC = chlorpyrifos concentration in ug/L of point source discharge WQOD = acute or chronic diazinon water quality objective (0.160 and 0.100 ug/L, respectively) WQOC = acute or chronic chlorpyrifos water quality objective. (0.025 and 0.015 ug/L, respectively) For the purpose of calculating the sum (S) above, non-detectable concentrations are considered to be zero. In determining compliance with permit requirements related to attainment of these waste load allocations, the Central Valley Water Board will consider data or information submitted by the Permittee regarding diazinon and chlorpyrifos inputs from sources that are outside of the jurisdiction of the permitted discharge, and any applicable provisions in the Permittee's NPDES permit requiring the Permittee to reduce the discharge of pollutants to the maximum extent practicable.

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	City of Tracy City of Lodi City of Manteca City of West Sacramento		**Deadline for Attainment of WLAs:** 01 December 2011 ("Final Compliance Deadline") **Provisions for Monitoring and Implementing the Control Program:** 1.a. Conduct an assessment: Within one year of receipt of the NOA for this permit, Permittees shall complete and submit to the Executive Officer an assessment to, at a minimum: determine the diazinon and chlorpyrifos levels and attainment of waste load allocations in urban discharge; evaluate attainment of established water quality objectives applicable to diazinon and chlorpyrifos for the receiving water~~; determine whether alternatives to diazinon and chlorpyrifos are causing surface water quality impacts; and determine whether toxicity impairment is being caused or contributed to due to synergistic effects of multiple pollutants. The Central Valley Water Board, in coordination with DPR, will assist the Permittees in identifying applicable diazinon and chlorpyrifos alternatives for purposes of this assessment~~. Assessment monitoring may be done in coordination or conjunction with other municipalities and/or Permittees. Permittees listed in this Attachment G for this are responsible for providing the assessment and necessary information related to the assessment to the Executive Officer for review and approval. The assessment information may come from the Permittee's monitoring efforts; monitoring programs conducted by State or federal agencies or collaborative watershed efforts; or from special studies that evaluate the effectiveness of management practices. 1.b. With Executive Officer approval, the MS4 Permittees may participate in the Delta Regional Monitoring Program or other collective monitoring efforts in lieu of some or all of the individual monitoring requirements required by this section. 2. SWMP Pesticide Management Plans: Unless Permittees can demonstrate attainment of the waste load allocations, permittees shall include in their SWMP a description of actions that will be taken to reduce diazinon and chlorpyrifos discharges to meet the applicable allocations. SWMP provisions addressing diazinon and chlorpyrifos can be included in pesticide management plans covering current use pesticides with the goal of reducing the discharge of pesticides from municipal storm water to receiving water. SWMP pesticide management plans shall address the Permittee's own use of pesticides, and to the extent authorized by law, the use of such pesticides by other sources within their jurisdictions. Pesticide management plans shall include identifying and promoting, within the context of IPM programs, the use of pest management practices that minimize the risk of pesticide impacts on surface water quality

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			resulting from urban runoff discharges. Additionally, the plan shall include the integration of IPM into the Permittee's municipal operations and be promoted to residents, businesses, and public agencies within each Permittee's jurisdiction through public outreach. The Executive Officer may require revisions to the SWMP if the waste load allocations are not attained or the SWMP is not likely to attain the waste load allocations. SWMP pesticide management plans may refer to actions required by other agencies or actions required elsewhere in this permit. SWMP pesticide management plans may include actions to reduce MS4 pesticide discharges through participation or support of a regional or statewide pesticide reduction programs. To receive credit toward compliance for such participation, the MS4 Permittees must demonstrate that they have participated in the implementation of the program (i.e., contributing materially and in proportion in the size of a MS4 Permittee's service area, including, but not limited to, implementation of reduction program measures, membership, contribution of resources, etc.). Examples of programs that could be eligible include Our Water Our World (outreach), a recognized regional monitoring program, and CASQA's pesticide regulatory initiative. In developing the monitoring and reporting programs for specific Permittees, the Central Valley Water Board will, in coordination with DPR, assist the Permittee in identifying diazinon and chlorpyrifos alternatives for which monitoring may be necessary. **Demonstration of Compliance with WQBELs** Compliance with the effluent limitations in **Part III.B** of this Order associated with applicable diazinon and chlorpyrifos ~~waste load allocation~~WLAs may be demonstrated by any one of the following methods: 1. Submission of receiving water monitoring and/or other information, as authorized by the Executive Officer, that reasonably demonstrates attainment of applicable WLAs. 2. Attainment of applicable WLAs within the discharge. 3. ~~Permanent cessation of~~No discharges from the Permittee's MS4 to the Applicable Water Bodies. ~~3.~~4. Timely implementation of a Central Valley Water Board-approved compliance schedule for meeting applicable diazinon and chlorpyrifos WLAs.
	Phase I MS4s: City of Sacramento County of Sacramento		**Water Quality Based Effluent Limitations (WQBELs):** Permittees listed under "Municipality" for this TMDL (left) shall implement BMPs that will attain and maintain applicable WLAs.

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Sacramento and Feather Rivers *Diazinon & Chlorpyrifos* Effective Date: 3 May 2007 BPA: Attachment 1 Resolution No.: R5-2007-0034	Phase II MS4s: City of Anderson City of Marysville Olivehurst CDP City of Red Bluff City of Yuba City County of Colusa County of Shasta County of Sutter Linda CDP City of Redding County of Yuba	Sacramento River from Shasta Dam to I Street Bridge Feather River from Fish Barrier Dam to Sacramento River	**Waste Load Allocations (WLAs):** The waste load allocations for NPDES permitted municipal storm water Permittees shall not exceed the sum (S) of one (1) as defined below: $$S = \frac{C_D}{WQO_D} + \frac{C_C}{WQO_C} \leq 1.0$$ where CD = diazinon concentration in ug/L of point source discharge CC = chlorpyrifos concentration in ug/L of point source discharge WQOD = acute or chronic diazinon water quality objective (0.160 and 0.100 ug/L, respectively) WQOC = acute or chronic chlorpyrifos water quality objective. (0.025 and 0.015 ug/L, respectively) For the purpose of calculating the sum (S) above, non-detectable concentrations are considered to be zero. In determining compliance with permit requirements related to attainment of these waste load allocations, the Central Valley Water Board will consider data or information submitted by the Permittee regarding diazinon and chlorpyrifos inputs from sources that are outside of the jurisdiction of the permitted discharge, and any applicable provisions in the Permittee's NPDES permit requiring the Permittee to reduce the discharge of pollutants to the maximum extent practicable. **Deadline for Attainment of WLAs:** 01 December 2011 ("Final Compliance Deadline") **Provisions for Monitoring and Implementing the Control Program:** 1.a. Conduct an assessment: Within one year of receipt of the NOA for this permit, permittees shall complete and submit to the Executive Officer an assessment to, at a minimum: determine the diazinon and chlorpyrifos levels and attainment of waste load allocations in urban discharge; evaluate attainment of established water quality objectives applicable to diazinon and chlorpyrifos for the receiving water~~; determine whether alternatives to diazinon and chlorpyrifos are causing surface water quality impacts; and determine whether toxicity impairment is being caused or contributed to due to synergistic effects of multiple pollutants. The Central Valley Water Board, in coordination with the Department of Pesticide Regulation (DPR), will assist the Permittees in identifying applicable diazinon and chlorpyrifos alternatives for purposes of this assessment~~. Assessment monitoring may be done in co coordination or conjunction with other municipalities and/or Permittees. Permittees listed in Attachment G for this TMDL are responsible for providing the assessment and necessary information related to the assessment to the Executive Officer for review and approval. The assessment information

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			may come from the Permittee's monitoring efforts; monitoring programs conducted by State or federal agencies or collaborative watershed efforts; or from special studies that evaluate the effectiveness of management practices. 1.b. With Executive Officer approval, the MS4 Permittees may participate in the Delta Regional Monitoring Program or other collective monitoring efforts in lieu of some or all of the individual monitoring requirements required by this section. 2. SWMP Pesticide Management Plans: Unless Permittees can demonstrate attainment of the waste load allocations, permittees shall include in their SWMP a description of actions that will be taken to reduce diazinon and chlorpyrifos discharges to meet the applicable allocations. SWMP provisions addressing diazinon and chlorpyrifos can be included in pesticide management plans covering current use pesticides with the goal of reducing the discharge of pesticides from municipal storm water to receiving water. SWMP pesticide management plans shall address the Permittee's own use of pesticides, and to the extent authorized by law, the use of such pesticides by other sources within their jurisdictions. Pesticide management plans shall include identifying and promoting, within the context of IPM programs, the use of pest management practices that minimize the risk of pesticide impacts on surface water quality resulting from urban runoff discharges. Additionally, the plan shall include the integration of IPM into the Permittee's municipal operations and be promoted to residents, businesses, and public agencies within each Permittee's jurisdiction through public outreach. The Executive Officer may require revisions to the management plans if the ~~-~~waste load allocations are not attained or the SWMP is not likely to attain the waste load allocations. SWMP pesticide management plans may refer to actions required by other agencies or actions required elsewhere in this permit. SWMP pesticide management plans may include actions to reduce MS4 pesticide discharges through participation or support of a regional or statewide pesticide reduction program. To receive credit toward compliance for such participation, the MS4 Permittees must demonstrate that they have participated in the implementation of the program (i.e., contributing materially and in proportion in the size of a MS4 Permittee's service area, including, but not limited to, implementation of reduction program measures, membership, contribution of resources, etc.). Examples of programs that could be eligible include Our Water Our World (outreach), a recognized regional monitoring program, and California Stormwater Quality Association's (CASQA) pesticide regulatory initiative. In developing the monitoring and reporting programs for Permittees, the Central Valley Water Board will, in coordination with the DPR, assist the Permittee in identifying diazinon and chlorpyrifos alternatives for which monitoring may be necessary.

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			Demonstration of Compliance with WQBELs Compliance with the effluent limitations in **Part III.B** of this Order associated with applicable diazinon and chlorpyrifos ~~waste load allocation~~WLAs may be demonstrated by any one of the following methods: 1. Submission of receiving water monitoring and/or other information, as authorized by the Executive Officer, that reasonably demonstrates attainment of applicable WLAs. 2. Attainment of applicable WLAs within the discharge. 3. ~~Permanent cessation of~~No discharges from the Permittee's MS4 to the Applicable Water Bodies. 4. Timely implementation of a Central Valley Water Board-approved compliance schedule for meeting applicable diazinon and chlorpyrifos WLAs.

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ATTACHMENT H – STANDARD PERMIT PROVISIONS AND GENERAL PROVISIONS H

A. Standard Permit Provisions

Code of Federal Regulations Title 40 section 122.41 (40 CFR 122.41) includes conditions, or provisions, that apply to all National Pollution Discharge Elimination System (NPDES) permits. Additional provisions applicable to NPDES permits are in 40 CFR 122.42. All applicable provisions in 40 CFR 122.41 and 40 CFR 122.42 shall be incorporated into this Order and NPDES permit. The applicable 40 CFR 122.41 and 40 CFR 122.42 provisions are as follows:

1. Duty to Comply [CFR 122.41(a)]

The Permittee shall comply with all of the provisions of this permit. Any permit noncompliance constitutes a violation of the Clean Water Act (CWA) and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification; or denial of a permit renewal application.

a. The Permittee shall comply with effluent standards or prohibitions established under section 307(a) of the CWA for toxic pollutants and with standards for sewage sludge use or disposal established under Section 405(d) of the CWA within the time provided in the regulations that establish these standards or prohibitions or standards for sewage sludge use or disposal, even if the permit has not yet been modified to incorporate the requirement. [40 CFR 122.41(a)(1); California Water Code (Water Code) sections 13261, 13263, 13265, 13268, 13300, 13301, 13304, 13340, 13350, 13385)]

b. The CWA provides that any person who violates Section 301, 302, 306, 307, 308, 318 or 405 of the CWA, or any permit condition or limitation implementing any such sections in a permit issued under section 402, or any requirement imposed in a pretreatment program approved under Section 402(a)(3) or 402(b)(8) of the CWA, is subject to a civil penalty not to exceed $25,000 per day for each violation. The CWA provides that any person who *negligently* violates Section 301, 302, 306, 307, 308, 318, or 405 of the CWA, or any condition or limitation implementing any of such sections in a permit issued under Section 402 of the CWA, or any requirement imposed in a pretreatment program approved under Section 402(a)(3) or 402(b)(8) of the CWA, is subject to criminal penalties of $2,500 to $25,000 per day of violation, or imprisonment of not more than 1 (1) year, or both. In the case of a second or subsequent conviction for a negligent violation, a person shall be subject to criminal penalties of not more than $50,000 per day of violation, or by imprisonment of not more than two (2) years, or both. Any person who *knowingly* violates such sections, or such conditions or limitations is subject to criminal penalties of $5,000 to $50,000 per day of violation, or imprisonment for not more than three (3) years, or both. In the case of a second or subsequent conviction for a knowing violation, a person shall be subject to criminal penalties of not more than $100,000 per day of violation, or imprisonment of not more than six (6) years, or both. Any person who knowingly violates Section 301, 302, 303, 306, 307, 308, 318 or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under

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Section 402 of the CWA, and who knows at that time that he thereby places another person in imminent danger of death or serious bodily injury, shall, upon conviction, be subject to a fine of not more than $250,000 or imprisonment of not more than fifteen (15) years, or both. In the case of a second or subsequent conviction for a knowing endangerment violation, a person shall be subject to a fine of not more than $500,000 or by imprisonment of not more than thirty (30) years, or both. An organization, as defined in Section 309(c)(3)(B)(iii) of the CWA, shall, upon conviction of violating the imminent danger provision, be subject to a fine of not more than $1,000,000 and can be fined up to $2,000,000 for second or subsequent convictions. [40 CFR 122.41(a)(2)].

c. Any person may be assessed an administrative penalty by the Central Valley Regional Water Quality Control Board (Central Valley Water Board), State Water Resources Control Board (State Water Board), or United States Environmental Protection Agency (USEPA) for violating Section 301, 302, 306, 307, 308, 318 or 405 of the CWA, or any permit condition or limitation implementing any of such sections in a permit issued under section 402 of this Act. Administrative penalties for Class I violations are not to exceed $10,000 per violation, with the maximum amount of any Class I penalty assessed not to exceed $25,000. Penalties for Class II violations are not to exceed $10,000 per day for each day during which the violation continues, with the maximum amount of any Class II penalty not to exceed $125,000. [40 CFR 122.41(a)(3)].

2. Duty to Reapply [40 CFR 122.41(b)]

If the Permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the Permittee shall apply for and obtain a new permit.

3. **Need to Halt or Reduce Activity Not A Defense [40 CFR 122.41(c)]**

It shall not be a defense for a Permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

4. **Duty to Mitigate [40 CFR 122.41(d)]**

The Permittee shall take all reasonable steps to minimize or prevent any discharge or prevent any discharge or sludge use or disposal in violation of this permit that has a reasonable likelihood of adversely affecting human health or the environment.

5. **Proper Operation and Maintenance [40 CFR 122.41(e)]**

The Permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the Permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance also includes adequate laboratory controls and appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems that are installed by a Permittee only when the operation is necessary to achieve compliance with the conditions of this permit.

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6. **Permit Actions [40 CFR 122.41(f)]**

   This permit may be modified, revoked and reissued, or terminated for cause. The filing of a request by the Permittee for a permit modification, revocation and reissuance, or termination, or a notification of planned changes or anticipated noncompliance does not stay any permit condition.

7. **Property Rights [40 CFR 122.41(g)]**

   This permit does not convey any property rights of any sort, or any exclusive privilege.

8. **Duty to Provide Information [40 CFR 122.41(h)]**

   Permittee shall furnish to the Central Valley Water Board, State Water Board, or USEPA within a reasonable time, any information which the Central Valley Water Board, State Water Board, or USEPA may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit or to determine compliance with this permit. The Permittee shall also furnish to the Central Valley Water Board, State Water Board, or USEPA upon request, copies of records required to be kept by this permit.

9. **Inspection and Entry [40 CFR 122.41(i)]**

   The Permittee shall allow the Central Valley Water Board, State Water Board, USEPA, and/or their authorized representative (including an authorized contractor acting as their representative), upon presentation of credentials and other documents as may be required by law, to [33 United States Code section 1318(a)(4)(B); 40 CFR 122.41(i); California Water Code sections 13267 and 13383]:

   a. Enter upon the Permittee's premises where a regulated facility or activity is located or conducted, or where records shall be kept under the conditions of this permit; [40 CFR 122.41(i)(1)]

   b. Have access to and copy, at reasonable times, any records that shall be kept under the conditions of this permit; [40 CFR 122.41(i)(2)]

   c. Inspect and photograph at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; [40 CFR 122.41(i)(3)] and

   d. Sample or monitor at reasonable times, for the purpose of assuring permit compliance or as otherwise authorized by the CWA, any substances or parameters at any location. [40 CFR 122.41(i)(4)]

10. **Monitoring and Records [40 CFR 122.41(j); 40 CFR 122.44(i)]**

    a. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. [40 CFR 122.41(j)(1)]

    b. Except for records of monitoring information required by this permit related to the Permittee's sewage sludge use and disposal activities, which shall be retained for a

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period of at least five (5) years (or longer as required by 40 CFR Part 503), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least three (3) years from the date of the sample, measurement, report or application. This period may be extended by request of the Central Valley Water Board at any time. [40 CFR 122.41(j)(2)]

c. Records for monitoring information shall include: [40 CFR 122.41(j)(3)]

   i. The date, exact place, and time of sampling or measurements; [40 CFR 122.41(j)(3)(i)]

   ii. The individual(s) who performed the sampling or measurements; [40 CFR 122.41(j)(3)(ii)]

   iii. The date(s) analyses were performed; [40 CFR 122.41(j)(3)(iii)]

   iv. The individual(s) who performed the analyses; [40 CFR 122.41(j)(3)(iv)]

   v. The analytical techniques or methods used; [40 CFR 122.41(j)(3)(v)] and

   vi. The results of such analyses. [40 CFR 122.41(j)(3)(vi)]

d. Monitoring shall be conducted according to test procedures under 40 CFR Part 136 unless another method is required under 40 CFR Subchapters N or O. [40 CFR 122.41(j)(4)]

   In the case of pollutants for which there are no approved methods under 40 CFR Part 136 or otherwise required under 40 CFR Subchapters N and O, monitoring shall be conducted according to a test procedure specified in the permit for such pollutants. [40 CFR 122.44(i)(1)(iv)]

e. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this permit shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than two (2) years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by imprisonment of not more than four (4) years, or both. [40 CFR 122.41(j)(5)]

11. Signatory Requirement [40 CFR 122.41(k); 40 CFR 122.22(a)-(d)]

a. All applications, reports, or information submitted to the Central Valley Water Board, State Water Board, or USEPA shall be signed and certified. (See 40 CFR 122.22) [40 CFR 122.41(k)(1)]

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i. For a municipality, State, Federal, or other public agency. [All applications shall be signed] [b]y either a principal executive officer or ranking elected official. [40 CFR 122.22(a)(3)]

ii. All reports required by permits, and other information requested by the Central Valley Water Board, State Water Board, or USEPA shall be signed by a person described in paragraph (a) of this section, or by a duly authorized representative of that person. A person is a duly authorized representative only if: [40 CFR 122.22(b)]

(1) The authorization is made in writing by a person described in paragraph (a) of this section; [40 CFR 122.22(b)(1)]

(2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity such as the position of plant manager, operator of a well or a well field, superintendent, position of equivalent responsibility, or an individual or position having overall responsibility for environmental matters for the company, (A duly authorized representative may thus be either a named individual or any individual occupying a named position.) [40 CFR 122.22(b)(2)] and,

(3) The written authorization is submitted to the Central Valley Water Board and State Water Board. [40 CFR 122.22(b)(3)].

iii. Changes to authorization. If an authorization under paragraph (b) of this section is no longer accurate because a different individual or position has responsibility for the overall operation of the facility, a new authorization satisfying the requirements of paragraph (b) of this section shall be submitted to the Central Valley Water Board prior to or together with any reports, information, or applications to be signed by an authorized representative. [40 CFR 122.22(c)]

iv. Certification. Any person signing a document under paragraph (a) or (b) of this section shall make the following certification:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations." [40 CFR 122.22(d)]

b. The CWA provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not

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more than $10,000 per violation, or by imprisonment for not more than six (6) months per violation, or by both. [40 CFR 122.41(k)(2)]

12. Reporting Requirements [40 CFR 122.41(l)]

a. Planned changes. The Permittee shall give notice to the Central Valley Water Board as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when: [40 CFR 122.41(l)(1)]

   i. The alteration or addition to a permitted facility may meet one of the criteria for determining whether a facility is a new source in 40 CFR 122.29(b); [40 CFR 122.41(l)(1)(i)] or

   ii. The alteration or addition could significantly change the nature or increase the quantity of pollutants discharged. This notification applies to pollutants which are subject neither to effluent limitations in the permit, nor to notification requirements under 40 CFR 122.42(a)(1). [40 CFR 122.41(l)(1)(ii)]

   iii. The alteration or addition results in a significant change in the Permittee's sludge use or disposal practices, and such alteration, addition, or change may justify the application of permit conditions that are different from or absent in the existing permit, including notification of additional use or disposal sites not reported during the permit application process or not reported pursuant to an approved land application plan. [40 CFR 122.41(l)(1)(iii)]

b. Anticipated noncompliance. The Permittee shall give advance notice to the Central Valley Water Board of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements. [40 CFR 122.41(l)(2)]

c. Transfers. This permit is not transferable to any person except after notice to the Central Valley Water Board. The Central Valley Water Board may require modification or revocation and reissuance of the permit to change the name of the Permittee and incorporate such other requirements as may be necessary under the CWA. [40 CFR 122.41(l)(3)]

d. Monitoring reports. Monitoring results shall be reported at the intervals specified elsewhere in this permit. [40 CFR 122.41(l)(4)]

   i. Monitoring results shall be reported as specified by the Central Valley Water Board or State Water Board for reporting results of monitoring of sludge use or disposal practices. [40 CFR 122.41(l)(4)(i)]

   ii. If the Permittee monitors any pollutant more frequently than required by the permit using test procedures approved under 40 CFR Part 136 or another method required for an industry-specific waste stream under 40 CFR Subchapters N or O, the results of this monitoring shall be included in the calculation and reporting of the data submitted to the Central Valley Water Board or State Water Board. [40 CFR 122.41(l)(4)(ii)]

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iii. Calculations for all limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in the permit. [40 CFR 122.41(l)(4)(iii)]

e. Compliance schedules. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than fourteen (14) days following each schedule date. [40 CFR 122.41(l)(5)]

f. Twenty-four hour reporting.

i. The Permittee shall report any noncompliance that may endanger health or the environment. Any information shall be provided orally within twenty-four (24) hours from the time the Permittee becomes aware of the circumstances. A written submission shall also be provided within five (5) days of the time the Permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance. [40 CFR 122.41(l)(6)(i)]

ii. The following shall be included as information which shall be reported within twenty-four (24) hours under this paragraph: [40 CFR 122.41(l)(6)(ii)]

(1) Any unanticipated bypass that exceeds any effluent limitation in the permit (See 40 CFR 122.41(g)). [40 CFR 122.41(l)(6)(ii)(A)]

(2) Any upset which exceeds any effluent limitation in the permit. [40 CFR 122.41(l)(6)(ii)(B)] and,

(3) Violation of a maximum daily discharge limitation for any of the pollutants listed by the Central Valley Water Board in the permit to be reported within twenty-four (24) hours. (See 40 CFR 122.44(g)) [40 CFR 122.41(l)(6)(ii)(C)]

iii. The Central Valley Water Board may waive the written report on a case-by-case basis if the oral report has been received within twenty-four (24) hours. [40 CFR 122.41(l)(6)(iii)]

g. Other noncompliance. The Permittee shall report all instances of noncompliance not reported in accordance with the standard provisions required under 40 CFR 122.41(l)(4), (5), and (6), at the time monitoring reports are submitted. The reports shall contain the information listed in the standard provisions required under 40 CFR 122.41(l)(6). [40 CFR 122.41(l)(7))]

h. Other information. When the Permittee becomes aware that it failed to submit any relevant facts in a permit application, or submitted incorrect information in a permit application or in any report to the Central Valley Water Board, State Water Board, or USEPA, the Permittee shall promptly submit such facts or information. [40 CFR 122.41(l)(8)]

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13. Bypass [40 CFR 122.41(m)]

a. Definitions.

i. *Bypass* means the intentional diversion of waste streams from any portion of a treatment facility. [40 CFR 122.41(m)(1)(i)] or

ii. *Severe property damage* means substantial physical damage to property, damage to the treatment facilities which causes them to become inoperable, or substantial and permanent loss of natural resources which can reasonably be *expected* to occur in the absence of a bypass. Severe property damage does not mean economic loss caused by delays in production. [40 CFR 122.41(m)(1)(ii)]

b. Bypass not exceeding limitations. The Permittee may allow any bypass to occur which does not cause effluent limitations to be exceeded, but only if it also is for essential maintenance to assure efficient operation. These bypasses are not subject to the standard provisions required under 40 CFR 122.41(m)(3) and (4). [40 CFR 122.41(m)(2)]

c. Notice.

i. *Anticipated* bypass. If the Permittee knows in advance of the need for a bypass, it shall submit a notice, if possible at least ten (10) days before the date of the bypass. [40 CFR 122.41(m)(3)(i)] or

ii. *Unanticipated* bypass. The Permittee shall submit notice of an unanticipated bypass in accordance with the standard provisions required under 40 CFR 122.41(l)(6) (24-hour notice). [40 CFR 122.41(m)(3)(ii)]

d. Prohibition of Bypass.

i. *Bypass* is prohibited, and the Central Valley Water Board may take enforcement action against a Permittee for bypass, unless: [40 CFR 122.41(m)(4)(i)]

(1) Bypass was unavoidable to prevent loss of life, personal injury, or severe property damage; [40 CFR 122.41(m)(4)(i)(A)]

(2) There were no feasible alternatives to the bypass, such as the use of auxiliary treatment facilities, retention of untreated wastes, or maintenance during normal periods of equipment downtime. This condition is not satisfied if adequate back-up equipment should have been installed in the exercise of reasonable engineering judgment to prevent a bypass which occurred during normal periods of equipment downtime or preventive maintenance; [40 CFR 122.41(m)(4)(i)(B)] and,

(3) The Permittee submitted notices in accordance with the standard provisions required under 40 CFR 122.41(m)(3). [40 CFR 122.41(m)(4)(i)(C)]

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ii. The *Central* Valley Water Board may approve an anticipated bypass, after considering its adverse effects, if the Central Valley Water Board determines that it will meet the three (3) conditions listed above. [40 CFR 122.41(m)(4)(ii)]

14. Upset [40 CFR 122.41(n)]

a. Definition. *Upset* means an exceptional incident in which there is unintentional and temporary noncompliance with technology based permit effluent limitations because of factors beyond the reasonable control of the Permittee. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, or careless or improper operation. [40 CFR 122.41(n)(1)]

b. Effect of an upset. An upset constitutes an affirmative defense to an action brought for noncompliance with such technology based permit effluent limitations if the standard provisions required under 40 CFR 122.41(n)(3) are met. No determination made during administrative review of claims that noncompliance was caused by upset, and before an action for noncompliance, is final administrative action subject to judicial review. [40 CFR 122.41(n)(2)]

c. Conditions necessary for a demonstration of upset. A Permittee who wishes to establish the affirmative defense of upset shall demonstrate, through properly signed, contemporaneous operating logs, or other relevant evidence that: [40 CFR 122.41(n)(3)]

i. An upset occurred and that the Permittee can identify the cause(s) of the upset; [40 CFR 122.41(n)(3)(i)]

ii. The permitted facility was at the time being properly operated; [40 CFR 122.41(n)(3)(ii)] and

iii. The Permittee submitted notice of the upset in accordance with the standard provisions required under 40 CFR 122.41(l)(6)(ii)(B) (24-hour notice). [40 CFR 122.41(n)(3)(iii)]

iv. The Permittee complied with any remedial measures pursuant to the standard provisions required under 40 CFR 122.41(d). [40 CFR 122.41(n)(3)(iii)]

d. Burden of proof. In any enforcement proceeding, the Permittee seeking to establish the occurrence of an upset has the burden of proof. [40 CFR 122.41(n)(4)]

15. Standard Permit Provisions For Municipal Separate Storm Sewer Systems [40 CFR 122.42(c)]

The operator of a small, medium, or large MS4 or a municipal separate storm sewer that has been designated by the Central Valley Water Board under 40 CFR 122.26(a)(1)(v) shall submit an annual report by the anniversary of the date of the issuance of the permit for such system. The report shall include:

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a. The status of implementing the components of the Storm Water Management Program that are established as permit conditions; [40 CFR 122.42(c)(1)]

b. Proposed changes to the Storm Water Management Program that are established as permit conditions. Such proposed changes shall be consistent with 40 CFR 122.26(d)(2)(iii); [40 CFR 122.42(c)(2)] and

c. Revisions, if necessary, to the assessment of controls and the fiscal analysis reported in the permit application under 40 CFR 122.26(d)(2)(iv) and (v); [40 CFR 122.42(c)(3)]

d. A summary of data, including monitoring data, that is accumulated throughout the reporting year; [40 CFR 122.42(c)(4)]

e. Annual expenditures and budget for year following each annual report; [40 CFR 122.42(c)(5)]

f. A summary describing the number and nature of enforcement actions, inspections, and public education programs; [40 CFR 122.42(c)(6)]

g. Identification of water quality improvements or degradation. [40 CFR 122.42(c)(7)]

16. Standard Permit Provisions For Storm Water Discharges [40 CFR 122.42(d)]

The initial permits for discharges composed entirely of storm water issued pursuant to 40 CFR 122.26(e)(7) shall require compliance with the conditions of the permit as expeditiously as practicable, but in no event later than three (3) years after the date of issuance of the permit.

B. General Provisions

In addition to the standard provisions required to be incorporated into the Order and NPDES permit pursuant to 40 CFR 122.22, 122.41, 122.42, 122.44, and 40 CFR Part 136 several other general provisions apply to this Order. The general provisions applicable to this Order and NPDES permit are as follows:

1. **Discharge of Waste Is a Privilege**

No discharge of waste into the waters of the State, whether or not such discharge is made pursuant to waste discharge requirements, shall create a vested right to continue the discharge. All discharges of waste into waters of the State are privileges, not rights. [Water Code section 13263(g)]

2. Duration of Order and NPDES Permit

a. Effective date. This Order and NPDES permit becomes effective on 100 days after its adoption provided the USEPA has no objection. If the USEPA objects to its issuance, this Order shall not become effective until such objection is withdrawn.

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As of the effective coverage date specified in the Permittee's application for coverage, this Order shall supersede the applicability of any preexisting order or permit regulating the operation of, and discharges from, the Permittee's MS4. The Central Valley Water Board retains continuing authority to take enforcement action for violations of such preexisting orders or permits that occurred prior to the Permittee's effective coverage date under this Order.

b. Expiration. This Order and NPDES permit expires five (5) years after its effective date. [40 CFR 122.46(a)]

c. Continuation of expired order. After this Order and NPDES permit expires, the terms and conditions of this Order and NPDES permit are automatically continued pending issuance of a new permit if all requirements of the federal NPDES regulations on the continuation of expired permits (40 CFR 122.6) are complied with.

3. Availability

A copy of this Order shall be kept at a readily accessible location and shall be available to on-site personnel at all times.

4. Confidentiality of Information

Except as provided for in 40 CFR 122.7, no information or documents submitted in accordance with or in application for this Order will be considered confidential and all such information and documents shall be available for review by the public at the Central Valley Water Board office.

Claims of confidentiality for the following information will be denied: [40 CFR 122.7(b)]

a. The name and address of any permit applicant or Permittee; [40 CFR 122.7(b)(1)] and

b. Permit applications and attachments, permits, and effluent data. [40 CFR 122.7(b)(2)]

5. Effluent Limitations

a. Interim effluent limitations. The Permittee shall comply with any interim effluent limitations as established by addendum, enforcement action, or revised waste discharge requirements which have been, or may be, adopted by the Central Valley Water Board.

b. Other effluent limitations and standards of sections 301, 302, 303, 307, 318 and 405 of CWA. If any applicable toxic effluent standard or prohibition (including any schedule of compliance specified in such effluent standard or prohibition) is promulgated under Section 307(a) of the CWA for a toxic pollutant and that standard or prohibition is more stringent than any limitation on the pollutant in the permit, the Central Valley Water Board shall institute proceedings under these regulations to modify or revoke and reissue the permit to conform to the toxic effluent standard or prohibition. [40 CFR 122.44(b)(1)]

TENTATIVE

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6. Permit Actions

The filing of a request by the Permittee for modification, revocation and reissuance, or termination of this Order, or a notification of planned change in or anticipated noncompliance with this Order does not stay any condition of this Order. (See 40 CFR 122.41(f)) In addition, the following provisions apply to this Order:

a. Upon application by any affected person, or on its own motion, the Central Valley Water Board may review and revise the requirements in this Order. All requirements shall be reviewed periodically. [Water Code section 13263(e)]

b. This Order may be terminated or modified for cause, including, but not limited to, all of the following: [Water Code section 13381]

   i. Violation of any condition contained in the requirements of this Order. [Water Code section 13381(a)]

   ii. Obtaining the requirements in this Order by misrepresentation, or failure to disclose fully all relevant facts. [Water Code section 13381(b)]

   iii. A change in any condition that requires either a temporary or permanent reduction or elimination of the permitted discharge. [Water Code section 13381(c)]

c. When this Order is transferred to a new owner or operator, such requirements as may be necessary under the Water Code can be incorporated into this Order.

7. Monitoring

In addition to the standard provisions required under 40 CFR 122.41(j) and (l)(4), the following general monitoring provisions apply to this Order:

a. Where procedures are not otherwise specified in Order, sampling, analysis and quality assurance/quality control shall be conducted in accordance with the Quality Assurance Management Plan (QAMP) for the State of California's Surface Water Ambient Monitoring Program (SWAMP), adopted by the State Water Resources Control Board.

b. Pursuant to 40 CFR 122.41(j)(2) and Water Code section 13383(a), the Permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, and records of all data used to complete the application for this permit, for a period of at least five (5) years from the date of the sample, measurement, report or application. This period may be extended by request of the Central Valley Water Board at any time.

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c. All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Public Health or a laboratory approved by Central Valley Water Board staff.

d. For priority pollutants, MLs shall be used for all analyses, unless otherwise specified. Reporting Levels (RL) must be lower than or equal to the ML value. If a particular ML is not attainable in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure may be used instead. .

e. Each monitoring report submitted with an Annual Report to the Central Valley Water Board shall include flow measurements for each sampling event and a spreadsheet of water quality monitoring with the sampling event identifier, site code, sample type, date and time sampled, analyte and fraction, methods, results, including non-detections, reporting and minimum detection limits, units, laboratory names and locations, lowest water quality objective and source, and whether or not the result was an exceedance.

8. Enforcement

a. The Central Valley Water Board is authorized to enforce the terms of this Order under several provisions of the Water Code, including, but not limited to, Water Code sections 13385, 13386, and 13387.

b. Nothing in this Order shall be construed to protect the Permittee from its liabilities under federal, state, or local laws.

c. The Water Code provides for civil and criminal penalties comparable to, and in some cases greater than, those provided for under the CWA.

d. Except as provided in the standard conditions required under 40 CFR 122.41(m) and (n), nothing in this Order shall be construed to relieve the Permittee from civil or criminal penalties for noncompliance.

e. Nothing in this Order shall be construed to preclude the institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties to which the Permittee is or may be subject to under Section 311 of the CWA.

f. Nothing in this Order shall be construed to preclude institution of any legal action or relieve the Permittee from any responsibilities, liabilities, or penalties established pursuant to any applicable state law or regulation under authoring preserved by Section 510 of the CWA.

9. Severability

The provisions of this Order are severable, and if any provision of this Order, or the application of any provisions of this Order to any circumstance, is held invalid, the application of such provision to other circumstances and the remainder of this Order shall not be affected thereby.

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10. Applications

Any application submitted by the Permittee for reissuance or modification of this Order shall satisfy all applicable requirements specified in federal regulations as well as any additional requirements for submittal of a Notice of Intent specified in the Water Code and the California Code of Regulations.

11. Implementation

All plans, reports and subsequent amendments submitted in compliance with this Order shall be implemented immediately (or as otherwise specified). All submittals by the Permittee shall be adequate to implement the requirements of this Order.

12. Modification of Order

This Order may be modified, revoked, and reissued, or terminated for cause due to promulgation of amended regulations, receipt of USEPA guidance concerning regulated activities, judicial decision, or in accordance with 40 CFR 122.62, 122.63, 122.64, and 124.5. The Central Valley Water Board may additionally reopen and modify this Order at any time prior to its expiration, after opportunity for public comment and a public hearing in accordance with the following circumstances:

a. If the Central Valley Water Board determines that revisions are warranted to those provisions of the Order (a) addressing compliance with water quality objectives or water quality standards in the receiving water; and/or (b) those provisions of the Order establishing an iterative process for implementation of management practices to assure compliance with water quality standards in the receiving waters.

b. Minor modifications to the Order may be made by the Central Valley Water Board where the proposed modification complies with all the prohibitions and limitations, and other requirements of this Order.

c. Proposed modifications to the Order that are not minor require amendment of this Order in accordance with this Order's rules, policies, and procedures.

d. New or revised water quality objectives come into effect, or any TMDL is adopted or revised (i.e., TMDL-specific permit requirements) that is applicable to the Permittee.

e. New programs, policies or plans come into effect including, but not limited to, a Sacramento-San Joaquin Delta and other regional monitoring plans, Biological Objectives Policy, Nutrients for Inland Surface Waters Policy, and/or Toxicity Assessment and Control Plan, that are applicable to the Permittee.

13. Report Submittals

a. All report submittals shall include an executive summary, introduction, conclusion, recommendations, and signed certified statement.

b. Each Permittee shall submit a signed certified statement covering its responsibilities for each applicable submittal.

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c. The Permittee shall submit a signed certified statement covering its responsibilities for each applicable submittal and the sections of the submittals for which it is responsible.

d. Unless otherwise directed, the Permittee shall submit electronic copies of each report required under this Order to the Central Valley Water Board, and to the USEPA.

e. The Permittee shall submit reports and provide notifications as required by this Order to the following:

EXECUTIVE OFFICER
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION
11020 SUN CENTER DRIVE, SUITE 200
RANCHO CORDOVA, CA 95670
Telephone: (916) 464-3291 Fax: (916) 464-4645

EUGENE BROMLEY
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
PERMITS ISSUANCE SECTION (W-5-1)
75 HAWTHORNE STREET
SAN FRANCISCO CA 94105

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ATTACHMENT I – DETERMINATION OF EROSION POTENTIAL

Ep is determined as follows - The *total effective work* done on the channel boundary is derived and used as a metric to predict the likelihood of channel adjustment given watershed and stream hydrologic and geomorphic variables. The index under urbanized conditions is compared to the index under pre-urban conditions expressed as a ratio (Ep). The effective work index (*W*) can be computed in a number of different ways including simplistic work equations, material specific sediment transport equations, or more complex functions based on site calibrated sediment rating curves. One such work equation, which represents the total work done on the channel boundary, includes the following:-

$$W = \sum_{i=1}^{n} (\tau_i - \tau_c)^{1.5} * \mathrm{V} * \Delta \mathrm{t}i \qquad (1)$$

Where: W = effective work, t_c = critical shear stress that initiates bed mobility or erodes the weakest bank layer, t_i = applied hydraulic shear stress, Δt = duration of flows (in hours), V=mid-channel flow velocity, and *n* = length of flow record. The effective work index for presumed stable stream channels under pre-urban conditions is compared to stable and unstable channels under current urbanized conditions. The comparison, expressed as a ratio, is defined as the Erosion Potential (Ep)[111] (McRae (1992, 1996)).

$$Ep = \frac{W\,post}{W_{pre}} \qquad (2)$$

W_{post} = work index estimated for the post-urban condition
W_{pre} = work index estimated for the pre-urban condition

Alternatively, a sediment transport function such as the Brownlie equation or the Meyer-Peter and Muller equation *(US Department of Agriculture, Natural Resources Conservation Service, 2007. Part 654 Stream Restoration Design, National Engineering Handbook, August 2007)* can be used to demonstrate appropriate Hydromodification control.

[111] MacRae, C.R. 1992. *The Role of Moderate Flow Events and Bank Structure in the Determination of Channel Response to Urbanization. Resolving conflicts and uncertainty in water management: Proceedings of the 45th Annual Conference of the Canadian Water Resources Association*. Shrubsole, D, ed. 1992, pg. 12.1-12.21; MacRae, C.R. 1996. Experience from Morphological Research on Canadian Streams: Is Control of the Two-Year Frequency Runoff Event the Best Basis for Stream Channel Protection. Effects of Watershed Development and Management on Aquatic Ecosystems, ASCE Engineering Foundation Conference, Snowbird, Utah, pg. 144-162.

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ATTACHMENT J – PERFORMANCE-BASED REQUIREMENTS

J

The purpose of this attachment is to assist the Permittee in the development and implementation of their Storm Water Program so that it prioritizes the milestones, strategies, and actions based on the PWQCs identified. The Permittee shall develop a Storm Water Management Plan (SWMP) describing their Storm Water Management Program consistent with the Performance-Based approach described below.

GENERAL RESPONSIBILITIES

The Permittee shall include the following program elements in their SWMP and identify how each element will be implemented to address the Priority Water Quality Constituents. (PWQCs) Although the level of effort may be different for each program element depending on the PWQCs, each program element shall be implemented by the Permittee.

STORM WATER MANAGEMENT PLAN

A. Storm Water Management Plan (SWMP)

The Permittee shall include the following elements in its SWMP:

1. Jurisdictional Runoff Area Map, which shall include the following, as applicable:

    a. MS4 permit boundary;

    b. County boundary(ies);

    c. Urban boundary;

    d. City boundary(ies);

    e. Boundaries of other Phase I and II MS4s, if applicable;

    f. Main arterial streets and highways;

    g. Water bodies receiving MS4 discharges, including CWA section 303(d) impaired water bodies or water body segments; and

    h. MS4 outfalls.

2. Assessment and prioritization methodologies, including criteria relied on to identify WQCs and PWQCs;

3. Monitoring and assessment program meeting the requirements of **Part V**;

4. Description of the Permittee's Storm Water Management Program, including specific strategies and activities for addressing PWQCs, program management, and program elements required under this Order;

5. General schedule for implementation of identified strategies and activities;

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6. Other required plans and analyses under this Order, including but not limited to RAAs;

7. Effectiveness assessment and reporting methodology used to demonstrate its Storm Water Management Program, as described in its SWMP, is achieving established milestones and successfully implementing strategies and activities; and

8. Adaptive management methodology used to incorporate the iterative approach and improve its Storm Water Management Program

PROGRAM MANAGEMENT

A. Legal Authority

The Permittee shall review, revise, maintain, and enforce adequate legal authority to control pollutant discharges into their MS4 through ordinance, statute, permit, contract, or similar means (40 CFR 122.26(d)(2)(i)). This program element may include the following: control of contributing pollutants in discharges associated with industrial and construction sites, effective prohibition of identified illicit discharges, prohibition and elimination of illegal connections, and requirement of BMPs to prevent or reduce the discharge of pollutants from MS4s to the MEP.

Enforcement Response Procedures. This Order requires the Permittee to develop and implement enforcement response procedures. A description of the enforcement response procedures shall be included with the Permittee's SWMP. The SWMP shall describe the applicable approaches and options to enforce its legal authority, as necessary, to achieve compliance with the requirements of this Order. The Permittee shall develop enforcement response procedures that include the following at a minimum:

1. **Enforcement Response Approaches and Options**

   The SWMP shall describe the enforcement response approaches that the Permittee will implement to compel compliance with its statutes, ordinances, permits, contracts, orders, or similar means, and the requirements of this Order. The description shall include the protocols for implementing progressively stricter enforcement responses. The enforcement response approaches shall include appropriate sanctions to compel compliance, including, the following tools as applicable:

   a. Verbal and written notices of violation;
   b. Referral to Water Board for enforcement;
   c. Fines;
   d. Bonding requirements;
   e. Administrative and criminal penalties;
   f. Liens;
   g. Stop work orders; and
   h. Permit and occupancy denials.

2. **Correction of Violations**

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a. The Permittees shall ensure that violations are corrected in a timely manner with the goal of correcting the violations within thirty (30) calendar days after the violations are discovered, or prior to the next predicted rain event, whichever is sooner.

b. If more than thirty (30) calendar days are required to achieve compliance, then a rationale shall be recorded in the applicable electronic database or tabular system used to track violations.

3. **Progressive Enforcement**

a. The enforcement response procedures shall include a definition of "progressive enforcement." The progressive enforcement approach shall, at a minimum, consider the environmental harm (including the violation of water quality standards) that has occurred as a result of the discharge. Additional considerations for enforcement may include event duration, event frequency, and the cooperation and intent of the responsible party. Progressive enforcement may be defined differently for development planning, construction sites, commercial facilities or areas, industrial facilities, municipal facilities, and/or residential areas.

b. Where the Permittee determines progressive enforcement is required, a rationale shall be recorded in the applicable electronic database or tabular system used to track violations.

c. Progressive enforcement actions shall continue to increase in severity, as necessary, to compel compliance as soon as possible.

4. **Reporting of Non-Compliant Sites**

a. The Permittee shall notify the Central Valley Water Board of non-filers under the Industrial General Permit and Construction General Permit (CGP) within one month of 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:

i. Construction project or industrial facility location;

ii. Name or owner or operator;

iii. Estimated construction project size or type of industrial activity; and

iv. Records of communication with owner or operator regarding filing requirements.

B. Fiscal Analysis

The Permittee shall secure the resources necessary to meet the requirements of this Order and shall prepare a fiscal analysis to be submitted as part of the Mid-Term and End-Term Reports. This summary shall, for each fiscal year covered by the report, identify the expenditures spent on the implementation of the SWMP. Such summary shall include a description of the source(s) of funds that were used or are proposed to be used to meet the necessary expenditures, including legal restrictions on the use of such funds.

PROGRAM ELEMENTS

TENTATIVE

The Permittee shall develop and implement the following program elements, as applicable, so that they effectively address the PWQCs:

A. Illegal Connection and Illicit Discharge Elimination Program

The Permittee shall implement an Illegal Connection and Illicit Discharge Elimination Program to actively seek and eliminate illicit discharges and illegal connections, if any in the Jurisdictional Runoff Area. This program element may include the following: detection of illicit discharges and illegal connections, investigation/inspection and follow-up procedures designed to eliminate these sources, enforcement of local codes and ordinances, public education and training.

Spill Response Procedures. The Permittee shall develop and implement spill response procedures for all sanitary sewer overflows (SSO) and other spills that may discharge into its MS4. The spill response procedures shall clearly identify the agencies responsible for spill response and cleanup, telephone numbers and e-mail address for contacts, and shall contain at a minimum the following requirements:

1. Coordination with spill response teams throughout all appropriate departments, programs and/or applicable agencies so that maximum water quality protection is provided.
2. Initiate investigation of all public and employee spill complaints within three (3) business day of receiving the complaint to assess validity of the complaint.
3. Spills that may endanger human health or the environment shall be reported to appropriate public health agencies and the Office of Emergency Services (OES) as soon as possible.
4. The spill response procedures shall be evaluated at least once during the permit term to determine whether changes or updates are needed to ensure that the spill response procedures are accurately addressed and contact information is correct and current. Any identified changes shall be made to the procedures subsequent to the evaluation.

B. Construction Storm Water Runoff Control Program

The Permittee shall implement the Construction program to reduce pollutants in runoff from construction sites, if any, in the Jurisdictional Runoff Area during all construction phases. This program element may include the following: project approval process, site inventory and tracking, inspection/outreach, enforcement of local codes and ordinances, and training.

C. Industrial/Commercial Storm Water Runoff Control Program

The Permittee shall develop and implement the Industrial/Commercial program to reduce pollutants in runoff from industrial/commercial sites, if any, within the Jurisdictional Runoff Area. This program element may include the following: high priority facility inventory and tracking, inspection/outreach, enforcement of local codes and ordinances and training.

D. Municipal Operations Storm Water Runoff Control Program (Pollution Prevention/Good Housekeeping)

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The Permittee shall develop and implement the Municipal Operations (Pollution Prevention/Good Housekeeping) program to effectively prohibit non-storm water discharges to the MS4 and reduce PWQCs in runoff from municipal land use areas, facilities, and activities, if any, within the Jurisdictional Runoff Area. This program element may include the following: pollution prevention at Permittee-owned or operated facilities, storm drain system maintenance, street cleaning and maintenance and training.

E. Public Involvement and Participation Program

The Permittee shall implement the Public Outreach program to educate the public and encourage participation in the implementation of the Storm Water Management Program as described in its SWMP. This program element includes outreach to involve, engage and educate the public.

F. Planning and Land Development/Post Construction Storm Water Management Program

The Permittee shall develop and implement the Planning and Land Development/Post Construction program to minimize the short- and long-term impacts on receiving water quality from new development and redevelopment.

1. Objectives.

The objectives of the Planning and Land Development program are to:

a. Incorporate water quality and watershed protection principles into the Permittee's policies, planning procedures (e.g., General Plan, CEQA analyses, planning/entitlement processes, etc.) and development permit approval process;

b. Develop (as needed) and implement planning and land development standards;

c. Ensure that post-construction storm water quality controls are required and properly selected during the development approval process to minimize storm water quality impacts to the MEP for both private priority development projects and Permittee-owned development projects;

d. Ensure that post-construction storm water quality controls are selected based on project- and site-specific conditions and land use characteristics, as well as receiving water impacts;

e. Ensure that selected post-construction storm water quality controls will remain effective upon project completion by requiring appropriate maintenance provisions and/or agreements and/or establishment of a maintenance district for all priority development projects;

f. Develop and/or maintain a tracking system to track the ownership and maintenance history of selected post-construction storm water quality controls to ensure adequate long-term maintenance; and

g. Provide regular internal training to key staff on applicable components of the Planning and Land Development program.

2. Components

TENTATIVE

The Permittee shall review, update as needed, and continue to implement its Planning and Land Development program. Any new or updated Planning and Land Development Program components shall be included with the SWMP. The Planning and Land Development/Post Construction[112] program shall incorporate the following components:

a. Priority Development Projects[113]

The Permittee shall define the criteria and thresholds for the Priority Development Projects that will be subject to the requirements specified as a part of this program. A Permittee may propose criteria that differ from those listed in the definition of "Priority Development Project" in **Attachment C** as long as its SWMP demonstrates that the criteria are designed to achieve equivalent protection of water quality that would be achieved by the criteria listed in **Attachment C**. If a Permittee has already received prior board approval of alternate criteria for defining Priority Development Projects, the Permittee's SWMP need only reference the Central Valley Water Board order providing such approval, or else append a copy of the board decision approving the alternate criteria to the SWMP. However, the Executive Officer retains the discretion to require a Permittee to revisit and justify either its existing criteria or revised criteria.

In addition, the Permittee shall develop policies (as needed) to define and promote preferred types of development (infill, redevelopment). These policies may include less stringent criteria for preferred priority projects.

b. Site Design Measures

Each Permittee shall require priority new development and redevelopment projects to assess the possibility of integrating Site Design strategies. Site Design is a storm water management strategy that emphasizes conservation and use of existing natural site features integrated with distributed, small-scale storm water controls to more closely mimic natural hydrologic patterns in residential, commercial, and industrial settings.

c. Source Control Measures

The Permittee shall develop strategies that control the sources of pollutants or constituents (i.e., the point where water initially meets the ground) to minimize the transport of urban runoff and pollutants offsite and into the Permittee MS4. Source controls are intended to keep pollutants from mixing with runoff. All development projects shall require permanent markers discouraging dumping to be applied to

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[112] *Post-Construction Performance Standards & Water Quality-Based Requirements, A Compendium of Permitting Approaches, Municipal Separate Storm Sewer System Permits*, EPA 833-R-14-003, USEPA, June 2014.

[113] For categories of priority development projects, see the definition in **Attachment C** (*Acronyms, Abbreviations, and Definitions*) which is based on State Water Board Order WQ-2000-11, approved on 5 October 2000 and State Water Board Memorandum dated 26 December 2000 pertaining to the decision in State Water Board Order WQ-2000-11 to use Standard Urban Storm Water Mitigation Plans (SUSMPs) in Phase I MS45 Permits.

storm drain inlets. In addition, source control measures shall be required for the following areas:

i. Fueling areas

ii. Loading areas

iii. Outdoor material storage areas

iv. Outdoor work areas (e.g., processing, manufacturing)

v. Vehicle and equipment wash areas

vi. Waste management areas (garbage, recycling, restaurant food waste)

The Permittee's development standards shall require new development and redevelopment projects to incorporate applicable source controls.

d. Treatment Control Measures

The Permittee shall require Priority Development Projects to assess the feasibility and necessity of incorporating treatment control measures. Storm water quality treatment control measures are engineered technologies designed to remove pollutants from site runoff. Treatment control measures may include, but are not limited to: bioretention planters, vegetated filter strips and swales, infiltration trenches and basins, sand filters, detention basins and select proprietary devices.

The Permittee's development standards shall require Priority Development Projects to incorporate treatment control measures as needed and feasible. The Permittee shall also consider that the required treatment volume or flow can be reduced or met through the use of LID measures.

e. Numeric Sizing Criteria

Where utilized, the Permittee shall require the implementation of storm water quality treatment control measures and applicable LID strategies to be designed to treat either the water quality flow (WQF) or water quality volume (WQV) as follows:

i. WQF-based measures shall be designed to treat:

(1) The maximum (peak) flow rate of runoff produced by the 85th percentile hourly precipitation intensity, as determined from the historical rainfall record, multiplied by a factor of two; or

(2) The maximum flow rate of runoff as determined from local historical rainfall records, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile hourly rainfall intensity multiplied by a factor of two; or

(3) The Permittee justified maximum flow rate (submitted as a part of the SWMP) that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile hourly rainfall intensity multiplied by a factor of two.

ii. WQV-based measures shall be designed to capture and treat either:

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(1) The volume of runoff produced by the 85th percentile, 24-hour rainfall event, determined as the maximized capture storm water volume for that area, using the formula and volume capture coefficients set forth in *Urban Runoff Quality Management (WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87,(1998)*, pages 175-178) or equivalent method; or

(a) The volume of runoff produced from a 85th percentile, 24-hour storm event, as determined for the local the historical rainfall record; or

(b) The volume of annual runoff based on unit basin storage volume to achieve eighty (80) percent or more of the volume treatment by the methodology set forth in Appendix D of the California *Storm Water Best Management Practices Handbook* (Stormwater Quality Task Force, 1993); or

(c) The Permittee justified design storm volume (submitted as a part of the SWMP). The treatment of this volume shall achieve approximately the same reduction in pollutant loads achieved by treatment of the 85th percentile, 24-hour storm event.

Selected sizing criteria shall be described in the SWMP. Storm flows above these values shall be considered compliant with the Order as the levels of dilution available in such flows reduce concentrations accordingly.

f. Infiltration BMPs

The Permittee shall consider the type of development and resulting storm water discharge and, if appropriate, consider the use of structural BMPs that are designed to primarily function as infiltration devices (e.g., infiltration trenches, infiltration basins, bioretention planters, porous pavement, dry wells[114]) so long as the devices will not adversely impact groundwater quality. These restrictions and when they should be applied shall be described in the Permittee's Development Standards.

g. Maintenance Agreement and Transfers

The Permittee shall require Priority Development Projects to ensure selected post-construction storm water quality controls will remain effective upon project completion by requiring legal agreements, covenants, or CEQA mitigation requirements, and/or conditional use permits.

h. Low Impact Development Strategies

The Permittee shall require Priority Development Projects to assess the possibility of integrating Low Impact Development (LID) strategies. LID is a storm water management strategy that emphasizes conservation and use of existing natural site features integrated with distributed, small-scale storm water controls to more closely mimic natural hydrologic patterns in residential, commercial, and industrial settings.

[114] The Regional and/or State Boards are in the process of developing guidelines specific to the design and siting of dry wells that should be followed when established.

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LID employs a variety of natural and structural features that reduce the rate of runoff, filter out its pollutants, and facilitate the infiltration of water into the ground. Furthermore, Senate Bill 985 and the State Water Resources Control Board's Storm Water Strategy encourage the use of storm water as a resource to augment water supply.

LID measures may include, but are not limited to: stream setbacks and buffers, soil amendments, tree planting and preservation, rooftop and impervious area disconnection, porous pavement, eco roofs, bioretention planters, and rain barrels or cisterns. The Permittee's development standards shall require Priority Development Projects to integrate LID strategies where feasible to do so.[115] This Order encourages the Permittees to develop storm water management programs that promote the use of storm water as a resource.

This Order requires the Permittee to incorporate Low Impact Development into the Planning and Land Development Program.

i. Hydromodification Management Plan

The Permittees shall require Priority Development Projects, not otherwise exempted, that will discharge into natural drainage systems, to implement hydrologic control measures to prevent accelerated downstream erosion and to protect stream habitat.

i. This Order requires the Permittees to develop and implement a Hydromodification Management Plan (HMP). The HMP shall include measures that manage the increases in the magnitude (e.g., flow control), frequency, volume and duration of runoff from development projects in the range of flows to control in order to protect natural drainage systems from increased potential for erosion. The HMP may include one (or more) of the following management strategies:

(1) Erosion Potential: Hydromodification control in natural drainage systems shall be achieved by maintaining the Erosion Potential (Ep) in streams at a value of approximately 1, unless an alternative value can be shown to be protective of the natural drainage systems from erosion, incision, and sedimentation that can occur as a result of flow increases from impervious surfaces and prevent damage to stream habitat in natural drainage system tributaries (**Attachment I**, *Determination of Erosion Potential*).

(2) Flow Duration Control: post-project runoff shall not exceed estimated pre-project rates and/ or durations (At least 90% of the flows must not have discharge frequencies (% of time) that exceed the pre-project discharge frequencies in the range of flows to control. Those flows that have frequencies that exceed pre-project discharge frequencies may not exceed it by more than 10%.) where the increased storm water discharge rates and/or durations will result in increased potential for erosion.

[115] The *California Phase II LID Sizing Tool*, a web-based tool, may assist Permittees in the selection and sizing of LID BMPs. http://owp-web1.saclink.csus.edu/LIDTool/Start.aspx

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(3) Other equivalent design criteria that is equally protective of natural drainage systems. This method will be subject to approval by the Executive Officer.

Natural drainage systems that are subject to the hydromodification assessments and controls include all drainages that have not been improved (e.g., channelized or armored with concrete, shotcrete, or rip-rap) or drainage systems that are tributary to a natural drainage system, except as provided below (Exemptions to Hydromodification Controls). The clearing or dredging of a natural drainage system does not constitute an "improvement."

ii. Exemptions to Hydromodification Controls: The Permittees may exempt the following Priority Development Projects from implementation of hydromodification controls where assessments of downstream channel conditions and proposed discharge hydrology indicate that adverse hydromodification effects to beneficial uses of natural drainage systems are unlikely:

(1) Projects that are replacement, maintenance or repair of the Permittees' existing flood control facilities, storm drains, public utilities, or transportation network.

(2) Redevelopment Projects (e.g., infill) that do not increase the effective impervious area or decrease the infiltration capacity of pervious areas compared to the pre-project conditions.

(3) Construction of infill projects in highly developed watersheds, where the potential for single-project and/or cumulative impacts is minimal.

(4) Projects that have any increased discharge directly or via a storm drain to a sump, drainage pump station, lake, area under tidal influence, or into a waterway (e.g., perennial river) that is not susceptible to hydromodification impacts.

(5) Projects that discharge directly or via a storm drain into concrete or otherwise engineered (not natural) channels (e.g., channelized or armored with rip rap, shotcrete, concrete lined, etc.), which, in turn, discharge into a receiving water that is not susceptible to hydromodification impacts.

Hydromodification controls may include one, or a combination of onsite, regional or sub-regional hydromodification control measures, LID strategies, or stream and riparian buffer restoration measures. Any in-stream restoration measure shall not adversely affect the beneficial uses of the natural drainage systems. LID BMPs implemented on single family homes are sufficient to comply with Hydromodification criteria.

The HMP shall be developed no later than 1-year after the approval of the SWMP by the Regional Board. If a Permittee or group of Permittees has already developed, or is in the process of developing, a HMP, they may assess the HMP and the method in which it was developed to determine what modifications (if any) are necessary to comply with this provision.

The Permittees' development standards shall require Priority Development Projects to integrate hydromodification strategies, as needed. LID strategies and treatment

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controls may simultaneously address the hydromodification management requirements.

j. Technical Guidance

The Permittee shall develop and maintain a Technical Guidance manual of development standards consistent with the requirements of the provisions in this program element. The Technical Guidance shall include site design measures, source controls, treatment controls, LID, hydromodification, and erosion and sediment control strategies, if not already included in other applicable technical guidance. The schedule for development, modification and implementation of the Technical Guidance manual shall be included in the Permittee's SWMP. The Permittee may adopt existing technical guidance manuals/standards to assist in meeting the intent of this Order.

k. Mitigation Funding

The Permittee may propose a management framework, for endorsement by the Executive Officer, to support regional or sub-regional solutions to storm water pollution, where any of the following situations occur:

i. A waiver for impracticability is granted; or

ii. Legislative funds become available; or

iii. Off-site mitigation is required because of loss of environmental habitat; or

iv. An approved watershed management plan or a regional storm water mitigation plan exists that incorporates an equivalent or improved strategy for storm water mitigation.

l. Regional Storm Water Mitigation

The Permittee may propose an existing or new regional or sub-regional storm water mitigation program as a part of the SWMP to substitute completely or in part for the development standards requirements. The Executive Officer may approve such a program if the Permittee can demonstrate that its implementation will:

i. Result in equivalent or improved storm water quality;

ii. Protect stream habitat;

iii. Promote cooperative problem solving by diverse interests;

iv. Be fiscally sustainable and have secure funding;

v. Be completed in five years, or as soon as possible if an extraordinarily large or phased in projects, including the construction and start-up of treatment facilities.

m. Alternative Compliance Program to Onsite LID and Hydromodification Implementation

At the discretion of the Permittee, Priority Development Projects may be allowed to participate in an alternative compliance program in lieu of requiring the

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implementation of LID and hydromodification measures onsite.[116] The alternative compliance program is available to a Priority Development Project only if the Priority Development Project applicant enters into a voluntary agreement with the Permittee authorizing this arrangement. In addition to the voluntary agreement, relief from implementing LID and hydromodification measures onsite may be authorized by the Permittee under the following conditions for candidate projects:

i. The Priority Development Project applicant agrees to fund, contribute funds to, or implement a candidate project;

ii. The Permittee shall determine that implementation of the candidate project will have an equal or greater overall water quality benefit than requiring implementation of LID and hydromodification measures onsite;

iii. If the Priority Development Project applicant chooses to fully or partially fund a candidate project, then the Permittee shall ensure that the funds to be obtained from the Priority Development Project applicant are sufficient to mitigate for impacts caused by not fully implementing LID and hydromodification measures onsite;

iv. The voluntary agreement to fund, partially fund, or implement a candidate project shall include reliable sources of funding and a plan for operation and maintenance of the candidate project. Reliable sources of funding may include escrow accounts, bonds, letters of credit, or other such mechanisms;

v. Design of the candidate project shall be conducted under an appropriately qualified engineer, geologist, architect, landscape architect, or other professional, licenses where applicable, and competent and proficient in the fields pertinent to the candidate project design;

vi. The candidate project shall be constructed as soon as possible, but no later than four (4) years after the certificate of occupancy is granted for the first Priority Development Project that contributed funds toward the construction of the candidate project, unless a longer period of time is authorized by the Executive Officer; and

vii. If the candidate project is constructed after the Priority Development Project is constructed, the Permittee shall require temporal mitigation for pollutant loads and altered flows that are discharged from the Priority Development Project.

n. Alternative Compliance In-Lieu Fee Structure

If the Permittee chooses to allow a Priority Development Project applicant to fund, or partially fund a candidate project or an alternative compliance project, then the Permittee shall develop and implement an in-lieu fee structure. This may be developed individually or with other Permittees and/or entities, as a means for designing, developing, constructing, operating and maintaining offsite alternative compliance projects. The in-lieu fee shall be transferred to the Permittee (for public projects) or an escrow account (for private projects) prior to the construction of the

[116] Such as the National Fish and Wildlife Foundation's In-Lieu Fee Program or other similar mitigation bank that provides a mitigation option alternative. http://www.nfwf.org/ilf/Pages/hom.aspx

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Priority Development Project. Any in-lieu fee structure that the Permittee chooses to implement shall be submitted to the Central Valley Water Board for review and acceptance as part of the SWMP.

o. Alternative Compliance Water Quality Credit System Option

The Permittee may develop and implement an alternative compliance water quality credit system option, individually or with other Permittees and/or entities, provided that such a credit system clearly exhibits that it will not allow discharges from Priority Development Projects to cause or contribute to a net impact over and above the impact caused by projects meeting the onsite LID and hydromodification implementation requirements. Any credit system that the Permittee chooses to implement shall be submitted to the Central Valley Water Board for review and approval as part of the SWMP.

p. Retrofitting and Rehabilitation

i. Retrofitting Areas of Existing Development

The Permittee should develop a planning process that will incorporate consideration of storm water retrofit projects[117] to address existing development that are identified as significant contributors of PWQCs. The planning process should consider the following:

(1) A storm water retrofit strategy that corrects prior design or performance deficiencies; disconnects impervious areas; storm water capture[118] to mitigate drought conditions, improves groundwater recharge and/or infiltration performance; addresses PWQCs; demonstrates new technologies; and/or supports stream restoration activities;

(2) Develop an inventory of potential retrofit ~~candidates~~projects;

(3) Establish a prioritization strategy to rank each project considering;

(a) PWQCs;

(b) Potential pollutant removal and drainage area affected;

(c) Stream channel protection capability;

(d) Design, construction, inspection, and maintenance costs of facility,

[117] Schuler, T., Hirchmann, D., Novotney, M., and J. Zilinski. *Urban Watershed Restoration Manual No. 3: Urban Stormwater Retrofit Practices*, Center for Watershed Protection, prepared for Office of Wastewater Management, USEPA, July 2007, www.cwp.org..

[118] *Stormwater Capture Potential in Urban and Suburban California*, Issue Brief, Natural Resources Defense Council, June 2014.

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considering the applicability of storage or on-site retrofits;

(e) Ability to implement the project; ~~and~~

(f) Potential for cumulative benefit; and

~~(f)~~(g) Infiltration capacity of the subsurface.~~.~~

ii. Stream, Channel, and/or Habitat Restoration in ~~-~~Areas of Existing Development

The Permittee should develop a planning process to evaluate ~~rehabilitation projects for streams, channels and/or habitats in existing development to stabilize water bodies at industrial or commercial sites, or municipal sites, facilities, or areas, or residential areas~~opportunities for rehabilitation projects in areas of existing development. The ~~identification~~ planning process should consider:

(1) Identify a rehabilitation strategy that addresses storm water runoff flows and durations that cause or contribute to hydromodification in receiving waters; rehabilitates channelized or hydromodified streams; restores wetlands and/or riparian habitats; restores watershed functions; and/or restores beneficial uses of receiving waters;

(2) Develop an inventory of potential rehabilitation ~~candidates~~projects;

(3) Establish a prioritization strategy to rank each project considering;

(a) PWQCs;

(b) Potential pollutant removal and drainage area affected;

(c) Bank stabilization capability;

(d) Design, construction, inspection, and maintenance costs ~~of facility~~, considering the applicability of storage or on-site retrofits;

(e) Ability to implement the project; and

(f) Potential for cumulative benefit.

q. Coordination, Enforcement and Tracking

i. The Permittee shall provide for the review of proposed project plans and require measures to ensure that all applicable Priority Development Projects will be in

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compliance with their storm water ordinances and development standards.

ii. The Permittee shall develop a process by which development standards will be implemented and include that process within the SWMP. The process shall identify at what point in the planning process development projects will be required to meet development standards. The process shall also include identification of the roles and responsibilities of various municipal departments, as applicable, in implementing the development standards, as well as any other measures necessary for the implementation of development standards.

iii. The Permittee shall develop a GIS or other electronic system for tracking projects that have been issued a permit for the construction of post-construction treatment control BMPs, including ownership information and responsibility and maintenance information and history.

r. Planning and Land Development Program Education and Training

The Permittee shall develop and implement a training program for key municipal staff and/or agency contracted staff involved in implementing the Planning and Land Development Program as specified in this Order. The Permittee shall train municipal staff and/or agency contracted staff on how to incorporate low impact development, hydromodification, and other techniques into private and public projects. All new hires whose jobs include implementation of Planning and Land Development Program shall receive this training within the first year of their hire date. The training program shall include the following:

i. A focus on general storm water education, new methods or technologies, application of permit requirements and responsibilities, and the permit requirements that apply to the staff being trained.

ii. Guidance on appropriate BMPs to apply to private and public projects.

iii. An assessment of trained staff and contracted staff's knowledge of the Planning and Land Development Program.

~~iii.~~iv. Revisions to the training as needed.

MONITORING REQUIREMENTS

A. Purpose

The monitoring program provides a framework for the adaptive management of the Permittee's storm water program. Each Permittee will document their approach for complying with the monitoring program requirements in the SWMP and provide a detailed implementation schedule as a part of the Work Plan. For the purposes of this section, monitoring includes the collection of both programmatic and water quality data and information.

The primary objectives of the monitoring program may include, but are not limited to:

1. Assessing compliance with this Order;

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2. Assessing the overall health of receiving waters and evaluating long-term trends in receiving water quality;

3. Characterizing urban runoff and evaluating the long term trends;

4. Assessing the impacts on receiving waters resulting from urban runoff;

5. Identifying the likely sources of pollutants and PWQCs;

6. Assessing the effectiveness of specific storm water quality controls and/or management actions;

7. Supports the development of water quality models and/or other data assessment tools; and/or

8. Identifying modifications to improve the effectiveness of the SWMP.

Ultimately, the goal of the monitoring program is to inform the Permittee, to the extent feasible, about the nexus between the implementation of the storm water program, the quality of the discharges from the MS4, and the resulting impact, if any, on the receiving water. This goal will be accomplished through monitoring, assessing, and reporting the conditions of the receiving waters, discharges from the MS4, pollutant sources, and the effectiveness of the water quality improvement strategies implemented as part of the SWMP and Work Plan.

B. Monitoring Study Design and Implementation Schedule

The Permittees shall include a Monitoring Study Design and Implementation Schedule with its SWMP that complies with the monitoring requirements provided in **Attachment G** (*Specific Provisions for Total Maximum Daily Loads Applicable to Order R5-2016-XXXX*) and **Attachment H** (*Standard Permit Provisions and General Provisions*) and address the following:

1. Monitoring Approach

   The SWMP should specify the monitoring approach selected including a narrative summary outlining the rationale for selecting the approach. The monitoring approach shall include a periodic re-evaluation of constituents of concern in storm water (e.g. heavy metals, bacterial indicators, and current-use pesticides).

2. Monitoring Parameters ~~and~~, Types, and Methods

   The SWMP shall specify:

   a. The parameters being sampled;

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b. Field and laboratory methods, including Reporting Limits, Method Detection Limits, and Minimum Levels[119]

c. Sampling types and frequencies.

3. Monitoring Locations

The SWMP shall include the following to specify monitoring site locations:

a. Justification for each monitoring/sampling location chosen.

b. A map showing the following:

i. Surface water bodies within the Jurisdictional Runoff Area, including those that are CWA section 303(d) listed or where a TMDL has been developed;

ii. Identification of MS4 outfalls that discharge to surface water bodies located within the Jurisdictional Runoff Area;

iii. The location of monitoring/sampling locations within the Jurisdictional Runoff Area with station identification numbers and descriptions.

4. Quality Assurance/Quality Control

The SWMP shall include a Quality Assurance Project Plan (QAPP), in accordance with the quality assurance/quality control (QA/QC) and other protocols (e.g., Standard Operating Procedures for bioassessment) established by the Surface Water Ambient Monitoring Program (SWAMP). All samples should be collected and analyzed in accordance with the methods specified in 40 CFR Part 136. Field testing, sample collection, preservation, laboratory testing, including quality control procedures and all record keeping shall comply with the most current version of the SWAMP QAPP which 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 QAPP is available at:

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

5. Local Water Quality Monitoring

[119] For priority pollutants, MLs shall be used for all analyses, unless otherwise specified. Reporting Levels (RL) must be lower than or equal to the ML value. If a particular ML is not attainable in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure may be used instead.

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Depending on the status of the current MS4 monitoring program (how long the monitoring program has been in place, what assessments have already been conducted, and the available data), the monitoring program described in the SWMP may include one or more of the following:

a. Receiving water monitoring

   i. Characterize and/or identify trends in receiving water conditions;

   ii. Identify water quality constituents of concern that are adversely impacting the beneficial uses of receiving waters and persistently exceeding water quality objectives;

b. Source characterization

   i. Identify and quantify (to the extent feasible) the likely sources of the water quality constituents of concern (e.g. pesticide applications, littering industrial facilities, atmospheric deposition, legacy pollutants, etc.) that may adversely affect the ability to meet applicable water quality objectives or impair the beneficial uses of the receiving waters;

c. Urban discharge monitoring

   i. Characterize and/or identify relevant trends in discharges from MS4 outfalls;

   ii. Identify pollutants from urban runoff that may cause water quality objective exceedances or adversely affect the beneficial uses of the receiving waters; and

d. Special studies

   i. Evaluate the effectiveness of BMPs including, to the extent possible, quantifying the reductions of pollutants from the BMP, the reductions of pollutants in the outfall discharges, and/or the reductions of pollutants in the receiving waters that are attributable to the BMP(s).

e. TMDL monitoring

   Each Permittee that is assigned a waste load allocation or identified as a responsible party in a TMDL approved by the U.S. EPA where urban runoff is listed as a source, shall comply with the corresponding implementation plan. To the extent that the implementation plan includes monitoring, these requirements must be addressed in the SWMP.

The Permittees shall submit any collected monitoring data during the previous reporting year (July 1 through June 30) with each Annual Report. Collected monitoring data shall be uploaded to the California Environmental Data Exchange

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Network (CEDEN)[120], or the Storm Water Multi-Application Reporting and Tracking System (commonly known as SMARTS) database when available.

6. Regional Monitoring Program

If directed by the Executive Officer (see **Part 7**, below) or requested by the Permittee (and approved by the Executive Officer) the Permittee shall participate in a regional monitoring program (RMP) to address all or part of the local water quality monitoring requirements of this Order.

a. Permittees that participate in a RMP may request a reduction in some of the local water quality monitoring specified in the monitoring requirements of this Order. Participation in a RMP by a Permittee shall consist of providing funds and/or in-kind services to the RMP at least equivalent to discontinued individual monitoring and study efforts.

b. If the Permittee proposes to reduce the local water quality monitoring in exchange for~~and instead~~ ~~participate~~ participation in a RMP, the Permittee shall submit a letter signed by an authorized representative to the Central Valley Water Board requesting to participate in a RMP, the date on which local water quality monitoring required under the monitoring requirements for this Order, would cease, or be modified, and specific monitoring locations and constituent combinations that would no longer be conducted individually. To ensure consistency with this Order, reductions in local water quality monitoring require the Executive Officer's prior written approval of the Permittee's request, including related SWMP modifications. Approval by the Executive Officer is not required prior to participating in the RMP, if the Permittee is not requesting reductions in local water quality monitoring.

c. If the Permittee is approved to participate in a RMP and reduce some local water quality monitoring, the Permittee shall continue to participate in a RMP until such time as the Permittee informs the Central Valley Water Board that participation in a RMP will cease and all local water quality monitoring will be reinstituted. To the extent approved by the Executive Officer, some local water quality monitoring and related monitoring identified in the SWMP, required under this Order may be discontinued so long as the Permittee adequately supports a RMP. If the Permittee fails to maintain adequate participation in a RMP by not providing funds and/or in-kind services, the Permittee shall reinstitute all previously required individual local water quality monitoring. During participation in the RMP, the Permittee shall conduct and submit any or part of the monitoring included in these monitoring requirements described in this Order that is deemed appropriate by the Permittee, provided the modified monitoring program approved by the Executive Officer is conducted at a minimum.

d. RMP data is not intended to be used directly to represent receiving water quality for purposes of determining if a discharge is causing or contributing to an exceedance of any applicable water quality standards.~~,~~ Thus, data from the RMP may be utilized as a preliminary step toward characterizing the receiving water.

[120] Data must be uploaded to CEDEN using the templates provided on the CEDEN website.

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Alternatively, the Permittee may conduct any site-specific receiving water monitoring deemed appropriate by the Permittee and submit that monitoring data for characterization monitoring. RMP monitoring stations are established generally as "integrator sites" to evaluate the combined impacts on water quality of multiple sources; RMP monitoring stations would not normally be able to identify the source of any specific constituent, but would be used to identify water quality issues needing further evaluation. RMP monitoring data, along with local Permittee data, may be used to help establish ambient receiving water quality. In addition, RMP data, as with all environmental monitoring data, can provide an assessment of water quality at a specific location and time that can be used in conjunction with other information (i.e. other receiving water monitoring data, spatial and temporal distribution and trends of receiving water data, point and non-point source discharges, receiving water flow rate and velocity) to determine a potential source or sources of a constituent that contributed to an exceedance of any applicable water quality standards.

e. During the period of participation in the RMP, the Permittee shall continue to report any individually conducted local water quality monitoring data in the Annual Report consistent with the monitoring requirements of this Order. In addition, with each submitted Annual Report, the Permittee shall include 1) a statement that the Permittee is participating in the RMP and have reduced some of the local water quality monitoring program required by the permit, and 2) the Permittee shall continue to attach a copy of the letter originally submitted to the Central Valley Water Board describing the monitoring location(s) and constituents that will no longer be ~~conducted~~ sampled individually.

7. Delta Regional Monitoring Program

a. Permittees Within the Legal Delta Boundary
Permittees within the legal Delta boundary are required to maintain adequate participation in the Delta Regional Monitoring Program to address all or part of the local water quality monitoring requirements of this Order. Adequate participation in the Delta Regional Monitoring Program is determined by the program's steering committee. The Permittees shall maintain adequate participation in the Delta Regional Monitoring Program for the entire term of this Order. Permittees that maintain such adequate participation shall be deemed in compliance with the local water quality monitoring to the extent the Executive Officer has authorized Delta RMP participation to replace such monitoring.

b. Permittees Outside the Legal Delta Boundary
Permittees outside of the legal Delta boundary may be required to participate in the Delta Regional Monitoring Program or other regional monitoring program, as applicable, if directed and approved by the Executive Officer to address all or part of the local water quality monitoring requirements of this Order. Adequate participation in the Delta Regional Monitoring Program is determined by the program's steering committee. Permittees that maintain such adequate participation shall be deemed in compliance with the local water quality monitoring to the extent the Executive Officer has authorized Delta RMP participation to replace such monitoring.

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a. Within Delta

Permittees within the legal Delta boundary shall adequately participate in the Delta Regional Monitoring Program to address the local water quality monitoring requirements of this Order. Adequate participation in the Delta Regional Monitoring Program is determined by the program's steering committee. The Permittees shall maintain adequate participation in the Delta Regional Monitoring Program for the entire term of this Order. Compliance with the local water quality monitoring and reporting requirements of this Order, through participation in the RMP, is considered to be adequate compliance.

b. Outside Delta

Permittees outside of the legal Delta boundary may be required to participate in the Delta Regional Monitoring Program or other regional monitoring program, as applicable, if directed and approved by the Executive Officer to address all or part of the local water quality monitoring requirements of this Order.

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ATTACHMENT K – PRESCRIPTIVE-BASED REQUIREMENTS

K

If unsuccessful in complying with requirements described under the Performance-Based approach, **Attachment J** (*Performance-Based Approach Requirements*), as determined by the Executive Officer, the Permittee shall instead follow the Prescriptive-Based approach described below.

GENERAL RESPONSIBILITIES

The Permittee shall include the following program elements in its SWMP and identify how each element will be implemented to address the PWQCs. Although the level of effort may be different for each program element depending on the PWQCs, each program element shall be implemented.

PROGRAM MANAGEMENT

A. Storm Water Management Plan (SWMP)

The Permittee shall include the following elements in its SWMP:

1. Jurisdictional Runoff Area Map, which shall include the following, as applicable:

    a. MS4 permit boundary;

    b. County boundary(ies);

    c. Urban boundary;

    d. City boundary(ies);

    e. Boundaries of other Phase I and II MS4s, if applicable;

    f. Main arterial streets and highways;

    g. Water bodies receiving MS4 discharges, including CWA section 303(d) impaired water bodies or water body segments; and

    h. MS4 outfalls.

2. Assessment and prioritization methodologies, including criteria relied on to identify WQCs and PWQCs;

3. Monitoring and assessment program meeting the requirements of Part **V**;

4. Description of the Permittee's Storm Water Management Program, including specific strategies and activities for addressing PWQCs, program management, and program elements required under this Order;

5. General schedule for implementation of identified strategies and activities;

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6. Other required plans and analyses under this Order, including but not limited to RAAs;

7. Effectiveness assessment and reporting methodology used to demonstrate its Storm Water Management Program, as described in its SWMP, is achieving established goals and successfully implementing strategies and activities, including BMPs, interim milestones and final dates of achievement; and

8. Adaptive management methodology used to incorporate the iterative approach and improve its Storm Water Management Program.

B. Legal Authority

The Permittee shall review, revise, maintain, and enforce adequate legal authority to control pollutant discharges into their MS4 through ordinance, statute, permit, contract, or similar means (40 CFR 122.26(d)(2)(i)). This program element shall include the following: control of contributing pollutants in discharges associated with industrial and construction sites, effective prohibition of identified illegal discharges, prohibition and elimination of illegal connections, and requirement of BMPs to prevent or reduce the discharge of pollutants from MS4s to the MEP.

Enforcement Response Procedures

This Order requires the Permittee to develop and implement enforcement response procedures**.** A description of the enforcement response procedures shall be included with the Permittee's SWMP. The SWMP shall describe the applicable approaches and options to enforce its legal authority, as necessary, to achieve compliance with the requirements of this Order. The Permittee shall develop enforcement response procedures that include the following at a minimum:

1. Enforcement Response Procedure Components

The enforcement response procedures shall define the enforcement approach and options (below) for the following program elements:

a. Illegal Connection and Illicit Discharge Elimination Enforcement;

b. Construction Management Enforcement;

c. Existing Development Enforcement; and

d. Planning and Land Development Enforcement.

2. Enforcement Response Approaches and Options

The SWMP shall describe the enforcement response approaches that the Permittees will implement to compel compliance with its statutes, ordinances, permits, contracts, orders, or similar means, and the requirements of this Order. The description shall include the protocols for implementing progressively stricter enforcement responses. The enforcement response approaches shall include appropriate sanctions to compel compliance, including, at a minimum, the following tools or their equivalent:

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a. Verbal and written notices of violation;

b. Referral to Water Board for enforcement;

c. Fines;

d. Bonding requirements;

e. Administrative and criminal penalties;

f. Liens;

g. Stop work orders; and

h. Permit and occupancy denials.

3. Correction of Violations

a. The Permittee shall ensure that violations are corrected in a timely manner with the goal of correcting the violations within thirty (30) calendar days after the violations are discovered, or prior to the next predicted rain event, whichever is sooner.

b. If more than thirty (30) calendar days are required to achieve compliance, then a rationale shall be recorded in the applicable electronic database or tabular system used to track violations.

4. Progressive Enforcement

~~a.~~ The enforcement response procedures shall include a definition of "progressive enforcement." The progressive enforcement approach shall, at a minimum, consider the environmental harm (including the violation of water quality standards) that has occurred as a result of the discharge. Additional considerations for enforcement may include event duration, event frequency, and the cooperation and intent of the responsible party. Progressive enforcement may be defined differently for development planning, construction sites, commercial facilities or areas, industrial facilities, municipal facilities, and/or residential areas.

~~b.~~

~~c. The enforcement response procedures shall include a definition of "progressive enforcement." Progressive enforcement shall include any enforcement scenario where a violation or other non-compliance is determined to cause or contribute to exceedances and/or excursions of exceedances and/or excursions of water quality objectives. Progressive enforcement may be defined differently for development planning, construction sites, commercial facilities or areas, industrial facilities, municipal facilities, and/or residential areas.~~

~~d.~~a.

~~e.~~b. Where the Permittee determines progressive enforcement is required, a rationale shall be recorded in the applicable electronic database or tabular system used to track violations.

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~~f.~~c. Progressive enforcement actions shall continue to increase in severity, as necessary, to compel compliance as soon as possible.

5. Reporting of Non-Compliant Sites

a. The Permittee shall notify the Central Valley Water Board of non-filers under the Industrial General Permit and CGP within one month of 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:

i. Construction project or industrial facility location;

ii. Name or owner or operator;

iii. Estimated construction project size or type of industrial activity; and

iv. Records of communication with owner or operator regarding filing requirements.

C. Fiscal Analysis

The Permittee shall secure the resources necessary to meet the requirements of this Order and shall prepare a fiscal analysis to be submitted as part of the Mid-Term and End-Term Reports. This summary shall, for each fiscal year covered by the report, identify the expenditures spent on the implementation of the SWMP. Such summary shall include a description of the source(s) of funds that were used or are proposed to be used to meet the necessary expenditures, including legal restrictions on the use of such funds.

PROGRAM ELEMENTS

The Permittee shall implement the following program elements as described below:

- Illegal Connection and Illicit Discharge Elimination Program
- Construction Site Storm Water Runoff Control Program
- Industrial/Commercial Facilities Storm Water Runoff Control Program
- Municipal Operations Storm Water Runoff Control (Pollution Prevention/Good Housekeeping) Program
- Public Involvement and Participation Program
- Planning and Land Development/Post Construction Storm Water Runoff Control Program

A. Illegal Connection and Illicit Discharge Elimination Program

The Permittee shall develop, implement, and enforce an Illegal Connection and Illicit Discharge Elimination Program to detect, investigate, and eliminate illegal connections and

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illicit discharges (IC/IDs) to the MS4[121]. The Permittee's program shall consist of at least the following major program components:

- Outfall Mapping
- Field Monitoring for Illicit Discharges
- Source Investigation and Elimination
- Identification and Response to Illegal Connections
- Public Reporting of Non-Storm Discharges and Spills
- Spill Response Plan
- Education and Training
- Enforcement, as discussed in **Section B**, Legal Authority.

As stated in this Order, the Permittee shall have adequate legal authority to effectively prohibit IC/IDs to the MS4 and enable enforcement capabilities to eliminate the source of IC/IDs.

1. Outfall Mapping

a. The Permittee shall create and maintain an up-to-date and accurate outfall map[122]. 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[123].

b. The outfall map shall at a minimum show:

i. The location of all outfalls 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 Jurisdictional Runoff Area to a receiving water.

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

iii. Priority areas include, but are not limited to the following:

(1) Areas with older infrastructure that are more likely to have illegal connections and a history of sewer overflows or cross-connections;

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

[122] The Permittee may utilize existing forms such as the Center for Watershed Protection Outfall Reconnaissance Inventory/Sample Collection Field Sheet while conducting the mapping inventory and Field Sampling (http://cfpub.epa.gov/npdes/stormwater/idde.cfm).

[123] Site visits are not required for submerged outfalls or other outfalls that may pose a threat to public safety and/or are inaccessible. A list of these outfalls shall be maintained.

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(2) Industrial, commercial, or mixed use areas;

(3) Areas with a history of past illicit discharges;

(4) Areas with a history of illegal dumping; and

(5) Areas with onsite sewage disposal systems.

iv. A list of the priority areas shall be updated annually.

2. Field Monitoring for Illicit Discharges

a. Field sampling for illicit discharges shall only occur during dry weather conditions (more than 3 days after the last rain event). The Permittee shall sample any outfalls that are flowing or ponding during dry weather conditions in response to complaints or in accordance with a field sampling schedule. The Permittee shall also conduct sampling during dry weather conditions of outfalls annually identified as priority areas.

b. The Permittee shall:

i. Conduct monitoring[124] to help determine the source of the discharge, if necessary.

ii. Conduct follow up investigations, if necessary.

3. Source Investigation and Elimination

a. The Permittee shall develop and implement written procedures for conducting investigations to identify the source of all suspected illicit discharges/illegal connections, including procedures to eliminate the discharge if the source is located.

b. The Permittee shall initiate an investigation(s) to identify and locate the source within 72 hours of becoming aware of the suspected illicit discharge/illegal connection. Sanitary sewage and/or significant discharges shall be prioritized over lesser discharges.

c. The Permittee shall track all investigations and document via an inspection report the date(s) the illicit discharge was observed; the results of the investigation; enforcement and/or corrective actions taken; and the date the investigation was closed. Records may be maintained in hardcopy and/or electronic form, but shall be retained for three (3) years.

[124] A description of indicator parameter sampling equipment is described in Chapter 12: Indicator Monitoring in the Center for Watershed Protection's Illicit Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments found at: http://www.epa.gov/npdes/pubs/idde_manualwithappendices.pdf. Sampling may be conducted using field test kits.

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d. When taking corrective action to eliminate illicit discharges, the Permittee shall comply with the following:

i. If the source of the illicit discharge has been determined to originate within the Permittee's Jurisdictional Runoff Area, the Permittee shall immediately notify the responsible party/parties of the problem (if identified), and require the responsible party to initiate all necessary corrective actions to eliminate and clean-up the area impacted by the illicit discharge. Upon being notified that the discharge has been eliminated, the Permittee shall conduct a follow-up investigation to verify that the discharge has been eliminated and cleaned-up. The Permittee shall document its follow-up investigation. Resulting enforcement actions shall follow the program's enforcement response procedures.

ii. If the source of the illicit discharge has been determined to originate outside of the Permittee's Jurisdictional Runoff Area, the Permittee shall notify the entity having jurisdiction and the Central Valley Water Board within thirty (30) calendar days of such determination and provide all of the information collected regarding efforts to identify the source. The Permittee may seek recovery and remediation costs from responsible parties or require compensation for the cost of all inspection, investigation, cleanup and oversight activities. Resulting enforcement actions shall follow the program's enforcement response procedures.

iii. If the source of the illicit discharge cannot be traced to a suspected responsible party the Permittee shall notify the Central Valley Water Board in writing within thirty (30) calendar days of such determination and describe what actions have been taken.

4. Identification and Response to Illegal Connections

a. Investigation

The Permittee, upon discovery or upon receiving a report of a suspected illegal connection, shall initiate an investigation within twenty-one (21) calendar days, to determine the following, to the extent feasible: (1) source of the connection, (2) nature and volume of discharge through the connection, and (3) responsible party for the connection.

b. Elimination

The Permittee, upon confirmation of an illegal connection to the MS4, shall ensure that the connection is:

i. Permitted or documented, provided the connection will only discharge storm water and non-storm water allowed under this Order or other individual or general NPDES Permits/WDRs, or

ii. Eliminated within 180 calendar days of completion of the investigation, using its formal enforcement authority, if necessary. If additional time is needed for elimination of the connection, the Permittee shall request an extension from the Central Valley Water Board in writing within thirty (30) calendar days of such

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determination and note what actions have been taken to date and the circumstances that will require additional time for elimination.

c. Documentation

Formal inspection reports and records shall be maintained for all illegal connection investigations as well as the formal enforcement taken to eliminate them.

5. Public Reporting of Illegal Connections and Illicit Discharges

a. The Permittee shall promote, publicize, and facilitate public reporting of IC/ID through a central contact point, including phone numbers and/or an internet site for complaints and spill reporting. The Permittee shall also provide the reporting hotline/website to Permittee staff to leverage the field staff that has direct contact with the MS4 in detecting and eliminating IC/ ID.

b. The Permittee shall implement the central point of contact and reporting hotline requirements listed in this part in one or more of the following methods:

i. By participating in the Permittee sponsored hotline/website; or

ii. By participating in one or more watershed group sponsored hotlines/websites or implementing the hotline/website individually within its own jurisdiction.

c. The Permittee shall ensure that where signage adjacent to open MS4 channels exists, that it includes information regarding dumping prohibitions and public reporting of IC/ ID.

d. The Permittee shall develop and maintain written procedures that document how complaint calls are received, documented, and tracked to ensure that all complaints are adequately addressed. The procedures shall be evaluated at least once during the permit term to determine whether changes or updates are needed to ensure that the procedures accurately document the methods employed by the Permittee. Any identified changes shall be made to the procedures subsequent to the evaluation.

e. The Permittee shall maintain documentation of the complaint calls and record the location of the reported spill or IC/ ID and the actions undertaken in response to all IC/ID complaints, **including** referrals to other agencies.

6. Spill Response Procedures

The Permittee shall develop and implement spill response procedures for all SSOs, and other spills that may discharge into its MS4. The spill response procedures shall clearly identify the agencies responsible for spill response and cleanup, telephone numbers and e-mail address for contacts, and shall contain at a minimum the following requirements:

a. Coordination with spill response teams throughout all appropriate departments, programs and/or applicable agencies so that maximum water quality protection is provided.

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b. Initiate investigation of all public and employee spill complaints within three (3) business day of receiving the complaint to assess validity of the complaint.

c. Spills that may endanger human health or the environment shall be reported to appropriate public health agencies and the Office of Emergency Services (OES) as soon as possible.

d. The spill response procedures shall be evaluated at least once during the permit term to determine whether changes or updates are needed to ensure that the spill response procedures are accurately addressed and contact information is correct/current. Any identified changes shall be made to the procedures subsequent to the evaluation.

7. Illegal Connection and Illicit Discharge Education and Training

a. 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 MS4 conveyance system. Contact information, including the procedure for reporting an illicit discharge, shall be readily available to field staff. Training program documents shall be available for review by the Central Valley Water Board.

b. The Permittee shall create a list of applicable positions and contractors which require IC/ID training and ensure that training is provided at least twice during the term of the Order. The Permittee shall maintain documentation of the training activities.

c. The training program shall include at a minimum:

i. Identification of an illicit discharge or illegal connection.

ii. Proper procedures for reporting and responding to the illicit discharge or illegal connection.

iii. An assessment of their trained staff's knowledge of illicit discharge response and refresher training as needed.

iv. Training for new staff that, 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 one year after the start of employment.

v. 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.

B. Construction Site Storm Water Runoff Control Program

The Permittee shall develop, implement, and enforce a Construction Site Storm Water Runoff Control Program for all construction sites, public or private. The Permittee's construction program shall consist of the following components:

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- BMP Requirements for All Construction Sites
- Construction Site Inventory
- Construction Plan Review and Approval Procedures
- Construction Site Inspection and Enforcement
- Construction Outreach, Education, and Training

As stated in this Order, the Permittee shall establish for its Jurisdictional Runoff Area an enforceable construction site storm water runoff control ordinance for all public and private construction sites that disturb soil.

1. Requirements for All Construction Sites

For public or private construction sites, the Permittee shall:

a. Through the use of the Permittee's construction site storm water runoff control ordinance or grading and/or building permit, require the implementation of an effective combination of erosion and sediment control BMPs to prevent erosion and sediment loss, and the discharge of construction wastes.

b. Possess the ability to identify all construction sites with soil disturbing activities that require a permit, regardless of size, and shall be able to provide a list of permitted sites upon request of the Central Valley Water Board. Permittees may use existing permit databases or other tracking systems to comply with these requirements.

c. Inspect construction sites on as needed based on the evaluation of the factors that are a threat to water quality. In evaluating the threat to water quality, the following factors shall be considered: soil erosion potential; site slope; project size and type; sensitivity of receiving water bodies; proximity to receiving water bodies; non-storm water discharges; past record of non-compliance by the operators of the construction site; and any water quality issues relevant to the particular MS4.

d. Implement the Permittee's Enforcement Response Plan to ensure that construction sites are brought into compliance with the erosion and sediment control ordinance or construction site storm water runoff control ordinance within a reasonable time period.

2. Construction Site Inventory

a. The Permittee shall maintain an inventory of all public or private projects subject to the local construction site storm water runoff control ordinance or State Water Board's General NPDES Permit for *Storm Water Discharges Associated with Construction and Land Disturbance Activities* (CGP) within its Jurisdictional Runoff Area.

b. 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 it as needed.

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The inventory shall contain, at a minimum:

i. Relevant contact information for each project (e.g., name, address, phone, email, etc. for the owner and contractor);

ii. The basic site information including location, status, size of the project and area of disturbance;

iii. The location of the project with respect to all water bodies, water bodies listed as impaired by sediment-related pollutants, and water bodies listed as impaired for sediment or turbidity under the CWA section 303(d) and approved by USEPA;

iv. Project threat to water quality;

v. Current construction phase;

vi. The required inspection frequency per the local construction site storm water runoff control ordinance;

vii. The project start and completion dates; and

viii. The date the Permittee approved the Erosion and Sediment Control Plan (ESCP).

3. Construction Plan Review and Approval Procedures

a. The Permittee shall develop and implement procedures to review and approve relevant construction plan documents.

b. The review procedures shall meet the following minimum requirements:

i. Prior to issuing a grading or a building permit with soil disturbing activity, the Permittee shall require each operator of a construction activity within its Jurisdictional Runoff Area to prepare and submit an ESCP for the Permittee's review and written approval. The Permittee shall not approve any ESCP unless it contains appropriate site-specific construction site BMPs that meet the requirements of the Permittee's construction site storm water runoff control ordinance. If the ESCP is revised, the Permittee shall review and approve those revisions.

ii. Require that the ESCP include the rationale used for selecting BMPs including supporting soil loss calculations, if necessary.

iii. Require that the ESCP list applicable permits directly associated with the grading activity, including, but not limited to the CGP, 401 Water Quality Certification, United States Army Corps 404 permit, and/or California Department of Fish and Game 1600 Agreement. Include as a condition of the building or grading permit that the operator submit evidence to the MS4 that all necessary permits directly associated with the building or grading activity have been obtained prior to

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commencing the soil disturbing activities authorized by the building or grading permit.

iv. Conduct and document review of each ESCP using a checklist or similar process.

v. Note whether the facility is known to maintain coverage under the CGP or other individual or general NPDES permits or any applicable waiver issued by the Regional or State Water Board pertaining to storm water discharges.

vi. A SWPPP developed pursuant to the CGP may substitute for an ESCP. The Permittee is responsible for reviewing applicable portions of the SWPPP for compliance with the Permittee's construction site storm water runoff control ordinance.

4. Construction Site Inspection and Enforcement

a. The Permittee shall possess and 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.

b. The Permittee shall track all inspections to document at a minimum the inspection date(s); inspection results and follow-up, if applicable; and the construction completion date. Documentation shall be recorded in inspection reports Records may be maintained in hardcopy and/or electronic form, but shall be retained for three (3) years after the construction completion date. The inspection report shall also include any identified deficiencies and the actions taken to correct the deficiencies.

c. The inspection procedures shall be implemented to verify compliance with the Permittee's construction site storm water control ordinance. At a minimum, inspections shall be conducted at priority construction sites during active construction and following active construction. Prioritization criteria for construction sites 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 (1) acre that are not subject to the CGP (sites that have obtained an Erosivity Waiver) or possess a past record of non-compliance by the operator of the construction site. Inspection frequencies shall be conducted based on this prioritized criteria and the following requirements:

i. Construction site inspections shall include assessment of compliance with the Permittee's construction site storm water runoff control ordinance, and other applicable ordinances. The Permittee may propose, for Executive Officer's 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 MEP.

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ii. During active construction, the Permittee shall conduct inspections, based on prioritization of construction sites. Active construction inspections shall include at a minimum: inspection of BMP maintenance and effectiveness installed and verification that pollutants of concern are not discharged into receiving waters.

iii. At the conclusion of the project, the Permittee shall 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.

5. Construction Outreach, Education and Training

a. The Permittee shall ensure that all staff implementing the construction site storm water runoff control program are adequately trained.

b. The Permittee may conduct in-house training or contract with consultants. Training shall be provided to the following staff positions of the MS4:

i. Plan Reviewers and Permitting Staff - The Permittee shall ensure plan reviewers and permitting staff are qualified individuals, knowledgeable in the technical review of local ESCPs, (including proper control measure selection, installation, implementation, and maintenance), and are certified pursuant to a State Water Board sponsored program as a qualified SWPPP Developer (QSD), or a designated person on staff possesses the QSD credential 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).

ii. 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 a (1) QSD; (2) QSP; or (3) a designated person on staff possesses each credential (QSD to supervise plan review, QSP to supervise inspection operations).

iii. 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.

c. The Permittee shall develop and distribute educational materials to construction site operators.

d. The Permittee shall do the following:

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

ii. Develop or utilize existing outreach tools (i.e. brochures, posters, etc.) aimed at educating construction operators on appropriate selection, installation,

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implementation, and maintenance of storm water BMPs, as well as overall program compliance.

iii. 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.

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

C. Industrial/Commercial Facilities Storm Water Runoff Control Program

The Permittee shall develop and implement an Industrial/Commercial Facilities Storm Water Runoff Control Program that meets the requirements of this Order.
The Permittee's Industrial/Commercial program shall consist of the following components:

- Inventory Industrial/Commercial Sources
- Inspect Industrial/Commercial Sources
- Source Control BMPs for Industrial/Commercial Facilities
- Industrial/Commercial Facility Enforcement
- Industrial/Commercial Facilities Education and Training

The Permittee shall establish for its Jurisdictional Runoff Area an enforceable storm water runoff control ordinance for all industrial and commercial facilities.

1. Inventory Industrial/Commercial Sources

a. The Permittee shall develop and maintain an inventory or database containing the location of all industrial and commercial facilities within its Jurisdictional Runoff Area that are sources of storm water pollution, as defined below. The inventory or database shall be maintained in electronic format and incorporation of facility information into a GIS is recommended. Sources to be included within the inventory/database are:

i. Commercial Facilities

(1) Restaurants

(2) Automotive service facilities (including those located at automotive dealerships)

(3) Retail Gasoline Outlets

(4) Nurseries and Nursery Centers (Merchant Wholesalers, Nondurable Goods, and Retail Trade)

ii. USEPA "Phase I" Facilities [as specified in 40 CFR §122.26(b)(14)]

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(1) facilities subject to storm water effluent limitation guidelines, new source performance standards, or toxic pollutant effluent standards (40 CFR N);

(2) manufacturing facilities;

(3) oil and gas/mining facilities;

(4) hazardous waste treatment, storage, or disposal facilities;

(5) landfills, land application sites, and open dumps;

(6) recycling facilities;

(7) steam electric power generating facilities

(8) transportation facilities;

(9) sewage of wastewater treatment works; and

(10) light manufacturing facilities.

iii. Other federally-mandated facilities [as specified in 40 CFR §122.26(d)(2)(iv)(C)]

(1) Municipal landfills;

(2) Hazardous waste treatment, disposal, and recovery facilities;

(3) Industrial facilities subject to section 313 “Toxic Release Inventory” reporting requirements of the Emergency Planning and Community Right-to-Know Act of 1986 [42 USC § 11023]

iv. All other commercial or industrial facilities that the Executive Officer or the Permittee determines may contribute a substantial pollutant load to the MS4.

b. The Permittee shall include the following fields of information for each source industrial and commercial facility identified in its inventory or database:

i. Name of facility

ii. Name of owner/ operator and contact information

iii. Address of facility (physical and mailing)

iv. North American Industry Classification System (NAICS) code

v. Standard Industrial Classification (SIC) code

vi. A narrative description of the activities performed and/or principal products produced

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vii. Status of exposure of materials to storm water

viii. Name of receiving water

ix. Identification of whether the facility is tributary to a CWA section 303(d) listed water body segment or water body segment subject to a TMDL, where the facility generates pollutants for which the water body segment is impaired.

x. Notation whether the facility is known to maintain coverage under the State Water Board's General NPDES Permit for *Storm Water Discharges Associated with Industrial Activities* (Industrial General Permit) or other individual or general NPDES permits or any applicable waiver issued by the Regional or State Water Board pertaining to storm water discharges.

xi. Notation whether the facility has filed a No Exposure Certification (NEC), Notice of Non-Applicability (NONA), or Notice of Termination (NOT) with the State Water Board.

c. The Permittee shall update its inventory of sources at least annually. The update shall be accomplished through collection of new information obtained through field activities or through other readily available inter- and intra-agency informational databases (e.g., business licenses, pretreatment permits, sanitary sewer connection permits, and SMARTS database).

2. Inspect Commercial Sources

The Permittee shall conduct commercial facility compliance inspections as specified below. Records may be maintained in hardcopy and/or electronic form, but shall be retained for 3years. The inspection report shall also include any identified deficiencies and the corrective actions taken to correct the deficiencies.

a. Frequency of Commercial Facility Inspections

The Permittee shall inspect all inventoried commercial facilities twice during the 5-year term of the Order, provided that the first compliance inspection occurs no later than two (2) years after the Permittee receives its Notice of Applicability. A minimum interval of six (6) months between the first and the second mandatory compliance inspection is required.

b. Scope of Commercial Facility Inspections

The Permittee shall inspect all commercial facilities to confirm that BMPs are being effectively implemented in compliance with municipal ordinances. At each facility, inspectors shall verify that the operator is implementing effective source control BMPs for each corresponding activity.

3. Inspect Industrial Sources

The Permittee shall conduct industrial facility compliance inspections as specified below. Records may be maintained in hardcopy and/or electronic form, but shall be retained for

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three (3) years. The inspection report shall also include any identified deficiencies and the corrective actions taken to correct the deficiencies.

a. Frequency of Industrial Facility Compliance Inspections

i. Minimum Inspection Frequency

The Permittee shall perform an initial compliance inspection at all inventoried industrial facilities no later than 2 years after the effective date of this Order. A minimum interval of 6 months between the first and the second compliance inspection is required. A facility need not be inspected more than twice during the term of the Order.

b. Scope of Industrial Facility Inspections

The Permittee shall confirm that each industrial facility:

i. Has a current Waste Discharge Identification (WDID) number for coverage under the Industrial General Permit, and that a Storm Water Pollution Prevention Plan (SWPPP) is available on-site; *or*

ii. Has applied for, and has received a current No Exposure Certification for facilities subject to this requirement;

iii. Is effectively implementing BMPs in compliance with municipal ordinances. Facilities shall implement effective source control BMPs, unless the pollutant generating activity does not occur. If the BMPs are not adequately protective, the Permittee may require additional site-specific controls.

Applicable industrial facilities identified as not having either a current WDID or No Exposure Certification shall be notified that they shall obtain coverage under the Industrial General Permit and shall be referred to the Central Valley Water.

4. Source Control BMPs for Industrial and Commercial Facilities

Effective source control BMPs for the activities shall be implemented at commercial and industrial facilities, unless the pollutant generating activity does not occur. Pollutant generating activities include unauthorized non-storm water discharges; accidental spills/leaks, vehicle or equipment fueling, cleaning or repair; outdoor liquid storage, equipment operations, or storage of raw materials; storage and handling of solid waste, building and grounds maintenance; parking or storage area maintenance; and storm water conveyance system maintenance practices.

5. Industrial Site Inspection and Enforcement

a. The Permittee shall use their legal authority to implement procedures for inspecting industrial sites and conduct enforcement if necessary. The Permittee may leverage existing inspection procedures and personnel to conduct industrial site inspections and enforcement that meet the requirements of this Order.

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b. The Permittee shall track all inspections to document at a minimum the inspection date(s); inspection results and follow-up, if applicable. Documentation shall be recorded in inspection reports Records may be maintained in hardcopy and/or electronic form, but shall be retained for three (3) years. The inspection report shall also include any identified deficiencies and the corrective actions taken to correct the deficiencies.

c. The inspection procedures shall be implemented to verify compliance with the Permittee's storm water control ordinance. The Permittee shall inspect all inventoried commercial facilities twice during the 5-year term of the Order, provided that the first mandatory compliance inspection occurs no later than 2 years after the effective date of this Order. A minimum interval of 6 months between the first and the second mandatory compliance inspection is required. Prioritization criteria for industrial sites shall be based on project threat to water quality. Site threat to water quality includes sensitivity of receiving water bodies, proximity to receiving water bodies, non-storm water discharges, projects that are not subject to the IGP. Inspection frequencies shall be conducted based on this prioritized criteria and the following requirements:

   i. Industrial site inspections shall include assessment of compliance with the Permittee's site storm water runoff control ordinance, and other applicable ordinances. The Permittee may propose, for Executive Officer's approval, an alternative approach for industrial site oversight, provided the Permittee demonstrates the approach will be equally effective at reducing the discharge of pollutants from industrial sites to the MEP.

   ii. Active industrial site inspections shall include at a minimum: inspection of maintenance of BMPs, and effectiveness installed and verification that pollutants of concern are not discharged into receiving water bodies.

d. 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 Central Valley Water Board and include documentation of the notifications in the Mid-term and End-term Reports.

6. Industrial/Commercial Facilities Education and Training

a. At least once during the term of this Order, the Permittee shall notify the owner/operator of each of its inventoried commercial and industrial sites identified of the BMP requirements applicable to the site/source.

D. Municipal Operations Storm Water Runoff Control Program

The Permittee shall develop and implement a Municipal Operations Storm Water Runoff Control Program that meets the requirements of this Order. The Municipal Operations Program shall consist of the following components.

- Inventory of Permittee-Owned and Operated Facilities
- Facility Assessment

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- Storm Water Pollution Prevention Plans
- Inspections, Visual Monitoring and Remedial Action
- MS4 conveyance system Assessment and Prioritization
- Maintenance of MS4 conveyance system
- Permittee Operations and Maintenance Activities
- Municipal Operations/Pollution Prevention and Good Housekeeping Education and Training

1. Inventory of Permittee-Owned and Operated Facilities

a. The Permittee shall develop and maintain an inventory of Permittee-owned or operated facilities within their Jurisdictional Runoff Area that are a threat to water quality, if applicable.

b. The inventory shall include all Permittee-owned or operated facilities within their Jurisdictional Runoff Area that are potential significant sources of pollution in storm water, including the following if applicable:

i. Airports
ii. Animal control facilities
iii. Chemical storage facilities
iv. Composting facilities
v. Equipment storage and maintenance facilities (including landscape-related operations)
vi. Fuel farms
vii. Hazardous waste disposal facilities
viii. Hazardous waste handling and transfer facilities
ix. Incinerators
x. Landfills
xi. Materials storage yards
xii. Pesticide storage facilities
xiii. Public parking lots
xiv. Public golf courses
xv. Public swimming pools
xvi. Public parks
xvii. Public works yards
xviii. Public marinas
xix. Public roads
xx. Recycling facilities
xxi. Salt or de-icing storage facilities
xxii. Solid waste handling and transfer facilities
xxiii. Transportation hubs (e.g. bus transfer stations)
xxiv. Vehicle storage and maintenance areas

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xxv. Vehicle fueling facilities

xxvi. Other (as directed Central Valley Water Board)

2. Facility Assessment

a. 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 priority areas.

b. Conduct an initial review and assessment of all municipally owned or operated facilities to determine their potential to impact surface waters. The assessment shall include the following:

i. Based on the initial assessment, the Permittee shall identify those facilities that have a high potential to generate storm water and non-storm water pollutants as pollutant priority areas 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, 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 priority areas 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 and are located within the Permittee's Jurisdictional Runoff Area.

ii. The Permittee shall document implemented procedures to conduct the comprehensive assessment along with a copy of any site evaluation checklists used to conduct the comprehensive assessment.

3. Storm Water Pollution Prevention Plans

a. The Permittee shall develop and implement SWPPPs for priority facilities. If the Permittee has an existing document such as Hazardous Materials Business Plan, Spill Prevention Plan, facility pollution prevention plan, or other equivalent document for a priority facility, the Permittee is not required to develop a SWPPP for that facility.

b. The Permittee shall implement the following:

i. 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 as needed to minimize the discharge of pollutants to protect water quality. [125]

[125] The Permittee may utilize the Center for Watershed Protection guide on Urban Subwatershed and Site Reconnaissance, or equivalent, as guidance.

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ii. 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.

iii. 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

4. Inspections, Visual Monitoring and Remedial Action

a. The Permittee shall conduct regular inspections of Permittee-owned and operated facilities. Records may be maintained in hardcopy or electronic form, but shall be retained for three (3) years.

b. Inspections shall be conducted as follows:

i. Annual Priority Facility inspections – At least once per year, the Permittee shall conduct a comprehensive inspection of each priority 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.

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ii. Non-Priority Facility Inspection. At a minimum, inspect each inventoried municipal facility that is not a priority facility, once per five (5) years.

5. MS4 Conveyance System Assessment and Prioritization

a. The Permittee shall develop and implement procedures to assess and prioritize MS4 conveyance system maintenance, including catch basins, detention basins, pump stations, and above-ground conveyances within the Permittee's urbanized area.

b. The Permittee shall assess and prioritize MS4 conveyance system facilities for cleanout. The Permittee shall 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 basins meeting any of the following criteria:

i. Catch basins known to accumulate a significant amount of sediment, trash, and/or debris;

ii. Catch basins collecting large volumes of runoff;

(1) Catch basin collecting runoff from area that do not receive regular sweet sweeping;

(2) Catch basins collecting runoff from drainage areas with exposed or disturbed soil; or

(3) Catch basins that receive citizen complaints/reports.

6. Maintenance of MS4 Conveyance System

a. The Permittee shall begin maintenance of all high priority MS4 conveyance systems on an ongoing schedule.

b. The Permittee shall begin maintenance of MS4 conveyance systems according to the procedures and priorities developed according to this Order. At a minimum the Permittee shall:

i. Inspect MS4 conveyance systems –Develop and implement a strategy to inspect MS4 conveyance systems within the Permittee's Jurisdictional Runoff Area. At a minimum, inspect all high priority catch basins and systems annually.

ii. Clean catch basins – 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.

iii. 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”). Drop inlets/ with illegible or missing labels shall be recorded and re-labeled within one month of receiving a report of a damaged or missing label.

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iv. 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.

v. 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.

***7.* Permittee Operations and Maintenance O&M) Activities**

a. The Permittee shall assess their O&M activities for potential to discharge pollutants in storm water and inspect all O&M BMPs on a regular basis.

b. The Permittee shall:

i. 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 (as applicable), 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 (e.g.. Earth Day, Coastal Cleanup Day, Creek Week)

(6) Green waste deposited in the street

(7) Discharges from potable water sources not regulated by other NPDES permit.

8. Municipal Operations/Pollution Prevention and Good Housekeeping Education and Training

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a. The Permittee shall develop and implement a training program for key employees involved in implementing pollution prevention and good housekeeping practices as specified in this Order. The Permittee shall train employees on how to incorporate pollution prevention/good housekeeping techniques into Permittee operations. All new hires whose jobs include implementation of pollution prevention and good housekeeping practices shall receive this training within the first year of their hire date.

b. The training program shall include the following:

i. Training for the key employees implementing this program element. This training shall include a general storm water education component, discussion of new technologies, operations, or responsibilities, 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.

ii. An assessment of trained staff's knowledge of pollution prevention and good housekeeping, as needed.

E. Public Involvement and Participation Program

The objectives of the Public Involvement and Participation Program are as follows:

- Involve the public in the development and implementation of the Permittee's Storm Water Management Program; and

- Involve a diversity of socio-economic groups and ethnic communities in their respective jurisdictions to participate in implementation of the storm water program.

1. The Permittee shall develop and implement a comprehensive storm water education and outreach program. The 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 Education and Outreach Program shall be designed to measurably increase the knowledge and awareness of targeted audience regarding the municipal MS4 conveyance 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. The Permittee shall, at a minimum:

a. Develop and implement an education strategy that establishes education tasks based on water quality problems, target audiences, and anticipated task effectiveness. The strategy shall include identification of who is responsible for implementing specific tasks and a schedule for task implementation. The strategy shall 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 every five years to gauge the level of awareness in target audiences and effectiveness of education tasks.

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c. Develop and convey a specific storm water message that focuses on the following:

   i. Local pollutants of concern;

   ii. Target audiences; and

   iii. 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[126], 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 shall 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.

i. Develop and convey messages specific to proper application of pesticides, herbicides, and fertilizers.

j. 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.

k. Conduct storm water-friendly education for organized car wash participants and provide information pertaining to car wash discharge reduction. [127]

l. Develop and convey messages specific to mobile cleaning and pressure wash businesses.

[126] For example, Sacramento Stormwater Quality Partnership's River Friendly Landscaping (http://www.ecolandscape.org/riverfriendly/) and the Water Efficient Landscape Ordinance (WELO)

[127] The Permittee may use the Sacramento Stormwater Quality Partnership's River Friendly Carwash Program, or equivalent, for guidance.

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2. 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.

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

    a. 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.

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

    c. Ensure the public can easily find information about the Permittee's storm water program.

F. Planning and Land Development/Post Construction Storm Water Management Program

The Permittee shall develop and implement the Planning and Land Development/Post Construction program to minimize the short- and long-term impacts on receiving water quality from new development and redevelopment.

The objectives of the Planning and Land Development program are to:

- Incorporate water quality and watershed protection principles into the Permittee's policies, planning procedures (e.g., General Plan, CEQA analyses, planning/entitlement processes, etc.) and development permit approval process;
- Develop and implement planning and land development standards;
- Ensure that post-construction storm water quality controls are required and properly selected during the development approval process to minimize storm water quality impacts to the MEP for both private priority development projects and Permittee-owned development projects;
- Ensure that post-construction storm water quality controls are selected based on project- and site-specific conditions and land use characteristics, as well as receiving water impacts;
- Ensure that selected post-construction storm water quality controls will remain effective upon project completion by requiring appropriate maintenance provisions and/or agreements and/or establishment of a maintenance district for all priority development projects;

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- Develop and/or maintain a tracking system to track the ownership and maintenance history of selected post-construction storm water quality controls to ensure adequate long-term maintenance; and
- Provide regular internal training to key staff on applicable components of the Planning and Land Development program.

The Permittee shall review, update as needed, and continue to implement its Planning and Land Development program. Any new or updated Planning and Land Development Program components shall be included in the SWMP. The Planning and Land Development/Post Construction[128] program shall incorporate the following components:

1. Priority Development Projects[129]

The Permittee shall define the criteria and thresholds for the Priority Development Projects that will be subject to the requirements specified as a part of this program. A Permittee may propose criteria that differ from those listed in the definition of "Priority Development Project" in **Attachment C** as long as its SWMP demonstrates that the criteria are designed to achieve equivalent protection of water quality that would be achieved by the criteria listed in **Attachment C**. If a Permittee has already received prior board approval of alternate criteria for defining Priority Development Projects, the Permittee's SWMP need only reference the Central Valley Water Board order providing such approval, or else append a copy of the board decision approving the alternate criteria to the SWMP. However, the Executive Officer retains the discretion to require a Permittee to revisit and justify either its existing criteria or revised criteria.

In addition, the Permittee shall develop policies to define and promote preferred types of development (infill, redevelopment). These policies may include less stringent criteria for preferred priority projects.

2. Site Design Measures

Each Permittee shall require priority new development and redevelopment projects to assess the possibility of integrating Site Design strategies. Site Design is a storm water management strategy that emphasizes conservation and use of existing natural site features integrated with distributed, small-scale storm water controls to more closely mimic natural hydrologic patterns in residential, commercial, and industrial settings.

3. Source Control Measures

The Permittee shall develop strategies that control the sources of pollutants or constituents (i.e., the point where water initially meets the ground) to minimize the

[128] *Post-Construction Performance Standards & Water Quality-Based Requirements, A Compendium of Permitting Approaches, Municipal Separate Storm Sewer System Permits*, EPA 833-R-14-003, USEPA, June 2014.

[129] For categories of priority development projects, see the definition in **Attachment C** (*Acronyms, Abbreviations, and Definitions*) which is based on State Water Board Order WQ-2000-11, approved on 5 October 2000 and State Water Board Memorandum dated 26 December 2000 pertaining to the decision in State Water Board Order WQ-2000-11 to use Standard Urban Storm Water Mitigation Plans (SUSMPs) in Phase I MS45 Permits.

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transport of urban runoff and pollutants offsite and into the Permittee MS4. Source controls are intended to keep pollutants from mixing with runoff. All development projects shall require permanent markers discouraging dumping to be applied to storm drain inlets. In addition, source control measures shall be required for the following areas:

a. Fueling areas

b. Loading areas

c. Outdoor material storage areas

d. Outdoor work areas (e.g., processing, manufacturing)

e. Vehicle and equipment wash areas

f. Waste management areas (garbage, recycling, restaurant food waste)

The Permittee's development standards shall require new development and redevelopment projects to incorporate applicable source controls.

4. Treatment Control Measures

The Permittee shall require Priority Development Projects to assess the feasibility and necessity of incorporating treatment control measures. Storm water quality treatment control measures are engineered technologies designed to remove pollutants from site runoff. Treatment control measures may include, but are not limited to: bioretention planters, vegetated filter strips and swales, infiltration trenches and basins, sand filters, detention basins and select proprietary devices.

The Permittee's development standards shall require Priority Development Projects to incorporate treatment control measures as needed and feasible. The Permittee shall also consider that the required treatment volume or flow can be reduced or met through the use of LID measures.

5. Numeric Sizing Criteria

Where utilized, the Permittee shall require the implementation of storm water quality treatment control measures and applicable LID strategies to be designed to treat either the water quality flow (WQF) or water quality volume (WQV) as follows:

a. WQF-based measures shall be designed to treat:

i. The maximum (peak) flow rate of runoff produced by the 85th percentile hourly precipitation intensity, based on historical rainfall records, multiplied by a factor of two.

ii. The maximum flow rate of runoff as determined from local historical rainfall records, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile hourly rainfall intensity multiplied by a factor of two; or

iii. The Permittee justified maximum flow rate that is determined as part of the

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Development Standards (submitted as a part of the SWMP) that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile hourly rainfall intensity multiplied by a factor of two.

~~a.~~b. WQV-based measures shall be designed to capture and treat either:

i. The maximized storm water quality capture volume for the area, based on historical rainfall records, determined using the formula and volume capture coefficients set forth in *Urban Runoff Quality Management (WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87,(1998)*, pages 175-178) or equivalent method; or

(1) The volume of runoff produced from a 85th percentile, 24-hour storm event, as determined for the local historical rainfall records; or

(2) Eighty (80) percent of the volume of annual runoff, determined in accordance with the methodology set forth in Appendix D of the California Storm Water Best Management Practices Handbook (Stormwater Quality Task Force, 1993), using local historical rainfall records; or

(3) The Permittee justified design storm volume that is determined as part of the Development Standards (submitted as a part of the SWMP). The treatment of this volume shall achieve approximately the same reduction in pollutant loads achieved by treatment of the 85th percentile, 24-hour storm event.

Selected sizing criteria shall be incorporated into the Permittee's development standards. Storm flows above these values shall be considered compliant with the Order as the levels of dilution available in such flows reduce concentrations accordingly.

6. Infiltration BMPs

The Permittee shall consider the type of development and resulting storm water discharge and, if appropriate, consider the use of structural BMPs that are designed to primarily function as infiltration devices (e.g., infiltration trenches, infiltration basins, bioretention planters, porous pavement, dry wells[130]) so long as the devices will not adversely impact groundwater quality. These restrictions and when they should be applied shall be described in the Permittee's Development Standards.

7. Maintenance Agreement and Transfers

The Permittee shall require Priority Development Projects to ensure selected post-construction storm water quality controls will remain effective upon project completion by requiring legal agreements, covenants, or CEQA mitigation requirements, and/or conditional use permits.

8. Low Impact Development Strategies

[130] The Regional and/or State Boards are in the process of developing guidelines specific to the design and siting of dry wells that should be followed when established.

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The Permittee shall require Priority Development Projects to assess the possibility of integrating Low Impact Development (LID) strategies. LID is a storm water management strategy that emphasizes conservation and use of existing natural site features integrated with distributed, small-scale storm water controls to more closely mimic natural hydrologic patterns in residential, commercial, and industrial settings. LID employs a variety of natural and structural features that reduce the rate of runoff, filter out its pollutants, and facilitate the infiltration of water into the ground. Furthermore, Senate Bill 985 and the State Water Resources Control Board's Storm Water Strategy encourage the use of storm water as a resource to augment water supply.

LID measures may include, but are not limited to: stream setbacks and buffers, soil amendments, tree planting and preservation, rooftop and impervious area disconnection, porous pavement, eco roofs, bioretention planters, and rain barrels or cisterns. The Permittee's development standards shall require Priority Development Projects to integrate LID strategies where feasible to do so.[131] This Order encourages the Permittees to develop storm water management programs that promote the use of storm water as a resource.

This Order requires the Permittee to incorporate Low Impact Development into the Planning and Land Development program.

9. Hydromodification Management Plan

The Permittees shall require Priority Development Projects, not otherwise exempted, that will discharge into natural drainage systems, to implement hydrologic control measures to prevent accelerated downstream erosion and to protect stream habitat.

a. This Order requires the Permittees to develop and implement a Hydromodification Management Plan (HMP). The HMP shall include measures that manage the increases in the magnitude (e.g., flow control), frequency, volume and duration of runoff from development projects in the range of flows to control in order to protect natural drainage systems from increased potential for erosion. The HMP may include one (or more) of the following management strategies:

   i. Erosion Potential: Hydromodification control in natural drainage systems shall be achieved by maintaining the Erosion Potential (Ep) in streams at a value of approximately 1, unless an alternative value can be shown to be protective of the natural drainage systems from erosion, incision, and sedimentation that can occur as a result of flow increases from impervious surfaces and prevent damage to stream habitat in natural drainage system tributaries (**Attachment I**, *Determination of Erosion Potential*).

   ii. Flow Duration Control: post-project runoff shall not exceed estimated pre- project rates and/ or durations (At least 90% of the flows must not have discharge frequencies (% of time) that exceed the pre-project discharge frequencies in the range of flows to control. Those flows that have frequencies that exceed pre-

[131] The *California Phase II LID Sizing Tool*, a web-based tool, may assist Permittees in the selection and sizing of LID BMPs. http://owp-web1.saclink.csus.edu/LIDTool/Start.aspx

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project discharge frequencies may not exceed it by more than 10%.) where the increased storm water discharge rates and/or durations will result in increased potential for erosion.

iii. Other equivalent design criteria that is equally protective of natural drainage systems. This method will be subject to approval by the Executive Officer.

Natural drainage systems that are subject to the hydromodification assessments and controls include all drainages that have not been improved (e.g., channelized or armored with concrete, shotcrete, or rip-rap) or drainage systems that are tributary to a natural drainage system, except as provided below (Exemptions to Hydromodification Controls). The clearing or dredging of a natural drainage system does not constitute an "improvement."

b. Exemptions to Hydromodification Controls: The Permittees may exempt the following Priority Development Projects from implementation of hydromodification controls where assessments of downstream channel conditions and proposed discharge hydrology indicate that adverse hydromodification effects to beneficial uses of natural drainage systems are unlikely:

i. Projects that are replacement, maintenance or repair of the Permittees' existing flood control facilities, storm drains, public utilities, or transportation network.

ii. Redevelopment Projects (e.g., infill) that do not increase the effective impervious area or decrease the infiltration capacity of pervious areas compared to the pre-project conditions.

iii. Construction of infill projects in highly developed watersheds, where the potential for single-project and/or cumulative impacts is minimal.

iv. Projects that have any increased discharge directly or via a storm drain to a sump, drainage pump station, lake, area under tidal influence, or into a waterway (e.g., perennial river) that is not susceptible to hydromodification impacts.

v. Projects that discharge directly or via a storm drain into concrete or otherwise engineered (not natural) channels (e.g., channelized or armored with rip rap, shotcrete, concrete lined, etc.), which, in turn, discharge into a receiving water that is not susceptible to hydromodification impacts.

Hydromodification controls may include one, or a combination of onsite, regional or sub-regional hydromodification control measures, LID strategies, or stream and riparian buffer restoration measures. Any in-stream restoration measure shall not adversely affect the beneficial uses of the natural drainage systems. LID BMPs implemented on single family homes are sufficient to comply with Hydromodification criteria.

The HMP shall be developed no later than 1-year after the approval of the SWMP by the Regional Board. If a Permittee or group of Permittees has already developed, or is in the process of developing, a HMP, they may assess the HMP and the method in which it was developed to determine what modifications (if any) are necessary to comply with this provision.

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The Permittees' development standards shall require Priority Development Projects to integrate hydromodification strategies, as needed. LID strategies and treatment controls may simultaneously address the hydromodification management requirements.

10. Technical Guidance

The Permittee shall develop and maintain a Technical Guidance manual of development standards consistent with the requirements of the provisions in this program element. The Technical Guidance shall include site design measures, source controls, treatment, controls, LID, hydromodification, and erosion and sediment control strategies, if not already included in other applicable technical guidance. The schedule for development, modification and implementation of the Technical Guidance manual shall be included in the Permittee's SWMP. The Permittee may adopt existing technical guidance manuals/standards to assist in meeting the intent of this Order.

The Permittee's development standards shall require Priority Development Projects to integrate LID and hydromodification strategies to meet the requirements of this Order

11. Mitigation Funding

The Permittee may propose a management framework, for approval by the Executive Officer, to support regional or sub-regional solutions to storm water pollution, where any of the following situations occur:

a. A waiver for impracticability is granted; or

b. Legislative funds become available; or

c. Off-site mitigation is required because of loss of environmental habitat; or

d. An approved watershed management plan or a regional storm water mitigation plan exists that incorporates an equivalent or improved strategy for storm water mitigation.

12. Regional Storm Water Mitigation

The Permittee may propose an existing or new regional or sub-regional storm water mitigation program as a part of the SWMP to substitute completely or in part for the development standards requirements. The Executive Officer may approve such a program if the Permittee can demonstrate that its implementation will:

a. Result in equivalent or improved storm water quality;

b. Protect stream habitat;

c. Promote cooperative problem solving by diverse interests;

d. Be fiscally sustainable and have secure funding;

e. Be completed in five years, or as soon as possible if an extraordinarily large or phased in project, including the construction and start-up of treatment facilities.

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13. Alternative Compliance Program to Onsite LID and Hydromodification Implementation

At the discretion of the Permittee, Priority Development Projects may be allowed to participate in an alternative compliance program in lieu of requiring the implementation of LID and hydromodification measures onsite.[132] The alternative compliance program is available to a Priority Development Project only if the Priority Development Project applicant enters into a voluntary agreement with the Permittee authorizing this arrangement. In addition to the voluntary agreement, relief from implementing LID and hydromodification measures onsite may be authorized by the Permittee under the following conditions for candidate projects:

a. The Priority Development Project applicant agrees to fund, contribute funds to, or implement a candidate project;

b. The Permittee shall determine that implementation of the candidate project will have an equal or greater overall water quality benefit than requiring implementation of LID and hydromodification measures onsite;

c. If the Priority Development Project applicant chooses to fully or partially fund a candidate project, then the Permittee shall ensure that the funds to be obtained from the Priority Development Project applicant are sufficient to mitigate for impacts caused by not fully implementing LID and hydromodification measures onsite;

d. The voluntary agreement to fund, partially fund, or implement a candidate project shall include reliable sources of funding and a plan for operation and maintenance of the candidate project. Reliable sources of funding may include escrow accounts, bonds, letters of credit, or other such mechanisms;

e. Design of the candidate project shall be conducted under an appropriately qualified engineer, geologist, architect, landscape architect, or other professional, licenses where applicable, and competent and proficient in the fields pertinent to the candidate project design;

f. The candidate project shall be constructed as soon as possible, but no later than four (4) years after the certificate of occupancy is granted for the first Priority Development Project that contributed funds toward the construction of the candidate project, unless a longer period of time is authorized by the Executive Officer; and

g. If the candidate project is constructed after the Priority Development Project is constructed, the Permittee shall require temporal mitigation for pollutant loads and altered flows that are discharged from the Priority Development Project.

14. Alternative Compliance In-Lieu Fee Structure

[132] Such as the National Fish and Wildlife Foundation's In-Lieu Fee Program or other similar mitigation bank that provides a mitigation option alternative. http://www.nfwf.org/ilf/Pages/hom.aspx

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If the Permittee chooses to allow a Priority Development Project applicant to fund, or partially fund a candidate project or an alternative compliance project, then the Permittee shall develop and implement an in-lieu fee structure. This may be developed individually or with other Permittees and/or entities, as a means for designing, developing, constructing, operating and maintaining offsite alternative compliance projects. The in-lieu fee shall be transferred to the Permittee (for public projects) or an escrow account (for private projects) prior to the construction of the Priority Development Project. Any in-lieu fee structure that the Permittee chooses to implement shall be submitted to the Central Valley Water Board for review and acceptance as part of the SWMP.

15. Alternative Compliance Water Quality Credit System Option

The Permittee may develop and implement an alternative compliance water quality credit system option, individually or with other Permittees and/or entities, provided that such a credit system clearly exhibits that it will not allow discharges from Priority Development Projects to cause or contribute to a net impact over and above the impact caused by projects meeting the onsite LID and hydromodification implementation requirements. Any credit system that the Permittee chooses to implement shall be submitted to the Central Valley Water Board for review and acceptance as part of the SWMP.

16. Retrofitting and Rehabilitation

a. Retrofitting Areas of Existing Development

The Permittee should develop a planning process that will incorporate consideration of storm water retrofit projects[133] to address existing development that are identified as significant contributors of PWQCs. The planning process should consider the following:

i. A storm water retrofit strategy that corrects prior design or performance deficiencies; disconnects impervious areas; storm water capture[134] to mitigate drought conditions, improves groundwater recharge and/or infiltration performance; addresses PWQCs; demonstrates new technologies; and/or supports stream restoration activities;

ii. Develop an inventory of potential retrofit projects;

iii. Establish a prioritization strategy to rank each project considering;

(1) PWQCs;

(2) Potential pollutant removal and drainage area affected;

[133] Schuler, T., Hirchmann, D., Novotney, M., and J. Zilinski. *Urban Watershed Restoration Manual No. 3: Urban Stormwater Retrofit Practices*, Center for Watershed Protection, prepared for Office of Wastewater Management, USEPA, July 2007, www.cwp.org..

[134] *Stormwater Capture Potential in Urban and Suburban California*, Issue Brief, Natural Resources Defense Council, June 2014.

TENTATIVE

(3) Stream channel protection capability;

(4) Design, construction, inspection, and maintenance costs of facility, considering the applicability of storage or on-site retrofits;

(5) Ability to implement the project; ~~and~~

(6) Potential for cumulative benefit; and

~~(6)~~(7) Infiltration capacity of the subsurface.~~.~~

b. Stream, Channel, and/or Habitat Restoration in ~~-~~Areas of Existing Development

The Permittee should develop a planning process to evaluate ~~rehabilitation projects for streams, channels and/or habitats in existing development to stabilize water bodies at industrial or commercial sites, or municipal sites, facilities, or areas, or residential areas~~opportunities for rehabilitation projects in areas of existing development. The ~~identification~~ planning process should consider:

i. Developing a rehabilitation strategy that addresses storm water runoff flows and durations that cause or contribute to hydromodification in receiving waters; rehabilitates channelized or hydromodified streams; restores wetlands and/or riparian habitats; restores watershed functions; and/or restores beneficial uses of receiving waters;

ii. Develop an inventory of potential rehabilitation ~~candidates~~projects;

iii. Establish a prioritization strategy to rank each project considering;

(1) PWQCs;

(2) Potential pollutant removal and drainage area affected;

(3) Bank stabilization capability;

(4) Design, construction, inspection, and maintenance costs~~ of facility~~, considering the applicability of storage or on-site retrofits;

(5) Ability to implement the project; and

(6) Potential for cumulative benefit.

17. Coordination, Enforcement and Tracking

a. The Permittee shall provide for the review of proposed project plans and require measures to ensure that all applicable Priority Development Projects will be in compliance with their storm water ordinances, and development standards.

TENTATIVE

b. The Permittee shall develop a process by which development standards will be implemented and include that process within the SWMP. The process shall identify at what point in the planning process development projects will be required to meet development standards. The process shall also include identification of the roles and responsibilities of various municipal departments, as applicable, in implementing the development standards, as well as any other measures necessary for the implementation of development standards.

c. The Permittee shall develop a GIS or other electronic system for tracking projects that have been issued a permit for the construction of post-construction treatment control BMPs, including ownership information and responsibility and maintenance information and history.

18. Planning and Land Development Program Education and Training

The Permittee shall develop and implement a training program for key municipal staff and/or agency contracted staff involved in implementing the Planning and Land Development Program as specified in this Order. The Permittee shall train municipal staff and/or agency contracted staff on how to incorporate low impact development, hydromodification, and other techniques into private and public projects. All new hires whose jobs include implementation of Planning and Land Development Program shall receive this training within the first year of their hire date. The training program shall include the following:

a. A focus on general storm water education, new methods or technologies, application of permit requirements and responsibilities, and the permit requirements that apply to the staff being trained.

b. Guidance on appropriate BMPs to apply to private and public projects.

c. An assessment of trained staff and contractor's knowledge of the Planning and Land Development Program.

d. Revisions to the training as needed.

MONITORING REQUIREMENTS

A. Purpose

The monitoring program provides a framework for the adaptive management of the Permittee's storm water program. Each Permittee will document their approach for complying with the monitoring program requirements in the SWMP and provide a detailed implementation schedule as a part of the Work Plan. For the purposes of this section, monitoring includes the collection of both programmatic and water quality data and information.

The primary objectives of the monitoring program may include, but are not limited to:

1. Assessing compliance with this Order;

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2. Assessing the overall health of receiving waters and evaluating long-term trends in receiving water quality;

3. Characterizing urban runoff and evaluating the long term trends;

4. Assessing the impacts on receiving waters resulting from urban runoff;

5. Identifying the likely sources of pollutants and PWQCs;

6. Assessing the effectiveness of specific storm water quality controls and/or management actions;

7. Supports the development of water quality models and/or other data assessment tools; and/or

8. Identifying modifications to improve the effectiveness of the SWMP.

Ultimately, the goal of the monitoring program is to inform the Permittee, to the extent feasible, about the nexus between the implementation of the storm water program, the quality of the discharges from the MS4, and the resulting impact, if any, on the receiving water. This goal will be accomplished through monitoring, assessing, and reporting the conditions of the receiving waters, discharges from the MS4, pollutant sources, and the effectiveness of the water quality improvement strategies implemented as part of the SWMP and Work Plan.

B. Monitoring Study Design and Implementation Schedule

The Permittees shall include a Monitoring Study Design and Implementation Schedule with its SWMP that complies with the monitoring requirements provided in **Attachment G** (*Specific Provisions for Total Maximum Daily Loads Applicable to Order R5-2016-XXXX*) and **Attachment H** (*Standard Permit Provisions and General Provisions*) and address the following:

1. Monitoring Approach

   The SWMP should specify the monitoring approach selected including a narrative summary outlining the rationale for selecting the approach. The monitoring approach shall include a periodic re-evaluation of constituents of concern in storm water (e.g. heavy metals, bacterial indicators, and current-use pesticides).

2. Monitoring Parameters and Methods

   The SWMP shall specify:

   a. The parameters being sampled, including those required parameters listed in **Table 2** (**Attachment E**, *Monitoring Tables*);

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b. Field and laboratory methods, including Reporting Limits, Method Detection Limits, and Minimum Levels[135]

c. Sampling types and frequencies.

3. Monitoring Locations

The SWMP shall include the following to specify monitoring site locations:

a. Justification for each monitoring/sampling location chosen.

b. A map showing the following:

i. Surface water bodies with the Jurisdictional Runoff Area, including those that are CWA section 303(d) listed or where a TMDL has been developed;

ii. Identification of MS4 outfalls that discharge to surface water bodies located within the Jurisdictional Runoff Area;

iii. The location of monitoring/sampling locations within the Jurisdictional Runoff Area with station identification numbers and descriptions.

4. Quality Assurance/Quality Control

The SWMP shall include a Quality Assurance Project Plan (QAPP), in accordance with the quality assurance/quality control (QA/QC) and other protocols (e.g., Standard Operating Procedures for bioassessment) established by the Surface Water Ambient Monitoring Program (SWAMP). All samples should be collected and analyzed in accordance with the methods specified in 40 CFR Part 136. Field testing, sample collection, preservation, laboratory testing, including quality control procedures and all record keeping shall comply with the most current version of the SWAMP QAPP which 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 QAPP is available at:

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

5. Local Water Quality Monitoring Requirements

a. type of monitoring:

[135] For priority pollutants, MLs shall be used for all analyses, unless otherwise specified. If a particular ML is not attainable in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure may be used instead.

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i. dry weather screening;

ii. wet[136] and dry weather events, including rainfall data, hydrographs, and a narrative description of the storm or dry weather event;

iii. MS4 discharge, collected within six (6) hours of receiving water sampling event and includes the first flush event, and other sampling events spread over a wet weather season, and dry weather sampling events;

iv. receiving water, collected within six (6) hours of MS4 discharge sampling event and includes the first flush event, and other sampling events spread over a wet weather season, and dry weather sampling events;

v. bioassessment;

(1) The following bioassessment samples and measurements must be collected at least once during a dry weather sampling event during the term of this Order:

(a) Macroinvertebrate samples must be collected in accordance with the "Reachwide Benthos (Multihabitat) Procedure" in the most current Surface Water Ambient Monitoring Program (SWAMP) Bioassessment Standard Operating Procedures (SOP), and amendments, as applicable;[137]

(b) The "Full" suite of physical habitat characterization measurements must be collected in accordance with the most current SWAMP Bioassessment SOP, and as summarized in the SWAMP Stream Habitat Characterization Form – Full Version;[138] and

(c) Freshwater algae samples must be collected in accordance with the SWAMP Standard Operating Procedures for Collecting Algae Samples.[139] Analysis of samples must include algal taxonomic composition (diatoms and soft algae) and algal biomass.

(2) The bioassessment samples, measurements, and appropriate water chemistry data must be used to calculate the following:

[136] A qualifying wet weather monitoring event has 0.25 inches accumulated rainfall over the past 24-hours with a 50% percent chance of precipitation reported by the National Weather Service.
[137] Ode, P.R.. 2007. Standard operating procedures for collecting macroinvertebrate samples and associated physical and chemical data for ambient bioassessments in California. California State Water Resources Control Board Surface Water Ambient Monitoring Program (SWAMP) Bioassessment SOP 001. http://www.swrcb.ca.gov/water_issues/programs/swamp/tools.shtml#monitoring
[138] Available at: http://www.waterboards.ca.gov/water_issues/programs/swamp/docs/reports/fieldforms_fullversion052908.pdf
[139] Fetscher et al. 2009. Standard Operating Procedures for Collecting Stream Algae Samples and Associated Physical Habitat and Chemical Data for Ambient Bioassessments in California.

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(a) An Index of Biological Integrity (IBI) for macroinvertebrates for each monitoring station where bioassessment monitoring was conducted, based on the most current calculation method;[140] and

(b) An IBI for algae for each monitoring station where bioassessment monitoring was conducted, when a calculation method is developed.[141]

vi. CWA section 303(d) Listed impairments and TMDL (Water Quality Based Plans), including total suspended solids and suspended sediment concentration[142] monitoring;

vii. sediment and water column toxicity (e.g., aquatic toxicity) in receiving waters during wet weather, including:

(1) Toxicity Testing Protocols

(a) The Permittee must perform sampling, sampling preservation, and analysis with all three (3) test species in Table 1 (**Attachment E**, *Monitoring Tables for Attachment K*) and the following end points, consistent with 40 CFR 136. Toxicity testing must follow the sample integrity protocol, test acceptability criteria, and quality assurance and quality control measures set forth in USEPA's most current toxicity test procedures.

(i) For *Pimephales promelas*, a static renewal toxicity test with Larval Survival and Growth Test Method 1000.0 (40 CFR 136, Table 1A) for survival and measure growth endpoints of the test;

(ii) For *Ceriodaphnia dubia*, a static renewal toxicity test with Survival and Reproduction Test Method 1002.0 (40 CFR 136, Table 1A) for survival and reproduction endpoints of the test; and

(iii) For Psuedokirchneriella *subcapitata*, a static renewal toxicity test Growth Test Method 1003.0 (40 CFR 136, Table 1A) for growth endpoints of test.

(b) The Permittee must analyze the survival and sub-lethal endpoint data from the chronic tests using statistical analysis methods described in

[140] The most current calculation method at the time the Order was adopted is outlined in "A Quantitative Tool for Assessing the Integrity of Southern California Coastal Streams" (Ode, et al. 2005. Environmental Management. Vol. 35, No. 1, pp. 1-13). If an updated or new calculation method is developed, either both (i.e. current and updated/new) methods must be used, or historical IBIs must be recalculated with the updated or new calculation method.

[141] When a calculation method is developed, IBIs must be calculated for all available and appropriate historical data.

[142] Suspended sediment concentration (SSC) must be analyzed per American Society for Testing and Materials (ASTM) Standard Test Method D-3977-97

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EPA-821-R-02-013, or most recent edition incorporated into 40 CFR 136.

(2) Toxicity Identification Evaluation Protocols

(a) Upon detection of statistically significant chronic toxicity[143], the Permittee shall perform a TIE using the same species and most recent edition of test methods described in EPA-600-6-91-005F[144], EPA-600-R-92-080[145], and EPA-600-R-92-081[146]. A TIE is not required if the cause of toxicity is reasonably confirmed or has been previously found or can be reasonably expected to be caused by other known or unknown sources or test factors.

(b) The Permittee must complete chronic Phase I (Toxicity Characterization Procedures) TIEs for all sites demonstrating a statistically significant result to any one (1)-test organism.

(c) The Permittee must conduct a TIE on any test species demonstrating a statistically significant toxicity result at any sampling station. The Permittee may utilize TIE Prioritization Metric to rank sites for TIEs.

(3) Toxicity Reduction Evaluation Protocols

(a) The Permittee shall perform a Toxicity Reduction Evaluation (TRE) of the toxic pollutant or the class of pollutants that has been identified through the TIE process in accordance with the most recent methods provided in EPA-600-2-88-70[147] when the same pollutant or class of pollutants is identified through two (2) TIE evaluations at a monitoring location.

(b) The Permittee shall submit to the Central Valley Water Board a TRE Corrective Action Plan that shall, at a minimum, discuss the following items no later than ninety (90) days from the detection of statistically significant chronic toxicity.

(i) The potential sources of pollutant(s) causing toxicity;

[143] The Permittee must compare the toxicity of downstream receiving water sample(s) to corresponding upstream receiving water sample(s). Statistically significant chronic toxicity is defined as toxicity of downstream receiving water sample(s) relative to the upstream receiving water sample(s) and relative to the laboratory control. If an upstream location is not available, statistically significant chronic toxicity is defined as toxicity of downstream receiving water sample(s) relative to the laboratory control.

[144] *Toxicity Identification Evaluation: Characterization of Chronically Toxic Effluents, Phase I* EPA/600/6-91/005F, USEPA, 1992.

[145] *Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity* EPA/600/R-92.080, USEPA, 1993.

[146] *Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity,* EPA/600/R-92/081, USEPA, 1993.

[147] *Generalized Methodology for Conducting Industrial Toxicity Reduction Evaluations* EPA/600/2-88/070, USEPA, 1989.

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(ii) A list of municipalities or other entities that may have jurisdiction over sources of pollutant(s) causing toxicity;

(iii) Recommended best management practices (BMPs) to reduce the pollutant(s) causing toxicity;

(iv) Proposed control measures to reduce the pollutant(s) causing toxicity for new development and redevelopment projects; and

(v) Proposed follow-up monitoring to demonstrate that toxicity has been removed.

(vi) The Permittee shall implement the TRE Corrective Action Plan and take all reasonable steps to eliminate toxicity.

(c) If a TRE Correction Action Plan is prepared for a pollutant covered under an applicable TMDL listed in **Attachment G**, or incorporated in this Order during the permit term, the TRE Correction Action Plan must be consistent, coordinated and integrated with any ongoing TMDL implementation actions.

(4) Toxicity Testing Notification and Reporting Requirements

(a) The Permittee must submit the following information when notifying and reporting toxicity test results to the Central Valley Water Board:

(i) Summary of toxicity results;

(ii) A finding for each sample of whether statistically significant chronic toxicity was observed;

(iii) Within forty-five (45) days of completion of toxicity tests, the Permittee shall provide a copy of all sample documents, including chain of custody forms, the toxicity test results and all associated laboratory documents;

(iv) Within thirty (30) days of completion of the TIE, the Permittee shall provide a copy of the TIE results and all associated laboratory documents; and

(v) Within thirty (30) days of completion of TRE, the Permittee shall provide a copy of the TRE results and all associated laboratory documents.

(b) The Permittee shall submit the following information in their Annual Reports:

(i) The dates of sample collection and initiation of each toxicity test;

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(ii) A summary of the reported toxicity test results according to the test methods manual chapter on report preparation and test review;

(iii) All results for urban runoff parameters monitored concurrently with the toxicity test(s);

(iv) TIE Phase testing (i.e., Phase I, II, and/or III) conducted for each monitoring station; and

(v) The development, implementation, and results for each TRE Corrective Action Plan.

(c) The Permittees shall submit any collected monitoring data during the previous reporting year (July 1 through June 30) with each Annual Report. Collected monitoring data shall be uploaded to the California Environmental Data Exchange Network (CEDEN)[148], or the Storm Water Multi-Application Reporting and Tracking System (commonly known as SMARTS) database when available.

C. Regional Monitoring Program

If directed by the Executive Officer (see **Part D**, below) or requested by the Permittee (and approved by the Executive Officer), the Permittee shall participate in a regional monitoring program (RMP) to address all or part of the local water quality monitoring requirements of this Order.

1. Permittees that participate in a RMP may request a reduction in some of the local water quality monitoring specified in the monitoring requirements of this Order. Participation in a RMP by a Permittee shall consist of providing funds and/or in-kind services to the RMP at least equivalent to discontinued individual monitoring and study efforts.

2. If the Permittee proposes to reduce the local water quality monitoring ~~and instead~~in exchange for participat~~e~~ion in a RMP, the Permittee shall submit a letter signed by an authorized representative to the Central Valley Water Board requesting to participate in a RMP, the date on which local water quality monitoring required under the monitoring requirements for this Order, would cease, or be modified, and specific monitoring locations and constituent combinations that would no longer be conducted individually. To ensure consistency with this Order, reductions in local water quality monitoring require the Executive Officer's prior written approval of the Permittee's request, including related SWMP modifications. Approval by the Executive Officer is not required prior to participating in the RMP if the Permittee is not requesting reductions in local water quality monitoring.

3. If the Permittee is approved to participate in a RMP and reduce some local water quality monitoring, the Permittee shall continue to participate in a RMP until such time as the Permittee informs the Central Valley Water Board that participation in a

[148] Data must be uploaded to CEDEN using the templates provided on the CEDEN website.

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RMP will cease and all local water quality monitoring will be reinstituted. To the extent approved by the Executive Officer, some local water quality monitoring and related monitoring identified in the SWMP, required under this Order may be discontinued so long as the Permittee adequately supports a RMP. If the Permittee fails to maintain adequate participation in a RMP by not providing funds and/or in-kind services, the Permittee shall reinstitute all previously required individual local water quality monitoring. During participation in the RMP, the Permittee shall conduct and submit any or part of the monitoring included in these monitoring requirements described in this Order that is deemed appropriate by the Permittee, provided the modified monitoring program approved by the Executive Officer is conducted at a minimum.

4. RMP data is not intended to be used directly to represent receiving water quality for purposes of determining if a discharge is causing or contributing to an exceedance of any applicable water quality standards. RMP monitoring stations are established generally as "integrator sites" to evaluate the combined impacts on water quality of multiple sources; RMP monitoring stations would not normally be able to identify the source of any specific constituent, but would be used to identify water quality issues needing further evaluation. Thus, data from the RMP may be utilized as a preliminary step toward characterizing the receiving water. Alternatively, the Permittee may conduct any site-specific receiving water monitoring deemed appropriate by the Permittee and submit that monitoring data with this characterization monitoring. RMP monitoring data, along with local Permittee data, may be used to help establish ambient receiving water quality. RMP data, as with all environmental monitoring data, can provide an assessment of water quality at a specific location and time that can be used in conjunction with other information (i.e. other receiving water monitoring data, spatial and temporal distribution and trends of receiving water data, point and non-point source discharges, receiving water flowrate and velocity) to determine a potential source or sources of a constituent that contributed to an exceedance of any applicable water quality standards.

5. During the period of participation in the RMP, the Permittee shall continue to report any individually conducted local water quality monitoring data in the Annual Report consistent with the monitoring requirements of this Order. In addition, with each submitted Annual Report, the Permittee shall include 1) a statement that the Permittee is participating in the RMP have reduced some of the local water quality monitoring program required by the permit, and 2) the Permittee shall continue to attach a copy of the letter originally submitted to the Central Valley Water Board describing the monitoring location(s) and constituents that will no longer be ~~conducted~~ sampled individually.

D. Delta Regional Monitoring Program

1. Permittees Within the Legal Delta Boundary
   Permittees within the legal Delta boundary are required to maintain adequate participation in the Delta Regional Monitoring Program to address all or part of the local water quality monitoring requirements of this Order. Adequate participation in the Delta Regional Monitoring Program is determined by the program's steering committee. The Permittees shall maintain adequate participation in the Delta Regional Monitoring Program for the entire term of this Order. Permittees that maintain such adequate participation shall be deemed in compliance with the local water quality monitoring to the

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extent the Executive Officer has authorized Delta RMP participation to replace such monitoring.

2. Permittees Outside the Legal Delta Boundary

Permittees outside of the legal Delta boundary may be required to participate in the Delta Regional Monitoring Program or other regional monitoring program, as applicable, if directed and approved by the Executive Officer to address all or part of the local water quality monitoring requirements of this Order. Adequate participation in the Delta Regional Monitoring Program is determined by the program's steering committee. Permittees that maintain such adequate participation shall be deemed in compliance with the local water quality monitoring to the extent the Executive Officer has authorized Delta RMP participation to replace such monitoring.

~~**Within Delta**~~

~~Permittees within the legal Delta boundary shall adequately participate in the Delta Regional Monitoring Program to address the local water quality monitoring requirements of this Order. Adequate participation in the Delta Regional Monitoring Program is determined by the program's steering committee. The Permittees shall maintain adequate participation in the Delta Regional Monitoring Program for the entire term of this Order. Compliance with the local water quality monitoring and reporting requirements of this Order, through participation in the RMP, is considered to be adequate compliance.~~

~~**Outside Delta**~~

~~Permittees outside of the legal Delta boundary may be required to participate in the Delta Regional Monitoring Program or other regional monitoring program, as applicable, if directed and approved by the Executive Officer to address all or part of the local water quality monitoring requirements of this Order.~~

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Attachment L – Notice of Intent

L

ORDER R5-2016-XXXX
NPDES No. CAXXXXXXXX

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND WASTE DISCHARGE REQUIREMENTS GENERAL PERMIT
FOR
DISCHARGES FROM MUNICIPAL SEPARATE STORM SEWER SYSTEMS

I. NOTICE OF INTENT STATUS (see Instructions)

Mark one item:

☐ A. New Permittee:_____

☐ B. Change of Information: WDID#_____

☐ C. Change of ownership or responsibility:_____

II. PERMITTEE CONTACT INFORMATION

A. Duly Authorized Representative (First and Last Name)			
B. Title of Duly Authorized Representative			
C. Mailing Address			
D. City	E. County	F. State	G. Zip
H. E-mail address		I. Phone (XXX-XXX-XXXX)	
J. Secondary Contact Person (First and Last Name)			
H. E-mail address		I. Phone (XXX-XXX-XXXX)	

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III. BILLING CONTACT INFORMATION (Complete this Information *only* if different from Section II.)

A. Name (First and Last Name)			
B. Billing Address			
C. City	D. County	E. State	F. Zip
G. E-mail address		H. Phone (XXX-XXX-XXXX)	

IV. RECEIVING WATER INFORMATION

A. Name of Receiving water body(ies):_____

_____

_____

B. Name of major downstream water body(ies):_____

_____

_____

V. STORM WATER MANAGEMENT PLAN STATUS

Has a Storm Water Management Plan been prepared and is the MS4 operator and/or owner familiar with its contents?

Yes ☐ No ☐

If yes, date the Central Valley Water Board last approved the Storm Water Management Plan:

Date:_____

If not, when will it be prepared (date)?_____

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VI. FEES

For new Permittees, has a payment of the filing fee been included with this submittal?

Yes ☐ No ☐ N/A ☐

Information concerning the applicable fees can be found at http://www.waterboards.ca.gov/resources/fees/water_quality/. Checks must be made payable to the State Water Resources Control Board (see **Part V.B.2**).

VII. CERTIFICATION

This Certification must be signed by a duly authorized representative consistent with the requirements contained in 40 CFR 122.22(a)(3).

"I certify under penalty of law that this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment for knowing violations. Additionally, I certify that the provisions of the General Permit, including developing and implementing a monitoring program, will be complied with."

A. Printed Name:_____

B. Signature:_____

C. Title:_____

Date:_____

VIII. FOR CENTRAL VALLEY WATER BOARD STAFF USE ONLY

WDID#	**Date NOI Received**	**Date NOI Processed**
Staff Initials	**Fee Amount Received** **$**	**Check #**

TENTATIVE

INSTRUCTIONS FOR COMPLETING NOTICE OF INTENT

These instructions are intended to help you, the Permittee, to complete the Notice of Intent (NOI) form for the Region-wide MS4 Permit (General Permit). **Please type or print clearly when completing the NOI form**. For any field, if more space is needed, submit a supplemental letter with the NOI.

Send the completed and signed form along with the filing fee, if applicable, and supporting documentation to:

MS4 Program
Central Valley Regional Water Quality Control Board
11020 Sun Center, Suite 200
Rancho Cordova, 95670

Section I – Notice of Intent Status

Indicate whether this request is for the first time coverage under this General Permit or a change of information for the discharge already covered under this General Permit. Permittees that are covered under previous MS4 permits issued by the Central Valley Water Board or State Water Board before effective date of this General Permit should check the box for change of information. For a change of information or ownership and/or owner, please supply the eleven-digit Waste Discharge Identification (WDID) number for the discharge.

Section II – Permittee Contact Information

Complete this section with the following Permittee information:

a. Enter the First and Last Name of the Duly Authorized Representative.
b. Enter the title of the Duly Authorized Representative.
c. Enter the street number and street name where general correspondence should be mailed to. A post office box is acceptable.
d. Enter the city that applies to the mailing address given.
e. Enter the county that applies to the mailing address given.
f. Enter the state that applies to the mailing address given.
g. Enter the zip code that applies to the mailing address given.
h. Enter the email address of the Duly Authorized Representative.
i. Enter the daytime telephone number of the Duly Authorized Representative.
j. Enter the First and Last Name of a secondary contact person.
k. Enter the email address of the secondary contact person.
l. Enter the daytime telephone number (XXX-XXX-XXXX) of the secondary contact person.

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Section III – Billing Contact Information

Complete this section ***only*** if different from Section II.

a. Enter the First and Last Name of the person responsible for billing.
b. Enter the street number and street name where billing correspondence should be mailed to. A post office box is acceptable.
c. Enter the city that applies to the billing address.
d. Enter the county that applies to the billing address.
e. Enter the state that applies to the billing address.
f. Enter the zip code that applies to the billing address.
g. Enter the e-mail address of the person responsible for billing.
h. Enter the daytime telephone number (XXX-XXX-XXXX) of the person responsible for billing.

Section IV – Receiving Water Information

List each receiving water body the MS4 discharges into, and all downstream water bodies for each receiving water.

Section V – Storm Water Management Plan Status

In this section, the Permittee should indicate whether or not a Storm Water Management Plan (SWMP) has been developed and that plan has been approved by the Central Valley Water Board.

Under this Order, the Permittee must prepare and submit a SWMP in accordance with the SWMP development timeframes described in **Part V.F.2**. The requirements for developing a Storm Water Management Plan are specified under **Part V.E.3.**

Section VI – Fees

The amount of Annual fee shall be based on the annual fee schedules specified in Title 23, California Code of Regulations, section 2200. Fee information can be found at http://www.waterboards.ca.gov/resources/fees/water_quality/.

New Permittees should check the YES box if an annual fee payment has been included. Permittees covered by previous individual permits issued by the Central Valley Water Board or State Water Board will continue to be billed annually.

Section VII – Certification

a. Enter the First and Last Name of the Duly Authorized Representative.
b. Enter the signature for the Duly Authorized Representative.
c. Enter the title of the Duly Authorized Representative.

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d. Enter the date the NOI was signed by the Duly Authorized Representative.

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ATTACHMENT M – NOTICE OF TERMINATION
M

ORDER R5-2016-XXXX
NPDES No. CAXXXXXXXX

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND WASTE DISCHARGE REQUIREMENTS GENERAL PERMIT
FOR
DISCHARGES FROM MUNICIPAL SEPARATE STORM SEWER SYSTEMS

I. WDID

WDID#:_____

II. DISCHARGER INFORMATION

A. Name			
B. Mailing Address			
C. City	D. County	E. State	F. Zip
G. Contact Person	H. E-mail address	I. Title	J. Phone

III. BASIS FOR TERMINATION

IV. CERTIFICATION

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"I certify under penalty of law that 1) I am not required to be permitted under this General Permit No.CAXXXXXXX, and 2) this document and all attachments were prepared under my direction and supervision in accordance with a system designed to ensure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment. Additionally, I understand that the submittal of this Notice of Termination does not release an operator and/or owner of a Municipal Separate Storm Sewer System (MS4) from liability for any violations of the Clean Water Act."

A. Printed Name:_____

B. Signature:_____

C. Title:_____

Date:_____

V. FOR CENTRAL VALLEY WATER BOARD USE ONLY

☐ **Approved for Termination**

☐ **Denied and Returned to the Discharger**

A. Printed Name:_____

B. Signature:_____

C. Date:_____

NOT Effective Date:_____

TENTATIVE

TENTATIVE