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CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD CENTRAL VALLEY REGION

ORDER NO. R5-2007-_____

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(2)(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

(b)(4). As such, the City must obtain an NPDES municipal storm water permit for the area under its' jurisdiction.

4. The County of San Joaquin (hereafter County) contains urbanized areas and areas of potential growth, which are enclosed within the limits of the City or surround the City. The urbanized areas of the County that are enclosed within the City, the urbanized areas which surround the City, and the City of Stockton are hereafter referred to as the **Stockton Urbanized Area** and subject to the permit requirements. Due to the proximity of the County's urbanized areas to the City, their physical interconnections to the City's storm sewer system, and the locations of their discharges relative to the City's system, the County is designated as part of the large MS4 in accordance with 40 CFR 122.26(b)(4)(iii). Attachment A shows the Stockton Urbanized Area.
5. The Permittees have jurisdiction over and/or maintenance responsibilities for storm drains in the Stockton Urbanized Area. The discharge consists of surface runoff generated from various land uses that discharge into storm drains, which in turn discharge to natural drainage watersheds. The major natural drainage watersheds in the Stockton Urbanized Area are:
 - Bear Creek
 - Calaveras River
 - Stockton Deep Water Ship Channel
 - Duck Creek
 - Five Mile Slough
 - Fourteen Mile Slough
 - Little Johns Creek
 - Mormon Slough
 - Mosher Slough
 - Smith Canal
 - Walker Slough

Smith Canal and Five Mile Slough receive storm water runoff from the Stockton Urbanized Area. However, Calaveras River, Mosher Slough, and Walker Slough receive inputs, at times, from a number of runoff sources including urban runoff from the Stockton Urbanized area, runoff from agricultural areas and agricultural return (tail water) upstream of the Stockton Urbanized Area.

All of these water bodies discharge to the Sacramento-San Joaquin River Delta and are tidal freshwater within the Stockton Urbanized Area with a one- to three-foot tide range. In most areas of the Stockton Urbanized Area, dry weather flow and storm water runoff are pumped to sloughs/rivers. These drain westerly into the San Joaquin River, which runs from south to north along the western side of the Stockton Urbanized Area. The quality and quantity of these discharges vary considerably and are affected by hydrology, geology, land use, season, and sequence and duration of hydrologic events.

6. The Permittees' land use authority allows urban developments that may generate pollutants and runoff that could impair receiving water quality and beneficial uses. The Permittees are therefore responsible for considering potential storm water

impacts when making planning decisions in order to fulfill the Clean Water Act (CWA) requirement to reduce the discharge of pollutants in municipal storm water to the maximum extent practicable (MEP) from new development and redevelopment activities. In addition, the Permittees must exercise their legal authority to ensure that the increased pollutant loads and flows do not degrade the beneficial uses of the receiving water.

7. This Order is not intended to prohibit the inspection for or abatement of vectors by the State Department of Health Services or local vector agencies in accordance with California Health and Safety Code § 2270 *et seq.* and §116110 *et seq.* Certain Treatment Control Best Management Practices (BMPs) if not properly designed, operated or maintained may create habitats for vectors (e.g. mosquito and rodents). This Order expects that the Permittees will closely cooperate and collaborate with local vector control agencies and the State Department of Health Services for the implementation, operation, and maintenance of Treatment Control BMPs in order to minimize the risk to public health from vector borne diseases.
8. There are portions of the City and County that are mainly agricultural, rural, and open space lands. It is not the intent of the federal storm water regulations to regulate storm water discharges from land uses of these types. Therefore, these areas are exempt from the requirements of this Order unless they [are a point source](#) discharge ~~directly~~ to the Permittees' conveyance system. Discharges from these sources may be subject to TMDL allocations and control programs.
9. When natural vegetated pervious ground cover is converted to impervious surfaces such as paved highways, streets, rooftops, and parking lots, the natural absorption and infiltration abilities of the land are lost. Therefore, runoff leaving a developed urban area is significantly greater in runoff volume, velocity, and peak flow rate than pre-development runoff from the same area. Runoff durations can also increase as a result of flood control and other efforts to control peak flow rates. Increased volume, velocity, rate, and duration of runoff greatly accelerate the erosion of downstream natural channels. Significant declines in the biological integrity and physical habitat of streams and other receiving waters have been found to occur with as little as a 10% conversion from natural to impervious surfaces. The increased runoff characteristics from new development must be controlled to protect against increased erosion of channel beds and banks, sediment pollutant generation, or other impacts to beneficial uses and stream habitat due to increased erosive force.

10. Urban development creates new pollution sources as human population density increases and brings with it proportionately higher levels of car emissions, car maintenance wastes, municipal sewage, pesticides, household hazardous wastes, pet wastes, trash, etc. which can either be washed or directly dumped into the MS4. As a result, the runoff leaving the developed urban area may be significantly greater in pollutant load than the pre-development runoff from the same area. These increased pollutant loads must be controlled to protect downstream receiving water quality.
11. Development and urbanization especially threaten environmentally sensitive ~~areas (ESAs), such as~~ water bodies such as those supporting rare, threatened or endangered species and CWA 303(d) impaired water bodies. Such ~~areas-water~~ bodies may have a lower capacity to withstand pollutant shocks than might be acceptable in the general circumstance. In essence, development that is ordinarily insignificant in its impact on the environment may become significant in a particular sensitive environment. Therefore, additional control to reduce pollutants from new and existing development may be necessary for areas adjacent to or discharging directly to an ESAenvironmentally sensitive water body.
12. Although dependent on several factors, the risks typically associated with properly managed infiltration of runoff (especially from residential land use areas) are not significant. The risks associated with infiltration can be managed by many techniques, including (1) designing landscape drainage features that promote infiltration of runoff, but do not “inject” runoff (injection bypasses the natural processes of filtering and transformation that occur in the soil); (2) taking reasonable steps to prevent the illegal disposal of wastes; (3) protecting footings and foundations; and (4) ensuring that each drainage feature is adequately maintained in perpetuity.

DISCHARGE CHARACTERISTICS

13. The quality and quantity of MS4 discharges vary considerably because of the effects of hydrology, geology, land use, season, and sequence and duration of precipitation events. Urban storm water runoff may contain pollutants that may lower the quality of receiving waters and adversely impact beneficial uses of the San Joaquin River and Delta. Studies indicate there may be increases in pollutant levels and aquatic toxicity in receiving waters as a result of urban storm water discharges.
14. Pollutants that may be contained in storm water include, but are not limited to, certain heavy metals; sediments; petroleum hydrocarbons from sources such as used motor oil; microbial pathogens; pesticides; sources of acute and chronic aquatic toxicity; and nutrients that cause or contribute to the depletion of dissolved oxygen and/or toxic conditions in the receiving water. Excessive flow rates of storm water may cause or contribute to downstream erosion and/or excessive sediment discharge and deposition in stream channels. However, since the terrain

in the Stockton Urbanized Area is relatively flat, receiving waters tend to exhibit low water velocities even during storm events, and storm water is pumped from the lower developed areas into the local waterways. As a result it is unclear whether urban runoff from Stockton leads to downstream erosion and/or excessive sediment discharge and deposition in the stream channels.

15. The discharge of wash waters and polluted storm water from industries and businesses is an environmental threat, and can also adversely impact public health and safety. The pollutants of concern in such wash waters include food waste, oil and grease, and toxic chemicals. Other storm water/industrial waste programs in California have reported similar observations and have identified illicit discharges from automotive and food service facilities as a major cause of contamination and water quality problems.
16. Certain pollutants present in storm water and/or urban runoff may be derived from extraneous sources that Permittees have no or limited jurisdiction over. Examples of such pollutants and their respective sources are: polynuclear aromatic hydrocarbons which are products of internal combustion engine operation, nitrates, bis (2-ethylhexyl) phthalate, pesticides, metals, and mercury from wet and dry atmospheric deposition; lead from fuels, copper from brake pad wear; zinc from tire wear; bacteria from natural sources including wildlife; dioxins as products of combustion, and natural-occurring minerals from local geology. However, the implementation of the measures set forth in this Order is intended to reduce the entry of these pollutants into storm water and their discharge to receiving waters to the MEP.
17. The City and County have identified 158 and 47 outfalls, respectively, within their jurisdictions. The City of Stockton began monitoring of its storm water discharges as part of its original Part 1 and Part 2 permit application in 1992/93. Since receiving the second term permit in October 2002, the Permittees have conducted an Urban Discharge and Receiving Water Monitoring Plan, which include urban discharge and receiving water monitoring for two wet weather and two dry weather events per year at four sites. In addition, water column toxicity testing, bioassessment monitoring, dry weather field screening, and detention basin monitoring has been conducted as part of the baseline monitoring. These data have been reported in the Permittees' annual reports.
18. In addition to the baseline monitoring, the Permittees have developed and implemented a Water Quality Based Program to target specific waterbodies and evaluate the spatial and temporal trends of identified pollutants of concern (POC), as well as appropriate POC control measures. During 2002-2007 these special studies included:
 - Pathogen Plan (indicator bacteria);
 - Pesticide Plan (organophosphate pesticides);
 - Dissolved Oxygen Plan (oxygen-demanding compounds);

- Smith Canal Work Plan (oxygen-demanding compounds); and
- BMP Effectiveness Study (variety of POCs).

These data have been reported in the Permittees' annual reports.

STATUTORY AND REGULATORY CONSIDERATIONS

19. The CWA authorizes the U.S. Environmental Protection Agency (U.S. EPA) to permit a state to serve as the NPDES permitting authority in lieu of the U.S. EPA. The State of California has in-lieu authority for the NPDES program. The Porter-Cologne Water Quality Control Act or California Water Code (CWC) authorizes the State Water Resources Control Board (State Water Board), through the Regional Water Boards, to regulate and control the discharge of pollutants into waters of the State. On 22 September 1989, the State Water Board entered into a memorandum of agreement with the U.S. EPA to administer the NPDES Program governing discharges to waters of the United States.
20. This Order does not constitute an unfunded local government mandate subject to subvention under Article XIII B, Section (6) of the California Constitution for several reasons, including, but not limited to, the following. First, this Order implements federally mandated requirements under federal Clean Water Act section 402, subdivision (p)(3)(B). (33 U.S.C. § 1342(p)(3)(B).) This includes federal requirements to effectively prohibit non-storm water discharges, to reduce the discharge of pollutants to the maximum extent practicable, and to include such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. Federal cases have held 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. U.S. E.P.A.* (9th Cir. 1992) 966 F.2d 1292, 1308, fn. 17.) The authority exercised under this Order is not reserved state authority under the Clean Water Act's savings clause (*cf. Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, 627-628 [relying on 33 U.S.C. § 1370, which allows a state to develop requirements which are not "less stringent" than federal requirements]), but instead, is part of a federal mandate to develop pollutant reduction requirements for municipal separate storm sewer systems. 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.)

Likewise, the provisions of this Order to implement total maximum daily loads (TMDLs) are federal mandates. The federal Clean Water Act requires TMDLs to be developed for water bodies that do not meet federal water quality standards. (33 U.S.C. § 1313(d).) Once the U.S. Environmental Protection Agency or a state develops a TMDL, federal law requires that permits must contain effluent

limitations consistent with the assumptions of any applicable waste load allocation. (40 C.F.R. § 122.44(d)(1)(vii)(B).)]

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

The Clean Water Act and the Porter-Cologne Water Quality Control Act largely regulate storm water with an even hand, but to the extent there is any relaxation of this even-handed regulation, it is in favor of the local agencies. Except for municipal separate storm sewer systems, the Clean Water Act requires point source dischargers, including discharges of storm water associated with industrial or construction activity, to comply strictly with water quality standards. (33 U.S.C. § 1311(b)(1)(C), *Defenders of Wildlife v. Browner* (1999) 191 F.3d 1159, 1164-1165 [noting that industrial storm water discharges must strictly comply with water quality standards].) As discussed in prior State Water Resources Control Board decisions, this Order does not require strict compliance with water quality standards. (SWRCB Order No. WQ 2001-15, p. 7.) The Order, therefore, regulates the discharge of waste in municipal storm water more leniently than the discharge of waste from non-governmental sources.

Third, the local agency permittees have the authority to levy service charges, fees, or assessments sufficient to pay for compliance with this Order. The fact sheet demonstrates that numerous activities contribute to the pollutant loading in the municipal separate storm sewer system. 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 ability of a local agency to defray the cost of a program without raising taxes indicates that a program does not entail a cost subject to subvention. (*County of Fresno v. State of California* (1991) 53 Cal.3d 482, 487-488.)

Fourth, the permittees have requested permit coverage in lieu of compliance with the complete prohibition against the discharge of pollutants contained in federal Clean Water Act section 301, subdivision (a) (33 U.S.C. § 1311(a)) and in lieu of numeric restrictions on their discharges. To the extent, the local agencies have voluntarily availed themselves of the permit, the program is not a state mandate.

(*Accord County of San Diego v. State of California* (1997) 15 Cal.4th 68, 107-108.) Likewise, the permittees have voluntarily sought a program-based municipal storm water permit in lieu of a numeric limits approach. (See *City of Abilene v. U.S. E.P.A.* (5th Cir. 2003) 325 F.3d 657, 662-663 [noting that municipalities can choose between a management permit or a permit with numeric limits].) The local agencies' voluntary decision to file a report of waste discharge proposing a program-based permit is a voluntary decision not subject to subvention. (See *Environmental Defense Center v. USEPA* (9th Cir. 2003) 344 F.3d 832, 845-848.)

Fifth, 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 XIII B, Section (6) of the California Constitution.

21. The Water Quality Act of 1987 added Section 402(p) to the Clean Water Act (CWA 33 U.S.C. § 1251-1387). This section requires the U.S. EPA to establish regulations setting forth NPDES requirements for storm water discharges in two phases.
 - The U.S. EPA Phase I storm water regulations were directed at MS4s serving a population of 100,000 or more, including interconnected systems and storm water discharges associated with industrial activities, including construction activities. The Phase I Final Rule was published on November 16, 1990 (55 *Fed. Reg.* 47990).
 - The U.S. EPA Phase II storm water regulations are directed at storm water discharges not covered in Phase I, including small MS4s (serving a population of less than 100,000), small construction projects (one to five acres), municipal facilities with delayed coverage under the Intermodal Surface Transportation Efficiency Act of 1991, and other discharges for which the U.S. EPA Administrator or the State determines that the storm water discharge contributes to a violation of a water quality standard, or is a significant contributor of pollutants to waters of the United States. The Phase II Final Rule was published on December 8, 1999 (64 *Fed. Reg.* 68722).
22. This Order specifies requirements necessary for the Permittees to reduce the discharge of pollutants in urban runoff to the maximum extent practicable (MEP).¹ The State Board's Office of Chief Counsel (OCC) has issued a memorandum interpreting the meaning of MEP to include [effectiveness, regulatory compliance, public acceptance](#), technical feasibility, ~~and cost, and benefit derived with the~~ [burden being is](#) on the municipality to demonstrate compliance with MEP by showing that a BMP is not technically feasible in the locality or that BMPs costs would exceed any benefit to be derived (dated February 11, 1993). However, since MEP is a dynamic performance standard which evolves over time as urban

¹ A definition of MEP may be found in [Appendix B Attachment C](#).

- runoff management knowledge increases, the Permittees' storm water programs must continually be assessed and modified to incorporate improved programs, control measures, best management practices (BMPs), etc. in order to achieve the evolving MEP standard. MEP is a technology-based standard established by Congress in CWA section 402(p)(3)(B)(iii) that operators of MS4s must meet. Technology-based standards establish the level of pollutant reductions that dischargers must achieve. Factors that must be considered when defining MEP include, but is not limited to; effectiveness, regulatory compliance, public acceptance, cost and technical feasibility. This continual assessment, revision, and improvement of storm water management program implementation is expected to ultimately achieve compliance with water quality standards.
23. This permit is intended to develop, achieve, and implement a timely, comprehensive, cost-effective storm water pollution control program to reduce the discharge of pollutants in storm water to the MEP from the permitted areas in the Stockton Urbanized Area subject to the Permittees' jurisdiction.
24. Section 402(p)(3)(B)(ii) of the CWA requires that NPDES permits effectively prohibit non-storm water discharges into MS4s. Federal regulation 40 CFR 122.26(d)(2)(iv)(B)(1) requires control programs to prevent illicit discharges to MS4s and allows certain categories of non-storm water discharges to MS4s provided that the Permittees eliminate such discharges once they are identified as sources of pollutants to waters of the United States.
25. The Permittees have adopted their own respective storm water ordinances. These ordinances provide the Permittees the authority to protect and enhance the water quality of watercourses, water bodies, and wetlands in the Stockton Urbanized area in a manner pursuant to and consistent with the CWA and the Porter-Cologne Water Quality Control Act. The City and County have adopted Ordinance Nos. 013-95 and 005-97, respectively. These ordinances provide the Permittees the authority to protect and enhance the water quality of watercourses, water bodies, and wetlands in the Stockton Urbanized Area in a manner pursuant to and consistent with the CWA and the Porter-Cologne Water Quality Control Act. Furthermore, the City adopted a Grading and Erosion Control Ordinance (Municipal Code Section 13.507-B) effective 1 July 1997. During the 2002-2007 permit term, the City incorporated storm water quality protection principles into the construction program by reviewing and modifying the Grading and Erosion Control Ordinance and the Standard Specifications and ensuring that the Municipal Utility District (MUD) — Engineering has permit sign-off privileges. In March 1998, the County enacted a Storm Water Management and Discharge Control Ordinance No. 3966 (codified in Title 5, Division 10). Construction Standards for County projects were adopted on 30 August 2004.
26. Federal regulations 40 CFR 122.26(d)(2)(iv)(A) and 40 CFR 122.26(d)(2)(iv)(C) require that MS4 permittees implement a program to monitor and control pollutants in discharges to the municipal system from industrial and commercial facilities that

contribute a substantial pollutant load to the MS4. Federal regulations require that permittees establish priorities and procedures for inspection of industrial facilities and priority commercial establishments. This permit, consistent with the U.S. EPA policy, incorporates a cooperative partnership, including the specifications of minimum expectations, between the Regional Water Board and the Permittees for the inspection of industrial facilities and priority commercial establishments to control pollutants in storm water discharges (58 Fed. Reg. 61157).

27. The State Water Board has issued two statewide general NPDES permits for storm water discharges: one for storm water from industrial sites [NPDES No. CAS000001, General Industrial Activity Storm Water Permit (General Industrial Permit)] and the other for storm water from construction sites [NPDES No. CAS000002, General Construction Activity Storm Water Permit (General Construction Permit)]. The current General Industrial Permit was reissued on 17 April 1997. The current General Construction Permit was reissued on 19 August 1999. In addition, the Regional Water Board has issued General Permit Order No. 5-00-175 for dewatering and other low threat discharges, which authorizes such discharges to the MS4s owned and operated by Permittees. This Order requires the Permittees to conduct compliance inspections at industries and construction sites that discharge to their MS4s. Many of these sites are currently covered under State NPDES General Permits.
28. When industrial or construction site discharges occur in violation of local permits and ordinances, the Regional Water Board in most cases refers first to the municipality where the discharge occurs for appropriate actions. If the municipality has demonstrated a good faith effort to educate and enforce but remains unsuccessful, the Regional Water Board may assist the municipality and conduct a cooperative investigation and/or enforcement effort including enforcement of the applicable statewide General Permit. If the municipality has not demonstrated a good faith enforcement effort, the Regional Water Board may initiate enforcement action against both the industrial or construction discharger under the statewide General Permits, as well as against the authorizing municipal Permittee for violations of this Order. Each Permittee must also provide the first level of enforcement against illegal discharges from other land uses it has authorized, such as commercial and residential developments.
29. This Order shall assure compliance with water quality standards. This Order therefore includes requirements to the effect that discharges shall not cause or contribute to exceedances of water quality standards that would cause or create a condition of nuisance, pollution, or water quality impairment in receiving waters. The Regional Water Board is requiring that these requirements be addressed through the effective implementation of Best Management Practices (BMPs) to reduce pollutants in storm water.
30. Regulations in 40 CFR 122.26(d)(2)(iv) require that the Storm Water Management Plan (SWMP) be implemented during the entire duration of the permit, which is

five years. The Permittees shall demonstrate substantial compliance with the SWMP and this Order through the information and data supplied in the Annual Report. The SWMP shall remain in effect as an integral and enforceable part of this Order until revised and approved by the Regional Water Board. If there are conflicts between the SWMP and this Order, then the Order supercedes the SWMP.

31. 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. The Port of Stockton and Caltrans are currently designated as such entities. On 28 February 1997, the Regional Water Board issued Order No. 97-042 (NPDES No. CA0084077), a separate NPDES municipal storm water permit for the Port of Stockton. On 15 July 2000, the State Water Board issued a separate statewide NPDES storm water permit to Caltrans (NPDES No. CAS000003, Order No. 99-06-DWQ). The Permittees will work cooperatively with the Port of Stockton and Caltrans for the purpose of maintaining mutually beneficial storm water management program coordination, cooperation and communication.
32. 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.
33. The Regional Water Board adopted the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve water quality objectives for all waters of the Basin. This Order implements the Basin Plan.
34. The beneficial uses of the San Joaquin River and Delta downstream of the discharge as identified in Table II-1 of the Basin Plan are municipal and domestic supply; industrial; and agricultural supply; contact and other non-contact recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources.
35. The beneficial uses of the underlying ground water beneath the Stockton Urbanized Area as identified in the Basin Plan, are municipal and domestic water supply, industrial service, industrial process, and agricultural supply.
36. Congress has determined that it is not feasible at this time to establish numeric effluent limits for pollutants in storm water discharges from MS4s [Clean Water Act

(CWA)² Section 402(p)(3)(B)(iii)³. In addition, the California Superior Court ruled; *“Water quality-based effluent limitations are not required for municipal Stormwater discharges [33 USC §1342(p)(3)(B)] and [40 CFR §122.44(k)(3)]. For municipal stormwater discharges, the Permits must contain best management practices (BMPs), which reduce pollutants to the maximum extent practicable [33 USC §1342(p)(3)(B)]. These Permits do contain these through the Stormwater Management Plan which is incorporated into the Permits by reference.”* (*San Francisco Baykeeper vs. Regional Water Quality Control Board, San Francisco Bay Region, Case No. 500527, 14 November 2003*). Therefore, 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, compliance with long-term performance standards in accordance with the Permittees’ SWMP and its schedules, an established maintenance program with enforcement procedures, constitutes compliance with the MEP standard.

37. 40 CFR 122.26(d)(2)(iv)(B)(1)]⁴ lists several non-storm water flows that are not required to be prohibited unless such discharges are specifically identified by the Phase I MS4 Permittees as sources of pollutants to waters of the United States.
38. The State Water Resources Control Board (SWRCB) convened a Storm Water Panel (Blue Ribbon Panel) of experts to address the issue of numeric effluent limits⁵. The study also concluded that it is not feasible at this time to set enforceable numeric effluent criteria for storm water and non-storm water

² The U.S. Environmental Protection Agency (EPA) published the regulation entitled “National Pollutant Discharge Elimination System - Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges” (Federal Register, Volume 64, Number 235, pages 68722-68852) on December 8, 1999 as required by Section 402(p) of the Clean Water Act (CWA).

³ CWA Section 402(p)(3)(B)(iii): “...controls to reduce 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.”

⁴40 CFR 122.26(d)(2)(iv)(B)(1) A description of a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal separate storm sewer system; this program description shall address all types of illicit discharges, however the following category of non-storm water discharges or flows shall be addressed where such discharges are identified by the municipality as sources of pollutants to waters of the United States: water line flushing, landscape irrigation, diverted stream flows, rising ground waters, uncontaminated ground water infiltration (as defined at 40 CFR 35.2005(20)) to separate storm sewers, uncontaminated pumped ground water, discharges from potable water sources, foundation drains, air conditioning condensation, irrigation water, springs, water from crawl space pumps, footing drains, lawn watering, individual residential car washing, flows from riparian habitats and wetlands, dechlorinated swimming pool discharges, and street wash water (program descriptions shall address discharges or flows from fire fighting only where such discharges or flows are identified as significant sources of pollutants to waters of the United States).

⁵ Recommendations of the Blue Ribbon Panel were finalized as *The Feasibility of Numeric Effluent Limits Applicable to Discharges of Storm Water Associated with Municipal, Industrial and Construction Activities*, dated 19 June 2006.

discharges from MS4s.

39. The U.S. EPA published an 'Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits' on August 26, 1996 (61 Fed. Reg. 43761). This policy discusses the appropriate kinds of water quality-based effluent limitations to be included in NPDES storm water permits to provide for the attainment of water quality standards.
40. On 12 March 2001, the U.S. Court of Appeals ruled that it is necessary to obtain an NPDES permit for application of aquatic pesticides to waterways [Headwaters, Inc. vs. Talent Irrigation District, 243 F.3d. 526 (Ninth Cir., 2001)]. The U.S. EPA issued a Final Rule on 17 October 2006, that exempts the application of a pesticide to or over, including near, waters of the United States if conducted consistent with all relevant requirements under the Federal Insecticide and Fungicide Rodenticide Act (FIFRA), from an NPDES permit under the Clean Water Act in the following two circumstances: (a) the application of pesticides directly to waters of the United States in order to control pests,⁶ and (b) The application of pesticides to control pests that are present over waters of the United States, including near such waters,⁷ that results in a portion of the pesticides being deposited to waters of the United States (40 CFR 122.3(h)).
41. On 17 June 1999, the State Water Board adopted Order No. WQ 99-05 (SBO 99-05), a precedent setting-decision, which identifies acceptable receiving water limitations language to be included in municipal storm water permits issued by the State and Regional Water Boards. The receiving water limitations included herein are consistent with the State Water Board Order, U.S. EPA policy, and the U.S. Court of Appeals decision in Defenders of Wildlife v. Browner (Ninth Cir., 1999). The State Water Board's OCC has determined that the federal court decision did not conflict with SBO 99-05 (memorandum dated October 14, 1999).
42. Federal regulation 40 CFR 122.42(c)(7) requires the Permittees to submit an annual report that identifies water quality improvements or degradation.
43. The action to adopt an NPDES permit is exempt from the provisions of Chapter 3 of the California Environmental Quality Act (Public Resources Code, Section 21100, et. seq.) in accordance with Section 13389 of the California Water Code.
44. This Order serves as an NPDES permit, pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect 50 days from the date of hearing,

⁶ Water Quality Order No. 2004-0008-DWQ, Statewide General National Pollutant Discharge Elimination System Permit for Discharges of Aquatic Pesticides to Surface Waters of the United States for Victor Control, General Permit No. CAG990004

⁷Water Quality Order No. 2004-0008-DWQ, Statewide General National Pollutant Discharge Elimination System Permit for Discharges of Aquatic Pesticides for Aquatic Weed Control in Waters of the United States, General Permit No. CAG990005

provided that U.S. EPA has no objections.

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

STORM WATER MANAGEMENT PROGRAM

46. In compliance with the second term Permit, the Permittees submitted a Report of Waste Discharge (ROWD), as well as a proposed SWMP on 1 April 2007. The ROWD evaluated the effectiveness of the Permittees' storm water programs over the second permit term, identified which BMPs should continue to be implemented, and, as part of the iterative process, determined what additional efforts may be necessary in order to improve the storm water program and reduce the discharge of pollutants to the MEP. Based on the evaluation, the ROWD and proposed SWMP propose a wide range of continuing, enhanced and new BMPs, control measures, and performance standards to be implemented during the third term Permit period (2007-2012).
47. Federal regulation 40 CFR 122.26(d)(2)(iv) requires the Permittees to submit a SWMP to reduce the discharge of pollutants in storm water to the MEP, and to effectively prohibit non-storm water discharges into municipal storm drain systems within the Permittees' jurisdictions during the five-year duration of the permit. During the third term permit period, the Permittees shall continue to demonstrate substantial compliance with their respective SWMP and this Order through the information and data supplied in the Annual Reports. The SWMP shall remain in effect, as an integral and enforceable component of this Order, until revised and approved by the Regional Water Board. If there are conflicts between the SWMP and this Order, then the Order supercedes the SWMP.
48. This Order requires evaluation of water quality impacts of storm water discharges from industrial and construction sites, existing urbanized areas, and new developments. This Order also requires implementation and evaluation of the SWMP and related programs to reduce the discharge of pollutants in storm water runoff to MEP and to improve water quality and protect beneficial uses.
49. The Permittees are required to submit a revised SWMP by **6 June 2008** (or 6 months after the adoption of the fourth term permit, whichever is later). The SWMP fulfills the Regional Water Board's permit application requirements subject to the condition that it will be improved and revised in accordance with the provisions of this Order. The SWMP describes the framework for management of storm water discharges during the term of this Order. The SWMP also describes the goals and objectives; legal authorities; source identification process; funding sources; fiscal analysis; assessment controls; BMPs evaluation and improvement process

effectiveness assessment strategy, details pertaining to water quality based programs (e.g., DO, pathogens, pesticides, and mercury/methylmercury), sediment toxicity and bioassessment; and monitoring plan of the Permittees' storm water management program. The SWMP includes program elements and control measures that each Permittee will implement to reduce the discharge of pollutants in storm water to the MEP, and to effectively prohibit non-storm water discharges into MS4s and watercourses within each Permittee's jurisdiction. The Permittee's SWMP is a site-specific modification of the existing Storm Water Management Program required under the previous MS4 permit Order No. R5-2002-0181. The various components of the SWMP, taken as a whole rather than individually, are expected to reduce pollutants in storm water and urban runoff to the MEP.

50. The overall goals of the Permittees' SWMP are to a) reduce the degradation of waters of the State and Waters of the United States (U.S.) by urban runoff and protect their beneficial uses, and b) develop and implement an effective SWMP that is well understood and broadly supported by regional stakeholders. The objectives are to:
 - a. Identify and control those pollutants in urban runoff that pose significant threats to the waters of the State and waters of the U.S. and their beneficial uses;
 - b. Comply with the federal regulations to eliminate or control, to the MEP, the discharge of pollutants from urban runoff associated with the storm drain system;
 - c. Achieve compliance with water quality standards;
 - d. Develop a cost-effective program which focuses on pollution prevention of urban storm water;
 - e. Seek cost effective alternative solutions where prevention is not a practical solution for a significant problem; and
 - f. Coordinate implementation of control measures with other agencies.

51. The SWMP outlined in the ROWD and the additional and/or revised provisions contained in this Order emphasize pollution prevention through the following program elements:
 - a. Program Management
 - Legal Authority
 - Fiscal Analysis

 - b. Program Elements
 - Construction
 - Industrial and Commercial
 - Municipal Operations
 - Illicit Discharges
 - Public Outreach

- Planning and [Land](#) Development
- c. Baseline Monitoring
- Urban Discharge Monitoring
 - Receiving Water Monitoring
 - Water Column Toxicity Monitoring
 - Dry Weather Field screening
- d. Water Quality Based Programs
- Pesticide Plan
 - Low Dissolved Oxygen Plan
 - Pathogen Plan
 - Mercury Plan
- e. Sediment Toxicity and Bioassessment
- f. Special Studies
- Detention Basin Monitoring
 - BMP Effectiveness Studies
- g. Program Effectiveness Assessment and Reporting
52. This Order includes a Monitoring Program that incorporates analytical Minimum Levels (MLs) established under the *State Water Board's Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP). The SIP's MLs represent the lowest quantifiable concentration for priority toxic pollutants that is measurable with the use of proper method-based analytical procedures and factoring out matrix interference. The SIP's MLs therefore represent the best available science for determining MLs and are appropriate for a storm water monitoring program. The use of MLs allows the detection of toxic priority pollutants at concentrations of concern using recent advances in chemical analytical methods.
53. The Permittees' proposed SWMP contains control measures that identify the specific BMPs that each Permittee will implement to reduce the discharge of pollutants from their respective MS4s to the MEP. The SWMP also includes performance standards for each Control Measure to establish the level of effort required to comply with this Order and the federal MEP standard and an implementation schedule to identify when certain activities must be completed. Each Program Element also identifies how effectiveness assessments will be utilized to ensure that the program is resulting in the desired outcomes and that the resources that are expended are providing commensurate benefit and are protective of water quality.

54. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16. Resolution 68-16 incorporates the federal antidegradation policy (40 CFR 131.12) where the federal policy applies under federal law. The proposed discharge complies with the antidegradation provisions of 40 CFR 131.12 and State Water Board Resolution 68-16. Resolution 68-16 requires in part:
- 1) High quality waters be maintained until it has been demonstrated that any change will be consistent with maximum benefit to the people of the State, will not unreasonably affect present and anticipated beneficial use of such water and will not result in water quality less than that prescribed in the policies; and
 - 2) Any activity, which produces or may produce a waste or increased volume or concentration of waste and which discharges or proposes to discharge to existing high quality waters will be required to meet waste discharge requirements which will result in the best practicable treatment or control of the discharge necessary to assure that (a) a pollution or nuisance will not occur and (b) the highest water quality consistent with maximum benefit to the people of the State will be maintained.

The City of Stockton/County of San Joaquin submitted an antidegradation analysis in August 2007. The report demonstrates that the proposed increase in discharge as a result of continued urban development will result in some minimal degradation of waters of the State and navigable waters of the United States, but in this case, such degradation is consistent with the maximum benefit to the people of the state. Limited degradation that does not cause exceedance of water quality objectives is warranted to allow for the economic benefit stemming from local growth. There is a need in Stockton to accommodate growth. The Regional Water Board does not have the jurisdiction to control growth in the City of Stockton, but is required to assure that the receiving waters are adequately protected as a result of urban discharges. The proposed Order allows the service necessary to accommodate housing and economic expansion in the area and is considered to be a benefit to the people of the State. *The Fact Sheet contains additional information regarding the antidegradation analysis and constituents of concern in the waste discharge.* The effluent concentrations for all constituents are based on water quality objectives and an increase in mass for some constituents, if any, will be insignificant. The accommodation of the development justifies lowering of receiving water quality. In this case, however, the proposed Order would authorize, very minimal, if any lowering of receiving water quality given the requirement to meet MEP by this Order.

These requirements implement best management practices, and reduce pollutants to the maximum extent practicable, and will assure that a pollution or nuisance will not occur and that the highest water quality consistent with maximum benefit to the people of the State will be maintained. Due to the high level of source and treatment control measures to prevent and reduce discharges to surface waters,

the proposed order will result in maintenance of existing in-stream uses.

DEVELOPMENT STANDARDS

55. On 5 October 2000, the State Water Board adopted Order WQ 2000-11, a precedent setting decision concerning the use of Standard Urban Storm Water Mitigation Plans (hereafter Development Standards) in municipal storm water permits for new developments and significant redevelopments. The State Water Board recognized that the decision includes significant legal or policy determinations that are likely to recur (Gov. Code §11425.60). Due to the precedent setting nature of Order WQ 2000-11, the Regional Water Board's MS4 permits must be consistent with applicable portions of the State Water Board's decision and include Development Standards.
56. Federal regulation 40 CFR 131.10(a) prohibits states from designating waste transport or waste assimilation as a use for any water of the United States. Authorizing the construction of a storm water/urban runoff treatment facility in a jurisdictional water body would be tantamount to accepting waste assimilation as an appropriate use for that water body. Furthermore, the construction and operation of a pollution control facility in a water body can impact the physical, chemical, and biological integrity as well as the beneficial uses of the water body. Therefore, storm water treatment and/or mitigation in accordance with Development Standards and any other requirements of this Order must occur prior to the discharge of storm water into a water of the United States.
57. Low Impact Development (LID) is a storm water management strategy concerned with maintaining or restoring the natural hydrologic functions of a site to achieve natural resource protection objectives and fulfill environmental regulatory requirements. LID employs a variety of natural and built features that reduce the rate of runoff, filter out its pollutants, and facilitate the infiltration of water into the ground. By reducing water pollution and increasing groundwater recharge, LID helps to improve the quality of receiving surface waters and stabilize the flow rates of nearby streams. Therefore, LID design concepts should be addressed in the revised Development Standards for new developments and significant redevelopments.
58. Hydromodification is the alteration of the natural flow of water, and often takes the form of channelizing former stream or riverbeds. When development projects that modify hydrology are carried out without protecting soil and water resources, a variety of problems can result, including: excess sediment flowing into our watersheds; downstream erosion; disruption of natural drainage; irregular stream flows; and elevated water temperatures. Therefore, hydromodification design concepts should be addressed in the revised Development Standards for new developments and significant redevelopments.

59. On 16 April 1997, the City adopted Ordinance No. 010-97 (Ordinance) as needed to implement its Storm Water Quality Control Criteria Plan (SWQCCP) (a.k.a. Development Standards) for new development and significant redevelopment. The Ordinance establishes requirements for selection of post-construction storm water quality controls (BMPs) to reduce pollutants from new development and significant redevelopment to the MEP. The Ordinance also requires adoption of Administrative Guidelines to provide procedures for the evaluation and selection of post-construction BMPs. The City should revise Ordinance No. 010-97 to ensure that it reflects the minimum standards set forth in the Storm Water Quality Control Criteria Plan.
60. Studies indicate that facilities with paved surfaces subject to frequent motor vehicle traffic (such as parking lots and fast food restaurants), or facilities that perform vehicle repair, maintenance, or fueling (automotive service facilities) are potential sources of pollutants of concern in storm water. [References: Pitt et al., Urban Storm Water Toxic Pollutants: Assessment, Sources, and Treatability, Water Environment Res., 67, 260 (1995); Results of Retail Gas Outlet and Commercial Parking Lot Storm Water Runoff Study, Western States Petroleum Association and American Petroleum Institute, (1994); Action Plan Demonstration Project, Demonstration of Gasoline Fueling Station Best Management Practices, Final Report, County of Sacramento (1993); Source Characterization, R. Pitt, In Innovative Urban Wet-Weather Flow Management Systems (2000) Technomic Press, Field, R et al. editors; Characteristics of Parking Lot Runoff Produced by Simulated Rainfall, L.L. Tiefenthaler et al. Technical Report 343, Southern California Coastal Water Research Project (2001)].
61. Retail Gasoline Outlets (RGOs) are significant sources of pollutants in urban runoff. RGOs are points of convergence for motor vehicles for automotive related services such as repair, refueling, tire inflation, and radiator fill-up and consequently produce significantly higher loadings of hydrocarbons and trace metals (including copper and zinc) than other urban areas. To meet MEP, source control, and treatment control BMPs are needed at RGOs that meet the following criteria: (a) 5,000 square feet or more, ~~or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day. These are~~ This is an appropriate thresholds since vehicular development size ~~and volume of traffic are~~ is a good indicators of potential impacts of urban runoff from RGOs on receiving waters.
62. The Los Angeles and San Diego Regional Water Quality Control Boards have jointly prepared a Technical Report on the applicability of new development BMP design criteria for RGOs, [Retail Gasoline Outlets: New Development Design Standards for Mitigation of Storm Water Impacts, (June 2001)]. RGOs in Washington, Oregon, and other parts of the United States are already subject to numerical BMP design criteria under the MS4 program.

63. In March 1997, the California Storm Water Quality Task Force (SWQTF) published Best Management Practice Guide – Retail Gasoline Outlets.
64. State Water Board Order WQ 2000-11 directed the Los Angeles Regional Water Quality Control Board to mandate that RGOs employ the BMPs listed in SWQTF's March 1997 RGO BMP publication. Due to the potential threat to storm water quality from RGOs, Development Standards for RGOs are included in this Order.
65. Each Permittee is individually responsible for adopting and enforcing local ordinances necessary to implement effective BMPs to prevent or reduce pollutants in storm water, and for providing funds for capital, operation, and maintenance expenditures necessary to implement such BMPs for the storm drain system that it owns and/or operates. Enforcement actions concerning this Order will, whenever necessary, be pursued only against the individual Permittee responsible for specific violations of this Order.
66. The County has completed the following tasks: (1) Established Conditions of Approval for New Development and Significant Redevelopment; (2) Adopted Storm Water Quality Control Criteria Plan (December 2003); (3) Established Development Review Procedures (August 2002, revised October 2003); and (4) Adopted/Updated Standard Specifications and Plans to incorporate Storm Water Quality provisions.

IMPAIRED WATER BODIES

67. Section 303(d)(1)(A) of the CWA requires that "Each state shall identify those waters within its boundaries for which the effluent limitations...are not stringent enough to implement any water quality standard (WQS) applicable to such waters." The CWA also requires states to establish a priority ranking of impaired waterbodies known as Water Quality Limited Segments and to establish Total Maximum Daily Loads (TMDLs) for such waters. This priority list of impaired waterbodies is called the Section 303(d) List. ~~The current Section 303(d) List was approved by the SWRCB on 25 October 2006. The USEPA approved up to 99% of the State's assessment determinations by letter dated 8 March 2007.~~
68. CWA Section 303(d) and 40 CFR 130.7 require states to list water quality-impaired water bodies and pollutants of concern, and develop Total Maximum Daily Loads (TMDLs). A TMDL is a quantitative assessment of the total pollutant load that can be discharged from all sources each day while still meeting water quality objectives. The Regional Water Board is currently in the process of developing TMDLs for listed water bodies within the Region. Prior to TMDL's being adopted and approved, Permittees must implement actions and/or assessments to address their contribution to the water quality impairments. Once the Regional Water Board and U.S. EPA approve TMDLs, this Order may be reopened to incorporate provisions consistent with waste load allocations established under the TMDLs.

69. The Regional Water Board considers storm water discharges from the Stockton Urbanized Area to be significant sources of pollutants. The CWA Section 303(d) Listed Waterbodies in the Stockton Urbanized Area include the following. These impairments are based on identified exceedances of water quality standards.

Waterbody	Reach	Estimated Size affected	Pollutant/Stressor(s)
Calaveras River	Lower	5.8 miles	Diazinon Organic Enrichment/Low Dissolved Oxygen (DO) Pathogens
Delta Waterways	Eastern Portion All waterways within the legal Delta boundary	2,972 acres 25 miles within the Stockton Urbanized Area (see Attachment B)	Chlorpyrifos DDT Diazinon Exotic Species Group A Pesticides Mercury Unknown Toxicity
Delta Waterways	Stockton Ship Channel	1,603 acres	Chlorpyrifos DDT Diazinon Dioxin Exotic Species Furan Compounds Group A Pesticides Organic Enrichment/Low DO Pathogens PCBs (Polychlorinated Biphenyls) Unknown toxicity
Five-Mile Slough	Alexandria Place to Fourteen Mile Slough	1.6 miles	Chlorpyrifos Diazinon Organic Enrichment/Low DO Pathogens
Mormon Slough	Commerce Street to Stockton Deep Water Channel	0.93 miles	Organic Enrichment/Low DO Pathogens
Mormon Slough	Stockton Diverting Canal to Commerce Street	5.2 miles	Pathogens
Mosher Slough	Downstream of I-5	1.3 miles	Chlorpyrifos Diazinon Organic Enrichment/Low DO Pathogens
Mosher Slough	Upstream of I-5	3.5 miles	Pathogens

Waterbody	Reach	Estimated Size affected	Pollutant/Stressor(s)
Smith Canal	---	2.4 miles	Organic Enrichment/Low DO Organophosphorous Pesticides Pathogens
Walker Slough	---	2.3 miles	Pathogens

TMDLs for these water bodies are in various stages of completion. NPDES permits must be consistent with approved TMDL waste load allocations. To implement adopted TMDLs, this Order implements control programs developed to attain waste load allocations.

70. The Regional Water Board Toxic Hot Spots Clean-up Plan (California Water Code section 13394) identified the following hot spots that are applicable to this discharge:
 - a. Mercury in the Delta;
 - b. Dissolved oxygen in the San Joaquin River in the City of Stockton; and
 - c. Diazinon and Chlorpyrifos in Mosher Slough, Five-Mile Slough, Calaveras River, and Mormon Slough.

71. The California Water Code section 13395 requires the reevaluation of waste discharge requirements for dischargers who have discharged pollutants causing all or part of the toxic hot spot. The waste discharge requirements must be revised to include requirements that “prevent the maintenance or further pollution of existing toxic hot spots.” Further “(t)he Regional Water Board may determine it is not necessary to revise a waste discharge requirement only if it finds that the toxic hot spot resulted from practices no longer being conducted by the discharger... or that the discharger’s contribution to the creation or maintenance of the toxic hot spot is not significant.” Requirements to prevent the creation of new or maintenance of existing toxic hot spots are required in the Provisions section of this Order to address the 303(d) listings for these waterbodies.

72. The Permittees submitted to the Regional Water Board the *City of Stockton San Joaquin County Pesticide Plan (Pesticide Plan)* on 1 April 2004 (revisions 22 September 2004). This work plan met the requirements for a pesticide pollution prevention plan under the NPDES area-wide MS4 permit, Order No. R5-2002-0181 (NPDES No. CAS083470). It was approved by the Executive Officer on 10 November 2004.

73. The Regional Water Board adopted a basin plan amendment (Resolution No. R5-2006-0061) that meets the requirements of a TMDL for the 303(d) listing for diazinon and chlorpyrifos in the Delta and addresses the toxic hot spots for diazinon and chlorpyrifos in Mosher Slough, Five-Mile Slough, Calaveras River, and Mormon Slough.

- a. The basin plan amendment includes water quality objectives for:
 - i. Diazinon: 160 nanograms per liter (ng/L or parts per trillion), one-hour average, not to be exceeded more than once in a three-year period and 100 ng/L, four-day average, not to be exceeded more than once in a three-year period; and
 - ii. Chlorpyrifos: 25 ng/L, one-hour average, not to be exceeded more than once in a three-year period and 15 ng/L, four-day average, not to be exceeded more than once in a three-year period,
- b. The Regional Water Board has also established the Loading Capacity (LC) for the Delta Waterways, Waste Load Allocations (WLA), and Load Allocations (LA) for discharges to the Delta Waterways, which are equal to:

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

where:

C_D = diazinon concentration in $\mu\text{g/L}$ of point source discharge for the WLA; nonpoint source discharge for the LA; or a Delta Waterway for the LC.

C_C = chlorpyrifos concentration in $\mu\text{g/L}$ of point source discharge for the WLA; nonpoint source discharge for the LA; or a Delta Waterway for the LC.

WQO_D = acute or chronic diazinon water quality objective in $\mu\text{g/L}$.

WQO_C = acute or chronic chlorpyrifos water quality objective in $\mu\text{g/L}$.

The waste load allocation will apply upon approval by the U.S. Environmental Protection Agency. Compliance with the waste load allocation is required by 1 December 2011.

- c. Dischargers of diazinon and chlorpyrifos to Delta Waterways are required to submit a management plan that describes actions that will be taken to reduce diazinon and chlorpyrifos discharges and meet the applicable allocations.
- d. The approved Pesticide Plan and any modifications to it, as proposed in the SWMP, meet the requirements for a management plan as described in Resolution R5-2006-0061.

- e. Limited data are available to determine the relative contribution of the Permittee's discharge (compared to upstream and atmospheric contributions from non-urban sources) to the diazinon and chlorpyrifos levels in 303(d) listed waters and toxic hot spots.
 - f. The phase-out of the sale of diazinon and chlorpyrifos for most residential and commercial uses should significantly reduce or eliminate, over time, the contribution of the Permittee's discharge to the non-attainment of water quality standards in the 303(d) listed waters and the maintenance of the diazinon and chlorpyrifos hot spots.
 - g. The continued monitoring of diazinon and chlorpyrifos is needed to determine the significance of the Permittees' contribution to diazinon and chlorpyrifos levels in 303(d) listed waters and the toxic hot spots. Monitoring is also needed to determine the effectiveness of the phase-out of urban uses of diazinon and chlorpyrifos; to assess whether the hot spots are maintained; and to assess whether water quality objectives are met.
 - h. This Order includes Provisions consistent with the TMDL waste load allocations and the Basin Plan implementation program. This Order specifies monitoring and assessment requirements to implement these Provisions.
74. The Permittees submitted to the Regional Water Board the *Smith Canal Drainage Area Analysis and Dissolved Oxygen Work Plan Final Report* on 15 December 2006. The Report met the requirements for a Smith Canal drainage analysis under the NPDES area-wide MS4 permit, Order No. R5-2002-0181 (NPDES No. CAS083470). The Smith Canal Drainage Area Analysis concluded that urban runoff does not appear to be the cause of the low DO levels in Smith Canal. The Permittees propose that low DO levels are the result of sediment oxygen demand in the Smith Canal sediments that are disturbed/resuspended during storm water discharge flows which increased water velocity. The Regional Water Board finds that additional monitoring of Smith Canal is required. Additional monitoring should include flow velocity at discharge outfalls.
75. The *Smith Canal Drainage Area Analysis and Dissolved Oxygen Work Plan Final Report*, described above, also met the requirements for a dissolved oxygen work plan under the NPDES area-wide MS4 permit, Order No. R5-2002-0181 (NPDES No. CAS083470). The Regional Water Board finds that the conclusions presented by the Permittees in this report are not supported by the limited data provided. Further information on the impact from storm water discharges to Lower Calaveras River, Five-Mile Slough, Mormon Slough, and Mosher Slough is needed. Monitoring for these waterbodies will be required by a separate Order.
76. The Basin Plan includes TMDL waste load allocations and an implementation program to control factors that contribute to the dissolved oxygen impairment in the Stockton Deep Water Ship Channel. This Order includes Provisions consistent

with the TMDL waste load allocations and the Basin Plan implementation program. A separate Order will specify monitoring and assessment requirements for these Provisions.

77. To address the dissolved oxygen impairment and toxic hot spots identified in the Stockton Urban waterways, the Permittees shall develop and implement a **Low Dissolved Oxygen Plan** for the following waterbodies:

- Lower Calaveras River
- Mormon Slough
- Five-Mile Slough
- Smith Canal
- Mosher Slough

The plan shall be included as a component of the SWMP. This Order includes Provisions for Low Dissolved Oxygen consistent with the Basin Plan implementation program and as needed to develop TMDLs to address these impairments. A separate Order will specify monitoring and assessment requirements for these Provisions.

78. The Permittees submitted to the Regional Water Board the *City of Stockton San Joaquin County Pathogen Plan (Pathogen Plan)* on 18 August 2004. This work plan met 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). The Pathogen Plan was approved by the Executive Officer on 10 November 2004 and monitoring under this Plan is ongoing.
79. California Water Code Section 13263(a) requires waste discharge requirements to implement the Basin Plan. The Basin Plan contains numeric and narrative water quality objectives to protect the beneficial uses of surface water and groundwater. The Basin Plan contains the "Policy for Application of Water Quality Objectives" that specifies how the Regional Water Board will ensure compliance with narrative water quality objectives. That Policy states that the Regional Water Board will consider:

"relevant numerical criteria and guidelines developed and/or published by other agencies and organizations (e.g., USEPA). In considering such criteria, the Board evaluates whether the specific numerical criteria, which are available through these sources and through other information supplied to the Board, are relevant and appropriate to the situation at hand and, therefore, should be used in determining compliance with the narrative objective." (Basin Plan at IV-17.00)

The Basin Plan contains a narrative toxicity objective that states: "All waters shall be maintained free of toxic substances in concentrations that produce detrimental physiological responses in human, plant, animal, or aquatic life." (Basin Plan at III-8.00)

The Basin Plan also contains a specific fecal coliform water quality objective for waters designated for contact recreation. The water quality objective is as follows: a geometric mean fecal coliform density of 200/100 mL of not less than five samples for any 30-day period; nor more than ten percent of the total number of samples taken during any 30 day period exceed 400/100 mL (Basin Plan, III-3.00).

- a. Discharges regulated by this permit contain pathogens. These pathogens cause illnesses, which are considered detrimental physiological responses in humans; therefore, the narrative toxicity objective applies. *Escherichia coli* (*E. coli*) is an indicator for disease causing pathogens. The Basin Plan does not have a specific *E. coli* water quality objective, however based on the "Policy for Application of Water Quality Objectives," the US EPA criteria for *E. coli* can be used to interpret attainment of the applicable narrative water quality objectives. The US EPA criteria and the fecal coliform water quality objective can be used to assess the effectiveness of the Permittees' Pathogens Plan that is currently underway. The US EPA criteria are: a geometric mean *E. coli* density of 126/100 mL of not less than 5 samples equally spaced over a 30-day period; and no sample should exceed a single sample maximum allowable density of 235 MPN/100 mL (US EPA, 1986).
 - b. This Order includes Provisions consistent with the TMDL waste load allocations and the Basin Plan implementation program. A separate Order will specify monitoring and assessment requirements for these Provisions.
80. The Delta is impaired because of elevated levels of methylmercury in fish. The Delta is on the Clean Water Act 303(d) list for mercury and the State Board has designated the Delta as a toxic hot spot under the Bay Protection and Toxic Hot Spot Cleanup Program.

Urban runoff is a source of methylmercury. Urban runoff from four Stockton pump outfalls sampled during the 2003/2004 wet season - Calaveras River Pump Station CR-46, Duck Creek Pump Station DC-65, Mosher Slough Pump Station MS-14, and Smith Canal Pump Station SC-57 - averaged 0.167, 0.103, 0.125, and 0.263 ng/l methylmercury, respectively (Wood et al., 2006a).⁸ The methylmercury concentrations ranged from 0.084 to 0.533 ng/l (Wood et al., 2006b).⁹

Monitoring is needed to characterize the concentrations and loads of methylmercury entering the Delta from Stockton area urban runoff and to evaluate

⁸ 2006a. Wood, M., C. Foe and J. Cooke. Sacramento - San Joaquin Delta Estuary TMDL for Methylmercury, Draft Report for Scientific Peer Review. June 2006. Available at: <http://www.waterboards.ca.gov/centralvalley/programs/tmdl/deltahg.html#SReports>

⁹ 2006b. Wood, M., M. Medina-Metzger, J. Cooke and P. Morris. Amendments to the Water Quality Control Plan for the Sacramento River and San Joaquin River Basins for The Control of Methylmercury in the Sacramento-San Joaquin Delta Estuary, Draft Staff Report for Scientific Peer Review. June 2006. Available at: <http://www.waterboards.ca.gov/centralvalley/programs/tmdl/deltahg.html#SReports>

options for controlling methylmercury discharges. Characterization studies should include evaluation of methylmercury and total mercury concentrations and loads in receiving waters and discharges, including discharges from detention basins and other management practices. Control Studies should identify variables that control methylmercury production and propose best management practices and implementation schedules. A separate Order will specify monitoring and assessment requirements that must be implemented for characterization and control studies.

81. Ambient water and sediment quality monitoring by the Surface Water Ambient Monitoring Program (SWAMP - Sacramento Basin) identified a high incidence of sediment toxicity in several urban creeks that drain the suburbs of Roseville (Weston et al., 2005).¹⁰ Nearly all creek sediments sampled caused toxicity to the resident aquatic amphipod *Hyalella azteca*, and about half the samples (10 of 21) caused nearly complete mortality (>90%). Another study by the Sacramento River Watershed Program (SRWP) observed sediment toxicity in almost every Sacramento area urban creek that was tested (Amweg et al., 2006).¹¹ Several pyrethroid pesticides were present in sediment samples from both studies at acutely toxic concentrations. Pyrethroid pesticides are persistent, hydrophobic, and rapidly sorb to sediments in aquatic environments. The sediment toxicity observed was localized to within tens to hundreds of meters downstream of storm water outfalls draining residential areas.

The phase-out of the sale of diazinon and chlorpyrifos for most residential and commercial uses resulted in an increase in the use of pyrethroid pesticide use in urban and residential areas. Monitoring of sediment quality (sediment toxicity testing) and urban runoff/discharges is needed to characterize sediment/water quality conditions, determine the significance of the increase in urban pyrethroid usage, and assess management practice effectiveness.

82. Monitoring and Reporting Program Order No. R5-2002-0181 required the Permittees to perform bioassessment at selected sites upstream and downstream of major discharge points from 2003 through 2007. The purpose of the bioassessment requirement was 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. Two years of collected data have been fully evaluated and provide a limited assessment of overall biological response. Additional time is needed in order to fully evaluate biological information collected to date so that future monitoring can be adapted to continue assessment of biological integrity of receiving water, while linking more directly with the statewide Surface Water

¹⁰ Weston, D.P., R.W. Holmes, J. You, and M.J. Lydy. 2005. Aquatic toxicity due to residential use of pyrethroid insecticides. *Environ. Sci. & Technol.* 39: 9778-9784.

¹¹ Amweg, E.L., D.P. Weston, J. You, and M.J. Lydy. 2006. Pyrethroid insecticides and sediment toxicity in urban creeks from California and Tennessee. *Environ. Sci. & Technol.* Published on web 1/31/2006.

Ambient Monitoring Program's (SWAMP's), long term goal of utilizing bioassessment to develop biocriteria for a variety of eco-regions and land-use dominated areas in California. Further bioassessment monitoring activities will not be required under this permit until the evaluation of the existing data is complete, and the monitoring effort is adapted in consultation with SWAMP's bioassessment workgroup.

83. The California Water Code allows the Regional Water Board to require dischargers submit technical and monitoring reports where the burden of these reports shall bear a reasonable relationship to the need for the report and the benefits to be obtained from the reports. The Regional Water Board may require the monitoring and technical reports that are identified as necessary in the Findings above specifically in this Order or in a separate Order under authority of the California Water Code.

PUBLIC PROCESS

84. The Regional Water Board has notified the Permittees and interested parties of its intent to prescribe waste discharge requirements for this discharge. These parties have been given an opportunity to address the Regional Water Board at a public hearing and an opportunity to submit their written views and recommendations to the Regional Water Board.
85. The Regional Water Board has considered the information in the attached Fact Sheet in developing the Findings of this Order. The attached Fact Sheet is part of this Order.
86. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Order No. R5-2002-0181 is rescinded, and that the Permittees, their agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. Discharge Prohibitions – Storm Water Discharges

1. Discharges from MS4s in a manner causing, or threatening to cause, a condition of pollution, contamination, or nuisance as defined in Section 13050 of the California Water Code are prohibited.
2. Discharges from MS4s, which cause or contribute to exceedances of water quality standards for surface water or ground water, are prohibited.

3. Discharges from MS4s containing pollutants, which have not been reduced to the MEP, are prohibited.

B. Discharge Prohibitions – Non-Storm Water Discharges

1. Each Permittee shall effectively prohibit all types of non-storm water discharges into its MS4s unless such discharges are either authorized by a separate NPDES permit; or not prohibited in accordance with this Order.
2. Pursuant to 40 CFR 122.26(d)(2)(iv)(B)(1), the following categories of non-storm water discharges need only be prohibited from entering a MS4 if such categories of discharges are identified by the Permittees as a source of pollutants to waters of the United States:
 - a. Diverted stream flows;
 - b. Rising ground waters;
 - c. Uncontaminated ground water infiltration as defined by 40 CFR 35.2005(20);
 - d. Uncontaminated pumped ground water;
 - e. Foundation drains;
 - f. Springs;
 - g. Water from crawl space pumps;
 - h. Footing drains;
 - i. Air conditioning condensation;
 - j. Flows from riparian habitats and wetlands;
 - k. Water line and hydrant flushing;
 - l. Landscape irrigation;
 - m. Discharges from potable water sources other than water main breaks;
 - n. Irrigation water;
 - o. Individual residential car washing;
 - p. De-chlorinated swimming pool discharges;
 - q. Lawn watering; and
 - r. Street wash water.
3. When a non-storm water discharge category above is identified as a source of pollutants to waters of the United States, the Permittees shall either:
 - a. Prohibit the discharge category from entering its MS4s; or
 - b. Not prohibit the discharge category and implement, or require the responsible party(ies) to implement, BMPs which will reduce pollutants to the MEP; and
 - c. Submit the following information to the Regional Water Board as part of the Annual Report:

- i. The non-storm water discharge category listed above that the Permittee elects not to prohibit; and
 - ii. The BMPs for each discharge category listed above that the Permittee will implement, or require the responsible party(ies) to implement, to prevent or reduce pollutants to the MEP.
4. Emergency fire fighting flows (i.e., flows necessary for the protection of life or property) do not require immediate implementation of BMPs and are not prohibited. However, each Permittee should coordinate with other agencies to develop a response plan to minimize the impact of fire fighting flows to the environment. BMPs must be implemented to reduce pollutants from non-emergency fire fighting flows (i.e., flows from controlled or practice blazes) identified by the Permittees to be significant sources of pollutants to waters of the State. The response plan and BMPs shall be updated as needed and incorporated into the SWMP.
5. Each Permittee shall examine all dry weather analytical monitoring results collected in accordance with the Monitoring and Reporting Program of this Order to identify water quality problems that may be the result of any non-storm water discharge, including any non-prohibited discharge category(ies). Follow-up investigations shall be conducted as necessary to identify and control any non-storm water discharges that are sources of pollutants. Non-prohibited discharges listed above containing pollutants that cannot be reduced to the MEP by the implementation of BMPs shall be prohibited on a categorical or case-by-case basis.

C. Receiving Water Limitations

1. Receiving water limitations are site-specific interpretations of water quality standards from applicable water quality control plans. As such they are required as part of the permit. However, a receiving water condition not in conformance with the limitation is not necessarily a violation of this Order. The Regional Water Board may require an investigation to determine cause and culpability prior to asserting a violation has occurred. Discharges from MS4s shall not cause the following in receiving waters:
 - a. Concentrations of dissolved oxygen to fall below 6.0 mg/l from 1 September through 30 November and 5.0 mg/l the remainder of the year.
 - b. Oils, greases, waxes, or other materials to form a visible film or coating on the water surface or on the stream bottom.

- c. Oils, greases, waxes, floating material (liquids, solids, foams, and scums) or suspended material to create a nuisance or adversely affect beneficial uses.
- d. Chlorine to be detected in the receiving water in concentrations equal to or greater than 0.01 mg/l.
- e. Aesthetically undesirable discoloration.
- f. Fungi, slimes, or other objectionable growths.
- g. The 30-day average for turbidity to increase as follows:
 - i. More than 1 Nephelometric Turbidity Units (NTUs) where natural turbidity is between 0 and 5 NTUs.
 - ii. More than 20 percent where natural turbidity is between 5 and 50 NTUs.
 - iii. More than 10 NTUs where natural turbidity is between 50 and 100 NTUs.
 - iv. More than 10 percent where natural turbidity is greater than 100 NTUs.
- h. The normal ambient pH to fall below 6.5, exceed 8.5, or change by more than 0.5 unit.
- i. Deposition of material that causes nuisance or adversely affects beneficial uses.
- j. Taste or odor-producing substances to impart undesirable tastes or odors to fish flesh or other edible products of aquatic origin or to cause nuisance or adversely affect beneficial uses.
- k. Radionuclides to be present in concentrations that exceed maximum contaminant levels specified in the California Code of Regulations, Title 22; that harm human, plant, animal or aquatic life; or that result in the accumulation of Radionuclides in the food web to an extent that presents a hazard to human, plant, animal, or aquatic life.
- l. Aquatic communities and populations, including vertebrate, invertebrate, and plant species, to be degraded.

- m. Toxic pollutants to be present in the water column, sediments, or biota in concentrations that adversely affect beneficial uses; that produce detrimental response in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.
 - n. Pathogen/Bacteria concentrations to be present that exceed criteria or threaten public health. The fecal coliform concentration, based on a minimum of not less than five samples for any 30-day period, to exceed a geometric mean of 100/200 MPN/100 mL, nor more than ten percent of the total number of fecal coliform samples taken during any 30-day period to exceed 200/400 MPN/100 mL.
 - o. Violation of any applicable water quality standard for receiving waters adopted by the Regional Water Board or the State Water Board pursuant to the CWA and regulations adopted there under.
2. The discharge shall not cause or contribute to an exceedance of any applicable water quality standards.
3. The Permittees shall comply with Discharge Prohibition A.2 and Receiving Water Limitations C.1 and C.2 through timely implementation of control measures and other actions to reduce pollutants in the discharges in accordance with the SWMP and other requirements of this Order, including any modifications. The SWMP shall be designed to achieve compliance with Receiving Water Limitations C.1 and C.2. If exceedance(s) of water quality objectives or water quality standards (collectively, WQS) persist notwithstanding implementation of the SWMP and other requirements of this Order, the Permittees shall assure compliance with Discharge Prohibition A.2 and Receiving Water Limitations C.1 and C.2 by complying with the following procedure:
 - a. Upon a determination by either the Permittees or Regional Water Board that discharges are causing or contributing to an exceedance of an applicable WQS, the Permittees shall promptly notify and thereafter submit a report to the Executive Officer that describes BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce any pollutants that are causing or contributing to the exceedance of WQSs. This Report of Water Quality Exceedance (RWQE) shall be incorporated in the Annual Report unless the Regional Water Board directs an earlier submittal. The RWQE shall include proposed revisions to the SWMP and an implementation schedule containing milestones and performance standards for new or improved BMPs, if applicable. The RWQE shall also include a monitoring program and the rationale for new or improved BMPs, including a discussion of expected pollutant reductions and how implementation of additional BMPs

will prevent future exceedance of WQSs. The Regional Water Board may require modifications to the RWQE.

- b. The Permittees shall submit any modifications to the RWQE required by the Regional Water Board within **30 days** of receipt of all data from analytical laboratories.
- c. Within **30 days** following approval of the RWQE by the Executive Officer, the Permittees shall revise the SWMP and monitoring program to incorporate the approved modified BMPs that have been and will be implemented, implementation schedule, and any additional monitoring required.
- d. The Permittees shall implement the revised SWMP and monitoring program in accordance with the approved schedule.

So long as the Permittees have complied with the procedures set forth above and are implementing the revised SWMP, the Permittees do not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless directed by the Executive Officer to develop additional BMPs.

D. Provisions

1. Within its geographic jurisdiction, each Permittee shall:
 - a. Comply with the requirements of this Order, the SWMP, and any modifications to the SWMP;
 - b. Coordinate among its internal departments and agencies, as appropriate, to facilitate the implementation of the requirements of the SWMP applicable to such Permittee in an efficient and cost-effective manner;
 - c. Participate in intra-agency coordination (e.g. Public Works, Planning, Building, Fire Department, Code Enforcement, Public Health, etc.) necessary to successfully implement the provisions of this Order and the SWMP.
 - d. Prepare an annual fiscal analysis identifying the expenditures for the storm water management program. This summary shall identify the storm water budget for the following year, using estimated percentages and written explanations where necessary, for the specific categories noted below:
 - i. Program management (administrative costs)

- ii. SWMP Development
 - a) Construction Element
 - b) Commercial/Industrial Element
 - c) Municipal Operations and Facilities Element
 - [Maintenance of Structural BMPs and Treatment Control BMPs](#)
 - d) Illicit Discharge and Detection Elimination Element
 - e) Public Outreach Element
 - f) Performance and Effectiveness Evaluations
- iii. Planning and [Land](#) Development
- iv. Monitoring Program
- v. Water Quality Based Programs
- vi. Training
- ~~vii. Maintenance of Structural BMPs and Treatment Control BMPs~~
- ~~viii.vii.~~ Other Services and Expenses (~~i.e., catch basin cleanup~~)

STORM WATER MANAGEMENT PROGRAM

2. The SWMP is required as part of the application pursuant to 40 CFR 122.26(2)(d)(iv); therefore it 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*).
3. Upon adoption of this Order, each Permittee shall modify its SWMP to address the requirements of this Order and submit the SWMP by **6 June 2008** ([or](#) within six months after the Order is adopted, [whichever is later](#)), for public review and comment, and Regional Water Board approval. New or revised BMPs may be based upon special studies or other activities conducted by the Permittees, literature review, or special studies conducted by other programs or dischargers. The SWMP shall contain the rationale for any new or revised BMPs and may include a discussion of baseline conditions, expected reductions in mass loading, and methods to be used to verify that BMPs have been successfully implemented. The SWMP shall include an implementation schedule containing identifiable milestones, detailed performance standards, and a compliance monitoring and reporting program. The performance standards shall be used as assessment tools to gauge the success of the program in achieving measurable benefits and improving water quality. The Permittees shall incorporate newly developed or updated BMPs and assessment tools/performance standards into applicable annual revisions to the SWMP and adhere to implementation of the

new/revised BMPs. The approved SWMP shall serve as the framework for identification, assignment, and implementation of BMPs. Each Permittee shall implement or require implementation of BMPs in the approved SWMP to ensure that pollutant discharges from its MS4s are prevented or reduced to the MEP. Each Permittee shall implement a SWMP that contains the following components:

- a. Program Management
 - i. Legal Authority
 - ii. Fiscal Analysis

- b. Program Elements
 - i. Construction
 - ii. Industrial and Commercial
 - iii. Municipal Operations
 - iv. Illicit Connections/Illicit Discharges
 - v. Public Outreach
 - vi. Planning and [Land](#) Development (Development Standards)
 - vii. Monitoring Program
 - viii. Water Quality Based Program
 - ix. Program Effectiveness Assessment and Reporting

~~The SWMP shall include a section that identifies all departments within the jurisdiction that conduct urban runoff related activities, and their roles and responsibilities under this Order. The annual report shall include an up-to-date organizational chart specifying these departments and key personnel responsible for issuance of enforcement actions.~~

PROGRAM MANAGEMENT

4. **Program Management:** Program management involves ensuring that all elements of the SWMP are implemented on schedule and all requirements of this Order are complied with.
 - a. **Annual Work Plan:** The Permittees shall submit an Annual Work Plan by **1 April** of each year. The Annual Work Plan shall provide the SWMP's and the Permittees' proposed activities for the upcoming year beginning 1 July of current year and ending 30 June the following year.

 - b. **Annual Report:** The Permittees shall submit an Annual Report by **1 September** of each year beginning with the 2007-2008 reporting period. The Annual Report shall document the status of the SWMP's and the Permittees' activities during the previous fiscal year, including the results of a qualitative and quantitative field level assessment of activities implemented by the Dischargers, and the performance of tasks contained in the SWMP. The Annual Report shall include a compilation of deliverables and milestones completed during the previous 12-month

period, as described in the SWMP and Annual Work Plan. The Annual Report shall include a program effectiveness assessment and recommended modifications to for each Program Element/Control Measure. Each Annual Report shall build upon the previous year's efforts. In each Annual Report, the Permittees may propose pertinent updates, improvements, or revisions to the SWMP, which shall be complied with under this Order.

- c. **SWMP Implementation:** Each Permittee shall continue implementation of their current SWMP until such time that the SWMP has been modified to be consistent with this Order and approved by the Regional Water Board. Once approved, the Permittees shall implement the modified SWMP consistent with the schedule specified within this Order. The SWMP, with modifications, revisions, or amendments as may be approved by the Executive Officer or Regional Water Board, is an enforceable component of this Order.
- d. **SWMP Modification:** The Permittees' SWMP may need to be modified, revised, or amended from time to time to respond to a change in conditions and to incorporate more effective approaches to pollutant control. Provisions of this Order require review and/or revision of the certain components of the Permittees' SWMP. Proposed SWMP revisions will be part of the annual review process and incorporated in the Annual Report. In addition, the Permittees shall revise their SWMP to comply with regional or watershed-specific requirements, and/or waste load allocations developed and approved pursuant to the process for the designation and implementation of TMDLs for impaired water bodies, and/or amendments to the Basin Plan when the amendments become effective. A thirty-day public notice and comment period shall apply to all proposed significant revisions to the SWMP. Significant SWMP revisions shall be brought before the Regional Water Board for review and approval. Minor SWMP revisions may be approved by the Executive Officer.
- e. **Memorandum of Understanding:** The Permittees shall collaborate with each other to address common issues, promote consistency between SWMP and Monitoring Programs, and to plan and coordinate activities required under this Order.
 - i. The Permittees shall review and revise their existing Memorandum of Understanding (MOU) to ensure that it provides for a management structure that includes the items below, and submit the updated MOU to the Regional Water Board no later than **6 June 2008** (or six months after adoption of the Order, whichever is later), The MOU should address the following:

- a) Designation of Joint Responsibilities;
 - b) Decision making;
 - c) Information management of data and reports, including the requirements under this Order; and
 - d) Any and all other collaborative arrangements for compliance with this Order.
- ii. The Permittees shall jointly develop and/or update the standardized format(s) for all reports required under this Order (e.g., annual reports, monitoring reports, fiscal analysis reports, and program effectiveness reports, etc.). The standardized reporting format(s) shall be used by all Permittees and shall include protocols for electronic reporting, specifically data reporting.
- f. **Departmental Coordination.** Identification of all departments within the Permittees' jurisdiction that conduct storm water pollution prevention related activities and their roles and responsibilities under this Order. The annual report shall include an up-to-date organizational chart specifying these departments and key personnel responsible for issuance of enforcement actions.
5. **Legal Authority:** The Permittees shall review, revise, maintain, and enforce adequate legal authority to control pollutant discharges from their MS4s through ordinance, statute, permit, contract, or similar means. This legal authority must, at a minimum, authorize the Permittees to:
- a. Control the contribution of pollutants in discharges of runoff associated with industrial and construction activity to their MS4s. This requirement applies both to industrial and construction sites, which have coverage under the statewide general industrial or construction storm water permits, as well as to those sites that do not require permit coverage.
 - b. Effectively prohibit identified illegal discharges (e.g., discharges of wash water from gas stations, mobile businesses, parking lots, storage areas containing equipment, discharges of pool water containing chlorine or bromine, discharges of sediment, pet waste, vegetation, food related wastes, toxic materials, pesticides, construction debris, etc.).
 - c. Prohibit and eliminate illicit connections to the MS4s;
 - d. Prohibit the discharge of spills, dumping, or disposal of materials other than storm water to its MS4s;

- e. Use enforcement mechanisms to require compliance with the Permittees storm water ordinances, permits, contracts, or orders;
 - f. Control the contribution of pollutants from one portion of the shared MS4s to another portion of the storm sewer system through interagency agreements among the Permittees (and other owners of the storm sewer system such as Caltrans or the Port of Stockton);
 - g. Carry out all inspections, surveillance, and monitoring necessary to determine compliance and noncompliance with local ordinances and permits, including the prohibition on illicit discharges to the MS4s;
 - h. Require the use of BMPs to prevent or reduce the discharge of pollutants from MS4s to the MEP; and
 - i. Require that Treatment Control BMPs be properly operated and maintained to prevent the breeding of vectors.
6. Each Permittee shall amend its existing ordinances as needed, to enforce all the requirements of this Order within **one year** after adoption of the SWMP. The ordinance(s) shall contain implementable and progressive enforcement procedures.
7. Each Permittee shall provide to the Executive Officer a statement certified by its chief legal counsel that it has adequate legal authority to implement and enforce each of the requirements contained in 40 CFR 122.26(d)(2)(i)(A-F) and this Order, including any modifications thereto in effect when the certified statement is provided. This statement shall be included in Permittees' revised SWMP(s), which shall describe the following:
- a. Citation of urban runoff related ordinances adopted by the Permittees and the reasons they are enforceable;
 - b. Progressive Enforcement Policy and how it will be effectively implemented;
 - c. Identification of the local administrative and legal procedures available to mandate compliance with urban runoff related ordinances and therefore with the conditions of this Order;
 - d. Description of how these ordinances are implemented and how enforcement actions under these ordinances may be appealed; and

- e. Description of whether the municipality can issue administrative orders and injunctions or if it must go through the court system for enforcement actions.
8. **Fiscal Analysis:** Each Permittee shall **secure the resources** necessary to meet the requirements of this Order and shall prepare an annual fiscal summary as part of the SWMP Annual Report. This summary shall, for each fiscal year covered by this Order, identify the expenditures necessary to accomplish the activities of the SWMP. Such summary shall include a description of the source(s) of funds that are proposed to meet the necessary expenditures, including legal restrictions on the use of such funds.

Program Elements

9. **Construction Program**

- a. The objectives of the Construction Program are to:
 - i. Provide adequate legal authority to control pollutants [to the MS4](#) from construction sites with land disturbance greater than or equal to one acre in size;
 - ii. Review construction plans and issue grading permits consistent with Permittee requirements;
 - iii. Require BMPs to control sediment and pollutants from construction sites [to the MS4](#);
 - iv. Maintain a tracking systems (inventory) of active construction sites;
 - v. Inspect construction sites to ensure proper BMP implementation and compliance with local requirements [and applicable Provisions of this Order;
 - vi. Bring forth enforcement actions for sites in violation of Permittee requirements and advise the Regional Water Board of potential violations of Construction General Permit requirements;
 - vii. Provide regular internal and external training on applicable components of the SWMP and related Permits; and
 - viii. Conduct an assessment as a part of the annual reporting process, determine the effectiveness of the Program Element and identify any necessary modifications.
- b. Each Permittee shall update and continue to implement the Construction Component of its SWMP to reduce pollutants in runoff from construction

sites during all construction phases to the MEP. At a minimum the Construction Program shall address the objectives listed above, as well as the following control measures:

- [Source Identification](#)
- [Threat to Water Quality Prioritization](#)
- [Reporting of Non-compliant Sites](#)
- ~~i. Municipal Code for Construction Sites~~
- ~~ii. Plan Review and Approval Process~~
- ~~iii. Construction Projects Inventory~~
- ~~iv. Construction Outreach~~
- ~~v. Construction Site Inspections & BMP Implementation~~
- ~~vi. Enforcement~~
- ~~vii. Training~~
- ~~viii. Effectiveness Assessment~~

- c. Each Permittee shall continue to implement and enforce a program to control runoff from all construction sites subject to the NPDES General Construction Permit. The program shall ensure the following minimum requirements are effectively implemented at these construction sites:
- i. Sediments generated on the project site shall be retained using adequate Source Control BMPs;
 - ii. Construction-related materials, wastes, spills, or residues shall be retained at the project site to avoid discharge to streets, drainage facilities, receiving waters, or adjacent properties by wind or runoff;
 - iii. Non-storm water runoff from equipment and vehicle washing and any other activity shall be contained at the project site;
 - iv. Erosion from slopes and channels shall be controlled by implementing an effective combination of BMPs such as limiting grading during the wet season; inspecting graded areas during rain events; planting and maintenance of vegetation on slopes; and covering erosion susceptible slopes.
 - v. Prior to issuing a grading permit for a construction site, require submittal of an [erosion and sediment control plan Storm Water Pollution Prevention Plan \(SWPPP\)](#) to the permitting agency that contains, at a minimum, the following:
 - a) If applicable to the site, a certification that a Notice of Intent has been submitted to the State Water Board.
 - b) A vicinity map showing nearby roadways, the construction site perimeter, and the geographic features and general

topography surrounding the site;

- c) A site map showing the construction project in detail, including the existing and planned paved areas and buildings; general topography both before and after construction; drainage patterns across the project area; and anticipated storm water discharge locations (i.e., the receiving water, a conduit to receiving water, and/or drain inlets);
- d) A description of BMPs to address contractor activities that generates pollutants including, at a minimum, vehicle washing, equipment maintenance, and waste handling.
- e) A description of the type and location of erosion and sediment control BMPs, including, but not limited to, limited grading during the wet season, and planting and maintenance of vegetation on slopes, to be employed at the site; and
- f) The name and telephone number of the qualified person responsible for implementing the Storm Water Pollution Prevention Plan (SWPPP).

[vi.. If applicable, all environmental permits must be obtained from agencies such as Department of Fish and Game, U.S. Army Corp of Engineers, and the Regional Water Board's 401 Water Quality Certification.](#)

d. Inspections

The Permittees shall include the inspection frequency for each construction site for compliance with local ordinances in the SWMP and shall continue to inspect each site until a notice of termination for coverage under the General Construction Permit is issued by the Regional Water Board. The inspections shall occur at a frequency determined to be effective by the Permittees and shall include a higher inspection frequency during the winter months (wet season) than during the summer months (dry season).

The Permittees shall inspect these sites for compliance with the local ordinances and the SWPPP components described above and as prescribed in the SWMP. In addition, if the Permittees observe chronic violations of their respective storm water ordinances at a given construction site, they shall notify the Regional Water Board as described in the SWMP. Each Permittee shall use its legal authority to promptly and effectively enforce its storm water ordinance to correct any violations observed during inspections.

10. Industrial/Commercial Program:

- a. The objectives of the Industrial/Commercial Program are to:
 - i. Provide adequate legal authority to control pollutants from industrial and commercial facilities [to the MS4](#);
 - ii. Develop and maintain an inventory of industrial and commercial facilities located within the Permittee's jurisdiction;
 - iii. Prioritize the industrial and commercial facilities within the inventory based on their threat to water quality;
 - iv. Conduct inspections of the industrial and commercial facilities that pose a significant threat to water quality with an inspection frequency based on the prioritization of the facility. Conduct follow-up inspections to bring the facility into compliance;
 - v. Implement a progressive enforcement policy to ensure that adequate enforcement is conducted and coordinated with the Regional Water Board regarding referrals of potential non-filers and inspection;
 - vi. Provide regular internal and external training on components of the SWMP and related Permits; and
 - vii. Conduct an assessment as a part of the annual reporting process, determine the effectiveness of the Program Element and identify any necessary modifications.
- b. Each Permittee shall update and continue to implement the Industrial/Commercial Component of its SWMP to reduce pollutants in runoff from industrial/commercial sites to the MEP. At a minimum, the Industrial/Commercial Program shall address the objectives listed above, as well as the following control measures:
 - i. Facility Inventory
 - ii. Prioritization and Inspection
 - iii. Industrial/Commercial Outreach
 - iv. Enforcement
 - v. Training
 - vi. Effectiveness Assessment
- c. Each Permittee shall require implementation of pollutant reduction and control measures at industrial and commercial facilities, with the

objective of effectively prohibiting non-storm water runoff and reducing pollutants in storm water runoff. Except as specified in other sections of this Order, pollutant reduction and control measures can be used alone or in combination, and can include Source and Treatment Control BMPs, which can be applied before, during, and/or after pollution generating activities.

11. **Municipal Program**

- a. The objectives of the Municipal Program are to:
 - i. Prevent sanitary sewer overflows (SSO) or spills from entering the storm drain system and respond quickly and appropriately if an SSO or spill does enter the storm drain system;
 - ii. Implement development standards that require source and treatment control BMPs to reduce pollutants from Permittee owned construction projects;
 - iii. Implement pollution prevention BMPs for public facilities (e.g., corporation yards and Facility Pollution Prevention Plans (FPPPs) for public facilities to minimize or eliminate pollutant discharges to the storm drain system;
 - iv. Implement a standard protocol for storage, usage, and disposal of pesticides, herbicides (including pre-emergents), and fertilizers on Permittee-owned property such as park sites, landscaped medians, and golf courses;
 - v. Promote the use of IPM methods and less toxic alternatives;
 - vi. Clean and maintain catch basin inlets to prevent debris accumulation and flooding;
 - vii. Ensure that catch basin inlets are properly stenciled, are permanently imprinted, or have legible curb markers to discourage illicit discharges into the storm drain system and promote the 24 hour hotline number;
 - viii. Maintain and inspect detention basins and pump stations;
 - ix. Conduct street sweeping activities;
 - x. Clean and inspect Permittee-owned parking facilities to minimize the build-up and discharge of pollutants to the storm drain system;

- xi. Provide regular internal training on applicable components of the SWMP; and
 - xii. Conduct an assessment as a part of the annual reporting process, determine the effectiveness of the Program Element and identify any necessary modifications.
- b. Each Permittee shall update and continue to implement a Municipal Program in its SWMP to effectively prohibit non-storm water discharges and prevent or reduce pollutants in runoff from all municipal land use areas, facilities, and activities to the MEP. At a minimum, the Municipal Program shall address the objectives listed above, as well as the following control measures:
- i. Sanitary Sewer Overflow and Spill Response
 - ii. New Development and Construction Requirements for Municipal Capital Improvement Projects
 - iii. Pollution Prevention at Permittee Facilities
 - iv. Landscape and Pest Management
 - v. Storm Drain System Maintenance
 - vi. Street Cleaning and Maintenance
 - vii. Parking Facilities Maintenance
 - viii. Detention Basin Construction and Maintenance
 - ix. Public Industrial Activities Management
 - x. Emergency Procedures
 - xi. Treatment Feasibility Study
 - xii. Non-emergency Fire Fighting Flows
 - xiii. Training
 - xiv. Effectiveness Assessment

12. Illicit Discharge Detection and Elimination Program

- a. The objectives of the Illicit Discharge Detection and Elimination Program are to:
- i. Provide adequate legal authority to control and/or prohibit pollutants from being discharged to the municipal storm drain system;
 - ii. Proactively detect illicit discharges and illegal connections through a variety of mechanisms including, but not limited to, public reporting, dry weather monitoring, and field crew inspections;
 - iii. Upon identification of an illegal connection, investigate and eliminate the connection through a variety of mechanisms including, but not limited to, permitting or plugging the connection;

- iv. Upon identification of an illicit discharge, investigate the discharge and conduct any necessary follow up actions to mitigate the impacts of the discharge;
 - v. Conduct an assessment as a part of the annual reporting process; determine the effectiveness of the Program Element and identify any necessary modifications.
- b. Each Permittee shall update and continue to implement an Illicit Discharge Detection and Elimination Program component of the SWMP to actively seek and eliminate illicit discharges and connections. At a minimum, the Illicit Discharge Detection and Elimination Component shall address the objectives listed above and include the following control measures:
- i. Detection of Illicit Discharges and Illegal Connections;
 - ii. Illegal Connection Identification and Elimination;
 - iii. Investigation/Inspection and Follow-up Procedures;
 - iv. Enforcement of Local Codes and Ordinances;
 - v. Training; and
 - vi. Effectiveness Assessment.

13. Public Outreach and Public Education (Collectively Public Outreach Program):

- a. Each Permittee shall implement a Public Outreach Program using all media as appropriate to (1) measurably increase the knowledge of target communities regarding MS4s, impacts of urban runoff on receiving waters, and potential BMP solutions for the target audience; and (2) to change the behavior of target communities and thereby reduce pollutant releases to MS4s and the environment. To accomplish these goals, the following objectives are addressed:
- i. Encourage the public to actively participate in the implementation of the storm water program as well as the various outreach events;
 - ii. Promote the use of the 24-hour public reporting hotline;
 - iii. Implement a public education strategy for the overall program that includes developing and distributing materials, conducting a mixed media campaign, participating in community outreach events, and conducting public opinion surveys to gauge the level of awareness and behavior change within a community and/or target audience;

- iv. Evaluate the ability to interface and coordinate with school education programs on a state, regional or local level;
 - v. Implement a business outreach program; and
 - vi. Conduct an assessment as a part of the annual reporting process, determine the effectiveness of the Program Element and identify any necessary modifications.
- b. Each Permittee shall update and continue to implement the Public Outreach Component of its SWMP to educate the public and encourage their participation in the implementation of the SWMP. At a minimum, the Public Outreach Program shall address the objectives listed above and include the following control measures:
- i. Public Participation
 - ii. Hotline
 - iii. Public Outreach Implementation
 - iv. Public School Education
 - v. Business Outreach
 - vi. Effectiveness Assessment
- c. Each Permittee shall incorporate a mechanism for **public participation** in the implementation of the SWMP (i.e., programs that engage the public in cleaning up creeks, removal of litter in river embankments, stenciling of storm drains, etc.).

PLANNING AND LAND DEVELOPMENT PROGRAM

14. The ~~core~~ objectives of the Planning and Land Development Program are as follows:
- a. Incorporate water quality and watershed protection principles into the Permittee's policies and planning procedures;
 - b. Ensure that selected post-construction storm water controls will remain effective upon project completion by requiring a maintenance agreement and transfer or establishing a maintenance district zone for all priority development projects;
 - c. Provide a comprehensive review of development plans to ensure that storm water quality controls are properly selected to minimize storm water quality impacts;

- d. Provide regular internal training on applicable components of the SWMP; and
 - e. As a part of the annual reporting process, conduct an assessment (at least annually) to determine the effectiveness of the Program Element and identify any necessary modifications.
15. Each Permittee shall update and continue to implement the Planning and Land Development Component of its SWMP to minimize the short and long-term impacts on receiving water quality from new development and redevelopment. At a minimum, the Planning and Land Development Program shall address the objectives listed above and include the following control measures:
- a. Incorporation of Water Quality Protection Principles into Permittee Procedures and Policies;
 - b. New/Revised Development Standards;
 - c. Plan Review Sign-Off;
 - d. Maintenance Agreement and Transfer;
 - e. Training; and
 - f. Effectiveness Assessment.

MONITORING PROGRAM

~~16. **Sediment Toxicity:** The Permittees shall develop and implement a sediment quality monitoring program (**Sediment Plan**). The Sediment Plan shall be included as a component of the SWMP and address the following criterion:~~

- ~~a. Development and adoption of policies, procedures, and/or ordinances to implement the Sediment Plan;~~
- ~~b. Plan for characterization of sediment quality within the Stockton Urbanized Areas receiving storm water discharges, including the detention basins;~~
- ~~c. Use of U.S. EPA standardized 10-day sediment toxicity testing method (U.S. EPA, 2000) for freshwaters using *Hyalella azteca*;~~
- ~~d. Sampling of sediment consistent with SWAMP Quality Assurance Management Plan (QAMP) protocols;~~
- ~~e. List of sample sites meeting the following criteria: sediment depositional areas downstream and within close proximity (within 25-100 meters) of representative storm water outfalls; assessment of land uses including residential, suburban residential, commercial, industrial, and mixed. Residential and suburban residential sample sites shall be selected based upon the age of the neighborhoods~~

~~including, but not limited to: areas predominately less than 10 years old, areas predominately 10—25 years old, and those areas with homes predominately older than 25 years old;~~

~~f. Sediment Total Organic Carbon (TOC) and grain size shall be reported with each sediment toxicity testing data summary;~~

~~g. If characterization of sediment quality has identified toxicity—follow up testing including sediment TIE approaches and chemical analyses of the sediments (including, but not limited to pyrethroid pesticide analyses) shall be conducted; and~~

~~h. Identification, development, implementation and assessment of BMPs to address controllable discharges of sediment-bound contaminants that may be linked to sediment toxicity to the MEP.~~

~~i. The Sediment Plan shall include a time schedule for implementation and assessment.~~

~~17. **Bioassessment Monitoring:** This Order requires the Permittees to complete evaluation of the previously collected bioassessment data. The analysis should include recommendations for continued monitoring and assessment or conclude monitoring. The comprehensive evaluation, assessment and recommendations shall be included in the SWMP.~~

~~WATER QUALITY BASED CONTROL PROGRAMS~~

~~18. The Permittees shall continue or initiate implementation of control programs for pollutants that have been identified to cause or contribute to exceedances of water quality standards and potential impairment of beneficial uses. These control programs shall be incorporated into each Permittee's SWMP and revised in accordance with the directives of this Order. At a minimum, these control programs shall include the following:~~

~~a. **Pesticides:** To address pesticide impairment of urban streams and the toxic hot spot, the Permittees shall continue to implement a pesticide toxicity control program (**Pesticide Plan**) that addresses their own use of pesticides, including diazinon and chlorpyrifos, and the use of such pesticides by other sources within their jurisdictions. The goal of the Pesticide Plan is to protect water quality by implementing Integrated Pest Management (IPM), and associated BMPs to minimize or eliminate pesticides in storm water. IPM shall be integrated into the Permittee municipal operations and promoted through the public outreach program.~~

- ~~i. For municipal operations the Permittees shall complete the following efforts:~~
 - ~~a) Implement pesticide, herbicide, and fertilizer application protocol at park sites, landscaped medians, and golf courses;~~
 - ~~b) Implement IPM program;~~
 - ~~c) Maintain and expand internal inventory on pesticide use and track Department of Parks and Recreation reported pesticide use; and~~
 - ~~d) Implement Landscaping Standards promoting native plants and IPM.~~

- ~~ii. For public outreach the Permittee shall complete the following efforts:~~
 - ~~a) Coordinate with the County Agriculture Commission and Extension Service and environmental organizations, and interested stakeholders and provide targeted information concerning proper pesticide use and disposal, potential adverse impacts on water quality, and alternative, less toxic methods of pest prevention and control, including IPM;~~
 - ~~b) Conduct periodic surveys of the local or regional sales and use of residential and commercial pest control products potentially found in storm water runoff. The first survey shall be conducted by **1 December 2009** (or two years after adoption of the Order, whichever is later). A second survey shall be conducted by **1 December 2011** (or four years after adoption of the Order, whichever is later). The surveys may be conducted in conjunction with other municipalities in the Central Valley or Bay Area as long as residences and retailers from the San Joaquin County area are included. The proposed survey design and protocols shall be submitted for approval with the Annual Work Plan for the year in which the survey is to be conducted;~~
 - ~~c) Continue coordination with household hazardous waste collection agencies. The Permittees shall support, enhance, and help publicize programs for proper pesticide disposal; and~~

- ~~d) Continue mechanisms to encourage the consideration of pest-resistant landscaping and design features in the design, landscaping, and/or environmental reviews of proposed development projects. Education programs shall target individuals responsible for these reviews and focus on factors affecting water quality impairment.~~
- ~~iii. In year 4 of the Permit term the Permittees shall conduct an assessment to determine if urban storm water is causing or contributing to an exceedance of water quality standards for diazinon and chlorpyrifos. If urban storm water is causing or contributing to an exceedance, then the Permittees shall determine the relative contribution of urban storm water runoff to diazinon and chlorpyrifos levels in waters within its jurisdiction that are identified as a toxic hot spot (per § 13394 of Porter-Cologne) or are on the GWA 303(d) list.~~
- ~~iv. The Permittees shall work with the pesticide control stakeholders and other municipal storm water management agencies to assess which pesticide products and uses pose less risk to surface water quality. When applicable, such products will be incorporated into the Pesticide Plan. The Permittees shall also work with the Regional Water Board and other agencies in implementing the TMDL for pesticides in impaired urban creeks and other tributaries to the Stockton Deep Water Channel and the San Joaquin River.~~
- ~~b. **Low Dissolved Oxygen:** To address the dissolved oxygen impairment and toxic hot spot, the Permittees shall develop and implement a **Low Dissolved Oxygen Plan** for the following waterways:~~
- ~~— Lower Calaveras River~~
 - ~~— Mormon Slough~~
 - ~~— Mosher Slough~~
 - ~~— Stockton Deep Water Ship Channel near McLeod Lake~~
 - ~~— Smith Canal~~

~~The plan shall be a component of the SWMP and shall include the following:~~

- ~~i. Based on the data collected by the monitoring program required under a separate Order, the Permittees shall identify areas and/or activities, which contribute to low DO concentrations in the receiving water, such as unsewered areas within the Stockton Urbanized Area, natural vegetation, animal and bird waste, discharges of food wastes and other oxygen demanding~~

~~substances, or direct discharges from existing collection systems due to sanitary sewer system overflow or blockage.~~

~~ii. A Final Report shall include identification of the BMP approach that will be implemented to address areas and/or activities as identified above. This shall include assessment of BMPs and a time schedule for implementation. The Final Report shall be included as part of the 2012 Annual Report (five years after adoption of the Order).~~

~~c. **Pathogens:** To address pathogen impairment of urban waterways, the Permittees shall continue implementation of the pathogen pollution prevention program (**Pathogen Plan**) that addresses their own contribution of pathogens within their jurisdictions, which shall be described in the SWMP. The goal of the Pathogens Plan is to protect water quality by identifying, monitoring, and mitigating the controllable sources of bacteria to the MEP.~~

~~i. The Permittees shall address this requirement by completing and implementing the Pathogens Plan that was approved by the Executive Officer in 2004 and shall be consistent with the schedule and work tasks prescribed in the SWMP. The Pathogens Plan shall also include annual updates within the Annual Reports.~~

~~ii. The Regional Water Board is concurrently considering a pathogen TMDL for the 303(d) listed water bodies as follows:~~

—Lower Calaveras River	—Five Mile Slough
—Mormon Slough	—Mosher Slough
—Smith Canal	—Walker Slough

~~iii. The proposed TMDL relies on the completion of the Permittees' Pathogen Plan, dated 1 April 2004 (revisions 18 August 2004) to address the pathogen impairment problem in the Stockton urban waterways. Regional Water Board staff will reevaluate the impairment problem in the Stockton urban waterways upon the expiration date of this Order and/or at the conclusion of the Pathogens Plan. If necessary, additional controls and regulatory options will be identified by the Regional Water Board with assistance by the Permittees to address the impairment.~~

~~d. **Mercury/Methylmercury:** To address the mercury impairment and the toxic hot spot of the Delta, the Permittee shall develop and implement a mercury pollution and prevention program (**Mercury Plan**) as a component of the SWMP. The goal of the Mercury Plan is to reduce~~

~~mercury exposure to humans and wildlife in the Delta and to prevent the creation or maintenance of toxic hot spots. The Mercury Plan shall be included as a component of the SWMP and shall address the following, as applicable:~~

- ~~i. Identification and incorporation of BMPs into the SWMP;~~
- ~~ii. Development and adoption of policies, procedures, and/or ordinances to implement the Mercury Plan;~~
- ~~iii. The reduction, to the maximum extent practicable, of mercury from controllable sources in storm water, including the identification of mercury-containing products used by the Permittees and a schedule for their timely control;~~
- ~~iv. Study the feasibility and benefits to local storm water quality of residential and commercial programs for diverting mercury-containing waste products (potentially including thermometers and other gauges, batteries, fluorescent and other lamps, switches, relays, sensors and thermostats) from the waste stream;~~
- ~~v. Coordination with Regional Water Board staff, to the extent appropriate, in conducting an assessment of the contribution of air pollution sources to mercury in the Permittees' storm water;~~
- ~~vi. A public education, outreach and participation program designed to reach residential, commercial and industrial users or sources of mercury-containing products or emissions; and~~
- ~~vii. Participation with other organizations to develop programs to reduce or eliminate sources of mercury within the Stockton Urbanized Area.~~

~~— The Mercury Plan shall include a schedule for implementation, although implementation of cost effective early action priorities should take place before the due date of the Mercury Plan. This plan shall also include provisions addressing training and technical assistance needed to help municipalities implement the Mercury Plan. To facilitate the development of the actions specified above, the Permittees may coordinate with publicly owned treatment works and other agencies to develop cooperative plans and programs.~~

~~19. In support of the Water Quality Based Programs, the Permittees shall develop and/or implement the storm water monitoring program as defined in the~~

~~Monitoring and Reporting Program.~~

~~The storm water monitoring program consists of the following elements:~~

- ~~—Baseline Monitoring
 - ~~oUrban Discharge Monitoring~~
 - ~~oReceiving Water Monitoring~~
 - ~~oWater Column Toxicity Monitoring~~
 - ~~oDry Weather Field screening~~~~
- ~~—Sediment Toxicity and Bioassessment~~
- ~~—Water Quality Based Programs
 - ~~oPesticide Plan~~
 - ~~oLow Dissolved Oxygen Plan~~
 - ~~oPathogen Plan~~
 - ~~oMercury Plan~~~~
- ~~—Special Studies
 - ~~oDetention Basin Monitoring~~
 - ~~oBMP Effectiveness Studies~~~~

~~The Permittees shall implement the Water Quality Monitoring program pursuant to the MRP and SWMP. Ultimately, the results of the MRP will be used to identify necessary BMPs, refine the SWMP to reduce pollutant loads, and protect and enhance the beneficial uses of the receiving waters in the Stockton Urbanized Area.~~

20.16. **Water Quality Planning and Design Principles** - In order to reduce pollutants and runoff flows from new development and redevelopment each Permittee shall address the following concepts:

- a. Each Permittee shall incorporate water quality and watershed protection principles into planning procedures and policies such as the Development Standards and requirements to direct land-use decisions and require implementation of consistent water quality protection measures for all development projects. These principles and policies shall be designed to protect natural water bodies, reduce impervious land coverage (such as through low impact development design), slow runoff to prevent hydromodification of waterways, and where feasible, maximize opportunities for infiltration of rainwater into soil. Such water quality and watershed protection principles and policies shall consider, at a minimum, the following:
 - i. Minimize the amount of impervious surfaces and directly connected impervious surfaces in areas of new development and

- redevelopment and where feasible to maximize on-site infiltration of runoff (low impact development concepts).
- ii. Implement pollution prevention methods supplemented by pollutant source controls and treatment. Where practical, use 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 MS4s.
 - iii. Preserve, and where possible, create or restore areas that provide important water quality benefits, such as riparian corridors, wetlands, and buffer zones.
 - iv. Limit disturbances of natural water bodies and natural drainage systems caused by development including roads, highways, and bridges.
 - v. Use methods available to estimate increases in pollutant loads in runoff flows resulting from projected future development. Require incorporation of structural and non-structural BMPs to mitigate the projected increases in pollutant loads.
 - vi. Identify and avoid development in areas that are particularly susceptible to erosion and sediment loss; or establish development guidance that protects areas from erosion and sediment loss.
 - vii. Coordinate with local traffic management programs to reduce pollutants associated with vehicles and increased traffic resulting from development.
 - viii. Implement source and structural controls as necessary and appropriate to protect downstream receiving water quality from increased pollutant loads and flows (hydromodification concepts) from new development and significant redevelopment.
 - ix. Control the post-development peak storm water run-off discharge rates and velocities to maintain or reduce pre-development downstream erosion, and to protect stream habitat.
- b. Low Impact Development - New development and redevelopment projects shall integrate Low Impact Development (LID) principles into project design. LID is 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 predevelopment hydrologic

functions.

- c. The Permittees shall revise applicable ordinances/standards/specifications no later than **one year** after the adoption of the SWMP/Development Standards by the Regional Water Board.

21.17. The Permittees submitted to the Regional Water Board the *City of Stockton San Joaquin County Storm Water Quality Control Criteria Plan* (SWQCCP), dated November 2003 (revised February 2005). This work plan met the requirements for Development Standards under the NPDES area-wide MS4 permit, Order No. R5-2002-0181 (NPDES No. CAS083470) by Regional Water Board letter dated 22 April 2005. The SWQCCP was approved by the City Council on 25 November 2003.

22.18. The Development Standards shall be amended/revised to ensure that the storm water quality and watershed principles, as listed above in 2016.a. and b., are integrated.

- a. **Post Development Standards** - Each Permittee shall ensure that all new development and significant redevelopment projects falling under the priority project categories listed below meet Development Standards. When the Development Standards are revised, the Development Standards shall apply to all priority projects or phases of priority projects, even though they have been approved prior to the date of adoption of the Development Standards which do not have one of the following: approval of a tentative map within two years prior to approval of the revised Development Standards, approval of improvement plans by the City or County engineers, or a permit for development or construction. Any extensions of a tentative map after adoption of revised Development Standards shall ensure compliance with the revised Development Standards. In addition, those infill projects that require only a Use Permit from the City or County that apply to the Priority Development Project Categories are subject to the requirements under the Development Standards. this Order, by the City or County engineer, permit for development or construction, or an approved tentative map.
- b. **Priority Development Project Categories** – Development Standards requirements shall apply to all new development and significant redevelopment projects falling under the priority project categories or locations as: (1) *significant* redevelopment; (2) home subdivision of 10 housing units or more; (3) commercial developments great than 100,000 square feet; (4) automotive repair shops; (5) restaurants; (6) parking lots 5,000 square feet or more or with 25 or more parking spaces and potentially exposed to urban runoff; (7) street and roads; and (8) retail gasoline outlets (RGO).

Significant redevelopment is defined as the creation or addition of at least 5,000 square feet of impervious surfaces on an already developed site. Significant redevelopment includes, but is not limited to, expansion of a building footprint or addition or replacement of a structure; structural development including an increase in gross floor area and/or exterior construction or remodeling; replacement of impervious surface that is not part of a routine maintenance activity; and land disturbing activities related with structural or impervious surfaces. Where significant redevelopment results in an increase of less than fifty percent of the impervious surfaces of a previously existing development, and the existing development was not subject to the Development Standards, the numeric sizing criteria discussed below applies only to the addition, and not the entire development.

- c. **BMP Requirements** – The Development Standards shall include a list of recommended pollution prevention, source control, and/or structural treatment control BMPs. The Development Standards shall require all new development and significant redevelopment projects falling under the above priority project categories or locations to implement a combination of BMPs selected from the recommended BMP list, including at a minimum: (1) source control BMPs and (2) structural treatment control BMPs.
- d. **Numeric Sizing Criteria** – The Development Standards shall require structural treatment BMPs to be implemented for all priority development projects. In addition to meeting the BMP requirements listed above, all structural treatment BMPs for a single priority development project shall be sized collectively to comply with either the volume-based or flow-based numeric sizing criteria:
 - i. Volume-based BMPs shall be designed to mitigate (infiltrate or treat) either:
 - a) The volume of runoff produced from a 24-hour 85th percentile storm event, as determined from the local historical rainfall record; or
 - b) The volume of runoff produced by the 85th percentile 24-hour rainfall event, determined as the maximized capture storm water volume for the area, from the formula recommended in *Urban Runoff Quality Management, WEF Manual of Practice No. 23/ASCE Manual of Practice No. 87, (1998)*; or
 - c) The volume of annual runoff based on unit basin storage volume, to achieve 80% or more volume treatment by the method recommended in *California Storm Water Best*

Management Practices Handbook – Industrial/Commercial, (1993); or

- d) A Permittee justified design storm volume that is determined as part of the Development Standard development and approved by the Executive Officer. The treatment of this volume shall achieve approximately the same reduction in pollutant loads achieved by treatment of the 85th percentile 24-hour runoff event.
- ii. Flow-based BMPs shall be designed to mitigate (infiltrate or treat) either:
 - a) The maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity, as determined from the local historical rainfall record, multiplied by a factor of two; or
 - b) 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.
- e. **Equivalent Numeric Sizing Criteria** - Each Permittee may develop any equivalent numeric sizing criteria or performance-based standard for post-construction structural treatment BMPs as part of the Development Standards. Such equivalent sizing criteria may be authorized for use in place of the above criteria. In the absence of development and subsequent authorization of such equivalent numeric sizing criteria, the above numeric sizing criteria requirement shall be implemented.
- f. **Pollutants and Activities of Concern** – As part of the Development Standards, each Permittee shall identify pollutants and/or activities of concern for each new development or significant redevelopment project. The Permittees shall identify the pollutants of concern by considering the following (1) receiving water quality, including pollutants for which receiving waters are listed as impaired under CWA Section 303(d); (2) land use type of the development project and pollutants associated with that land use type; (3) pollutants expected to be present on site at concentrations that pose potential water quality concerns; (4) activities expected to be on the site; and (5) changes in flow rates and volumes resulting from the development project and sensitivity of receiving waters to changes in flow rates and volumes.
- g. **Restaurants Less than 5,000 Square Feet** - New development and significant redevelopment restaurant projects where the land area

development is less than 5,000 square feet shall meet all Development Standards except for structural treatment BMP and numeric sizing criteria requirement above.

- h. **Infiltration and Groundwater Protection** – To protect groundwater quality, each Permittee shall consider the type of development and resulting storm water discharge and, if appropriate, apply restrictions to the use of structural BMPs, which are designed to primarily function as infiltration devices (such as infiltration trenches and infiltration basins).
- i. **Regional Storm Water Mitigation** – A Permittee may apply to the Regional Water board for approval of a regional or sub-regional storm water mitigation program to substitute in part or wholly Development Standard requirements. The Regional Water board may consider for approval such a program if 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 has secure funding; and
 - e) Be completed in five years including the construction and start-up of treatment facilities.

23.19. **Maintenance Agreement and Transfer**

Each Permittee shall require that all developments subject to Development Standards and site specific plan requirements provide verification of maintenance provisions for Structural Treatment Control BMPs, including but not limited to legal agreements, covenants, California Environmental Quality Act (CEQA) mitigation requirements, and or conditional use permits. Verification at a minimum shall include:

- a. The developer's signed statement accepting responsibility for maintenance until the responsibility is legally transferred; and either
- b. A signed statement from the public entity assuming responsibility for Structural Treatment Control BMP maintenance and that it meets all local agency design standards; or
- c. Written conditions in the sales or lease agreement, which requires the recipient to assume responsibility for maintenance and conduct a maintenance inspection at least once a year; or
- d. Written text in project conditions, covenants and restrictions for residential properties assigning maintenance responsibilities to the Home Owners Association for maintenance of the Structural Treatment

Control BMPs; or

- e. Any other legally enforceable agreement that assigns responsibility for the maintenance of post-construction Structural Treatment Control BMPs.

24.20. **Mitigation Funding**

The Permittees may propose a management framework, for endorsement by the Regional Water Board 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;
- b. Legislative funds become available;
- c. Off-site mitigation is required because of loss of environmental habitat; or an approved watershed management plan or a regional storm water mitigation plan exists that incorporates an equivalent or improved strategy for storm water mitigation.

25.21. **California Environmental Quality Act (CEQA) Document Update**

Each Permittee shall incorporate into its CEQA process, procedures for considering potential storm water quality impacts and providing for appropriate mitigation when preparing and reviewing CEQA documents. The procedures shall require consideration of the following:

- a. Potential impact of project construction on storm water runoff;
- b. Potential impact of project post-construction activity on storm water runoff;
- c. Potential for discharge of storm water from areas from material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas;
- d. Potential for discharge of storm water to impair the beneficial uses of the receiving waters or areas that provide water quality benefit;
- e. Potential for the discharge of storm water to cause significant harm on the biological integrity of the waterways and water bodies;
- f. Potential for significant changes in the flow velocity or volume of storm water runoff that can cause environmental harm; and
- g. Potential for significant increases in erosion of the project site or surrounding areas.

26.22. **General Plan Update**

- a. Each Permittee shall amend, revise, or update its General Plan to include watershed and storm water quality and quantity management considerations and policies when any of the following General Plan elements are updated or amended: (i) Land Use, (ii) Housing, (iii) Conservation, and (iv) Open Space.
- b. Each Permittee shall provide the Regional Water Board with the draft amendment or revision when a listed General Plan element or the General Plan is noticed for comment in accordance with California Government Code § 65350 *et seq.*

27.23. **Planning Department Coordination, Enforcement and Tracking**

- a. Each Permittee shall provide for the review of proposed project plan and require measures to ensure that all applicable development will be in compliance with their storm water ordinances, local permits, and all other applicable ordinances and requirements.
- b. Each Permittee shall develop a process by which Development Standards will be implemented. 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 in implementing the Development Standards, as well as any other measures necessary for the implementation of Development Standards.
- c. Each Permittee shall develop and implement no later than (6 months from this Order's adoption) the following:
 - i. A GIS or other electronic system for tracking projects that have been conditioned for post-construction treatment control BMPs. The electronic system, at a minimum, should contain the following information:
 - a) Municipal Project ID.
 - b) State WDID No.
 - c) Project Acreage.
 - d) BMP Type and Description.
 - e) BMP Location (coordinates).
 - f) Date of Acceptance.
 - g) Date of O&M Certification.
 - h) Inspection Date and Summary.
 - i) Corrective Action.
 - j) Date Certificate of Occupancy Issued.

28.24. **Targeted Employee Training**

Each Permittee shall periodically train its employees in targeted positions (whose jobs or activities are engaged in development planning) to ensure they can adequately implement the Planning and Land Development Program requirements.

25. **Technical Guidance and Information for Developers**

By ~~6 June~~ December **2008** (or ~~6 months~~ 1 year after the Order is adopted, whichever is later), each Permittee shall submit a revised/functionally updated Development Standards [e.g., Stormwater Quality Control Criteria Plan (SWQCCP)] consistent with the requirements of this Order as a component of the SWMP. The Development Standards shall include guidelines and provide recommendations for low impact development/ hydromodification strategies for the development community in the Stockton Urbanized Area. The guidelines shall encourage the use of low impact development/ hydromodification strategies and be based on the existing site design control measures identified in the existing Development Standards. Prior to approval of the Development Standards, the early implementation of measures likely to be included in the Development Standards shall be encouraged by the Permittees.

MONITORING PROGRAM

26. **Sediment Toxicity:** The Permittees shall develop and implement a sediment quality-monitoring program (**Sediment Plan**). The Sediment Plan shall be included as a component of the SWMP and address the following criterion:

- a. Development and adoption of policies, procedures, and/or ordinances to implement the Sediment Plan;
- b. Plan for characterization of sediment quality within the Stockton Urbanized Areas receiving storm water discharges, including the detention basins;
- c. Use of U.S. EPA standardized 10-day sediment toxicity testing method (U.S. EPA, 2000) for freshwaters using *Hyalella azteca*;
- d. Sampling of sediment consistent with SWAMP Quality Assurance Management Plan (QAMP) protocols;
- e. List of sample sites meeting the following criteria: sediment depositional areas downstream and within close proximity (within 25-100 meters) of representative storm water outfalls; assessment of

land uses including residential, suburban residential, commercial, industrial, and mixed. Residential and suburban residential sample sites shall be selected based upon the age of the neighborhoods including, but not limited to: areas predominately less than 10 years old, areas predominately 10 – 25 years old, and those areas with homes predominately older than 25 years old;

- f. Sediment Total Organic Carbon (TOC) and grain size shall be reported with each sediment toxicity testing data summary;
- g. If characterization of sediment quality has identified toxicity – follow up testing including sediment TIE approaches and chemical analyses of the sediments (including, but not limited to pyrethroid pesticide analyses) shall be conducted; and
- h. Identification, development, implementation and assessment of BMPs to address controllable discharges of sediment-bound contaminants that may be linked to sediment toxicity to the MEP.
- i. The Sediment Plan shall include a time schedule for implementation and assessment.

27. **Bioassessment Monitoring:** This Order requires the Permittees to complete evaluation of the previously collected bioassessment data. The analysis should include recommendations for continued monitoring and assessment or conclude monitoring. The comprehensive evaluation, assessment and recommendations shall be included in the SWMP.

WATER QUALITY BASED CONTROL PROGRAMS

28. The Permittees shall continue or initiate implementation of control programs for pollutants that have been identified to cause or contribute to exceedances of water quality standards and potential impairment of beneficial uses. These control programs shall be incorporated into each Permittee's SWMP and revised in accordance with the directives of this Order. At a minimum, these control programs shall include the following:
- a. **Pesticides:** To address pesticide impairment of urban streams and the toxic hot spot, the Permittees shall continue to implement a pesticide toxicity control program (**Pesticide Plan**) that addresses their own use of pesticides, including diazinon and chlorpyrifos, and the use of such pesticides by other sources within their jurisdictions. The goal of the Pesticide Plan is to protect water quality by implementing Integrated Pest Management (IPM), and associated BMPs to minimize or eliminate pesticides in storm water. IPM shall be integrated into the

Permittee municipal operations and promoted through the public outreach program.

i. For municipal operations the Permittees shall complete the following efforts:

- a) Implement pesticide, herbicide, and fertilizer application protocol at park sites, landscaped medians, and golf courses;
- b) Implement IPM program;
- c) Maintain and expand internal inventory on pesticide use and track Department of Parks and Recreation reported pesticide use; and
- d) Implement Landscaping Standards promoting native plants and IPM.

ii. For public outreach the Permittee shall complete the following efforts:

- a) Coordinate with the County Agriculture Commission and Extension Service and environmental organizations, and interested stakeholders and provide targeted information concerning proper pesticide use and disposal, potential adverse impacts on water quality, and alternative, less toxic methods of pest prevention and control, including IPM;
- b) Conduct periodic surveys of the local or regional sales and use of residential and commercial pest control products potentially found in storm water runoff. The first survey shall be conducted by **1 December 2009** (or two years after adoption of the Order, whichever is later). A second survey shall be conducted by **1 December 2011** (or four years after adoption of the Order, whichever is later). The surveys may be conducted in conjunction with other municipalities in the Central Valley or Bay Area as long as residences and retailers from the San Joaquin County area are included. The proposed survey design and protocols shall be submitted for approval with the Annual Work Plan for the year in which the survey is to be conducted;
- c) Continue coordination with household hazardous waste collection agencies. The Permittees shall support, enhance, and help publicize programs for proper pesticide disposal;

and

- d) Continue mechanisms to encourage the consideration of pest-resistant landscaping and design features in the design, landscaping, and/or environmental reviews of proposed development projects. Education programs shall target individuals responsible for these reviews and focus on factors affecting water quality impairment.
- iii. In year 4 of the Permit term the Permittees shall conduct an assessment to determine if urban storm water is causing or contributing to an exceedance of water quality standards for diazinon and chlorpyrifos. If urban storm water is causing or contributing to an exceedance, then the Permittees shall determine the relative contribution of urban storm water runoff to diazinon and chlorpyrifos levels in waters within its jurisdiction that are identified as a toxic hot spot (per § 13394 of Porter-Cologne) or are on the CWA 303(d) list.
- iv. The Permittees shall work with the pesticide control stakeholders and other municipal storm water management agencies to assess which pesticide products and uses pose less risk to surface water quality. When applicable, such products will be incorporated into the Pesticide Plan. The Permittees shall also work with the Regional Water Board and other agencies in implementing the TMDL for pesticides in impaired urban creeks and other tributaries to the Stockton Deep Water Channel and the San Joaquin River.
- b. **Low Dissolved Oxygen:** To address the dissolved oxygen impairment and toxic hot spot, the Permittees shall develop and implement a **Low Dissolved Oxygen Plan** for the following waterways:
- Lower Calaveras River
 - Mormon Slough
 - Mosher Slough
 - Stockton Deep Water Ship Channel near McLeod Lake
 - Smith Canal

The plan shall be a component of the SWMP and shall include the following:

- i. Based on the data collected by the monitoring program required under a separate Order, the Permittees shall identify areas and/or activities, which contribute to low DO concentrations in

the receiving water, such as unsewered areas within the Stockton Urbanized Area, natural vegetation, animal and bird waste, discharges of food wastes and other oxygen demanding substances, or direct discharges from existing collection systems due to sanitary sewer system overflow or blockage.

- ii. A Final Report shall include identification of the BMP approach that will be implemented to address areas and/or activities as identified above. This shall include assessment of BMPs and a time schedule for implementation. The Final Report shall be included as part of the 2012 Annual Report (five years after adoption of the Order).
- c. **Pathogens:** To address pathogen impairment of urban waterways, the Permittees shall continue implementation of the pathogen pollution prevention program (**Pathogen Plan**) that addresses their own contribution of pathogens within their jurisdictions, which shall be described in the SWMP. The goal of the Pathogens Plan is to protect water quality by identifying, monitoring, and mitigating the controllable sources of bacteria to the MEP.
- i. The Permittees shall address this requirement by completing and implementing the Pathogens Plan that was approved by the Executive Officer in 2004 and shall be consistent with the schedule and work tasks prescribed in the SWMP. The Pathogens Plan shall also include annual updates within the Annual Reports.
 - ii. The Regional Water Board is concurrently considering a pathogen TMDL for the 303(d) listed water bodies as follows:
 - Lower Calaveras River
 - Mormon Slough
 - Smith Canal
 - Five-Mile Slough
 - Mosher Slough
 - Walker Slough
 - iii. The proposed TMDL relies on the completion of the Permittees' Pathogen Plan, dated 1 April 2004 (revisions 18 August 2004) to address the pathogen impairment problem in the Stockton urban waterways. Regional Water Board staff will reevaluate the impairment problem in the Stockton urban waterways upon the expiration date of this Order and/or at the conclusion of the Pathogens Plan. If necessary, additional controls and regulatory options will be identified by the Regional Water Board with assistance by the Permittees to address the impairment.

d. **Mercury/Methylmercury:** To address the mercury impairment and the toxic hot spot of the Delta, the Permittee shall develop and implement a mercury pollution and prevention program (**Mercury Plan**) as a component of the SWMP. The goal of the Mercury Plan is to reduce methylmercury exposure to humans and wildlife in the Delta and to prevent the creation or maintenance of toxic hot spots. The Mercury Plan shall be included as a component of the SWMP and shall address the following, as applicable:

- i. Identification and incorporation of BMPs into the SWMP;
- ii. Development and adoption of policies, procedures, and/or ordinances to implement the Mercury Plan;
- iii. The reduction, to the maximum extent practicable, of mercury from controllable sources in storm water, including the identification of mercury-containing products used by the Permittees and a schedule for their timely control;
- iv. Study the feasibility and benefits to local storm water quality of residential and commercial programs for diverting mercury-containing waste products (potentially including thermometers and other gauges, batteries, fluorescent and other lamps, switches, relays, sensors and thermostats) from the waste stream;
- v. Coordination with Regional Water Board staff, to the extent appropriate, in conducting an assessment of the contribution of air pollution sources to mercury in the Permittees' storm water;
- vi. A public education, outreach and participation program designed to reach residential, commercial and industrial users or sources of mercury-containing products or emissions; and
- vii. Participation with other organizations to develop programs to reduce or eliminate sources of mercury within the Stockton Urbanized Area.

The Mercury Plan shall include a schedule for implementation, although implementation of cost effective early action priorities should take place before the due date of the Mercury Plan. This plan shall also include provisions addressing training and technical assistance needed to help municipalities implement the Mercury Plan. To facilitate the development of the actions specified above, the Permittees may coordinate with publicly owned treatment works and other agencies to develop

cooperative plans and programs.

29. In support of the Water Quality Based Programs, the Permittees shall develop and/or implement the storm water monitoring program as defined in the Monitoring and Reporting Program.

The storm water monitoring program consists of the following elements:

- Baseline Monitoring
 - Urban Discharge Monitoring
 - Receiving Water Monitoring
 - Water Column Toxicity Monitoring
 - Dry Weather Field screening
- Sediment Toxicity and Bioassessment
- Water Quality Based Programs
 - Pesticide Plan
 - Low Dissolved Oxygen Plan
 - Pathogen Plan
 - Mercury Plan
- Special Studies
 - Detention Basin Monitoring
 - BMP Effectiveness Studies

The Permittees shall implement the Water Quality Monitoring program pursuant to the MRP and SWMP. Ultimately, the results of the MRP will be used to identify necessary BMPs, refine the SWMP to reduce pollutant loads, and protect and enhance the beneficial uses of the receiving waters in the Stockton Urbanized Area.

30. Program Effectiveness Assessment

- a. The Permittees shall assess the effectiveness of their SWMP in their Annual Reports. The assessment shall identify the direct and indirect measurements that the Permittees used to track the effectiveness of their programs as well as the outcome levels at which the assessment is occurring consistent with this Order. Direct and indirect measurements shall include, but not limited to, conformance with established Performance Standards, quantitative monitoring to assess the effectiveness of Control Measures, measurements or estimates of pollutant load reductions or increases from identified sources, raising awareness of the public, and/or detailed accounting/documentation of SWMP accomplishments.

- b. The Permittees shall track the long-term progress of their SWMP towards achieving improvements in receiving water quality.
- c. The Permittees shall use the information gained from the program effectiveness assessment to improve their SWMPs and identify new BMPs, or modification of existing BMPs. This information shall be reported within the Annual Reports consistent with this Order.
- d. Long Term Effectiveness Assessment (LTEA) Strategy: Each Permittee shall collaborate with the other Permittees to develop a LTEA strategy, which shall build on the results of the Permittees' Annual Reports and the initial program effectiveness assessments. The LTEA shall be submitted to the Regional Water Board no later than 180 days prior to the permit expiration date (by June 2010) and shall identify how the Permittees will conduct a more comprehensive effectiveness assessment of the storm water program as part of the SWMP. The strategy will address the storm water program in terms of achieving both programmatic goals (raising awareness, changing behavior) and environmental goals (reducing pollutant discharges, improving environmental conditions).

ADDITIONAL REQUIREMENTS

- 31. **Monitoring and Reporting Program:** The Permittees shall comply with Monitoring and Reporting Program No. R5-2007-____, which is part of this Order, and any revisions thereto approved by the Board. Because the Permittees operate facilities which discharge waste subject to this Order, this Monitoring and Reporting Program is necessary to ensure compliance with these waste discharge requirements.
- 32. This Order may be modified, or alternatively, revoked or reissued, prior to the expiration date as follows: a) to address significant changed conditions identified in the technical reports required by the Regional Water Board which were unknown at the time of the issuance of this Order; b) to incorporate applicable requirements of statewide water quality control plans adopted by the State Water Board or amendments to the Basin Plan approved by the State Water Board; or c) to comply with any applicable requirements, guidelines, or regulations issued or approved under Section 402(p) of the CWA, if the requirement, guideline, or regulation so issued or approved contains different conditions or additional requirements not provided for in this Order. The Order as modified or reissued under this paragraph shall also contain any other requirement of the CWA when applicable.
- 33. Each Permittee shall comply with all applicable items of the "Standard Provisions and Monitoring Requirements for Waste Discharge Requirements (NPDES)," dated February 2004, which are part of this Order. This

attachment and its individual paragraphs are referred to as "Standard Provisions."

34. This Order expires on __ **December 2012**. The Permittees must file a Report of Waste Discharge (RWD) in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of such date as application for re-issuance of waste discharge requirements. U.S. EPA 40 CFR Part 122 *Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems* states the fourth year annual report may be used as the RWD reapplication package. The reapplication package must identify any proposed changes or improvement to the SWMP, an assessment of the effectiveness of the program, and monitoring activities for the upcoming five year term of the permit, if those proposed changes have not already been submitted pursuant to 40 CFR 122.42 (c).

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an order adopted by the California Regional Water Quality Control Board, Central Valley Region, on __ **December 2007**.

PAMELA C. CREEDON, Executive Officer