CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2015-0024

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 6 June 2012, 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. Included with the ROWD was the Permittees' fourth year annual report which proposed changes to their Storm Water Management Plan based on a program effectiveness assessment.

2. A Region-wide MS4 general permit is under development by the Regional Water Board which will provide the Permittees an option to participate in a Regional Monitoring Program (RMP) and reduce some of the required local water quality monitoring. The proposed Region-wide MS4 general permit is not expected to be considered for adoption by the Regional Water Board for at least six months to a year from now. Therefore, this Individual Order is being renewed for a limited term to allow the option to participate in a (RMP) immediately rather than having to wait until the Region-wide MS4 general permit is adopted.

3. Prior to issuance of this Order, the Permittees were covered under the NPDES area-wide MS4 permit, Order No. R5-2007-0173 (NPDES No. CAS083470), adopted on 6 December 2007.

4. 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.

5. 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.

6. 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
- Delta Waterways (Deep Water Ship Channel)
- Duck Creek
- Five Mile Slough
- Fourteen Mile Slough
- Pixley Slough
- Little Johns Creek
- Mormon Slough
- Mosher Slough
- Smith Canal
- Walker Slough
- French Camp Slough
- Delta Waterways (eastern portion)

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.

7. 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.

8. 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.

9. 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 to the Permittees' conveyance system. Discharges from these sources may be subject to TMDL allocations and control programs.

10. 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.

11. 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.

12. Development and urbanization especially threaten environmentally sensitive water bodies such as those supporting rare, threatened or endangered species and CWA 303(d) impaired water bodies. Such 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 environmentally sensitive water body.

13. 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.

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14. 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.

15. 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.

16. 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.

17. 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.

18. 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 urban discharge and receiving water monitoring for two wet weather and two dry weather events per year at four sites. In addition, water column and sediment toxicity testing, bioassessment monitoring, and dry weather field screening has been conducted under prior permits. These data have been reported in the Permittees' annual reports.

19. 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 the third permit term, these special studies included:

- Pathogen Plan (indicator bacteria);
- Pesticide Plan (organophosphate pesticides);
- Dissolved Oxygen Plan (oxygen-demanding compounds);
- Mercury Plan;
- Detention Basin Monitoring;
- 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

20. 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.

21. This Order does not constitute an unfunded local government mandate subject to subvention under Article XIIIB, Section (6) of the California Constitution for several reasons, including, but not limited to, the following. First, this 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 XIIIB, Section (6) of the California Constitution.

22. 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).

23. 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. The burden 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 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.

24. This Order 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.

25. 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.

26. 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.

27. 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

[1] A definition of MEP may be found in Attachment C.

permittees establish priorities and procedures for inspection of industrial facilities and priority commercial establishments. This Order, 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).

28. 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, Permit for Storm Water Discharges Associated with Industrial Activities (General Industrial Permit)] and the other for storm water from construction sites [NPDES No. CAS000002, General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, (General Construction Permit)]. In addition, the Regional Water Board has issued General Permit Order No. 2013-0074 (CAG995001) for dewatering and other low threat discharges, and General Permit Order No. R5-2013-0073 (CAG995002) for limited 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.

29. 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.

30. 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.

31. 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.

32. 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 `3 February 2011, the Regional Water Board issued Order No. R5-2011-0005 (NPDES No. CA0084077), a separate NPDES municipal storm water permit for the Port of Stockton. On 19 September 2012, the State Water Board issued a separate statewide NPDES storm water permit to Caltrans (NPDES No. CAS000003, Order No. 2012-0011-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.

33. 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.

34. The Regional Water Board adopted the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins*, revised October 2011 (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.

35. 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 MUN, AGR, IND, REC-1, REC-2, WARM, COLD, MIGR, SPWN, WILD, NAV, and COMM.

36. 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.

37. 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 theses 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.

38. 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.

39. The State Water Resources Control Board (SWRCB) convened a Storm Water Panel (Blue Ribbon Panel) of experts to address the issue of numeric effluent limits[5]. The study also concluded that it is not feasible at this time to set

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[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."

[4]40 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.

enforceable numeric effluent criteria for storm water and non-storm water discharges from MS4s.

40. 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.

41. 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)).

42. 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).

43. Federal regulation 40 CFR 122.42(c)(7) requires the Permittees to submit an annual report that identifies water quality improvements or degradation.

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[6] Water Quality Order No. 2011-0002-DWQ, Statewide General National Pollutant Discharge Elimination System (NPDES) Permit for Biological and Residual , Discharges to Waters of the United States from Vector Control Applications, General Permit No. CAG990004

Water Quality Order No. 2011-0004-DWQ, Statewide General National Pollutant Discharge Elimination System (NPDES) Permit for Biological and Residual Pesticide Discharges to Waters of the United States from Spray Applications, General Permit No. CAG990007

[7] Water Quality Order No. -2001-0009-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

44. 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.

45. This Order serves as an NPDES permit, pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect immediately from the date of hearing, provided that U.S. EPA has no objections. If the USEPA has objections, this Order will take effect 50 days from the date of the hearing.

46. 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

47. In compliance with the third term Permit, the Permittees submitted a ROWD, as well as a proposed SWMP on 6 June 2012. The ROWD evaluated the effectiveness of the Permittees' respective storm water programs, 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, a wide range of continuing, enhanced and new BMPs, control measures, and performance standards are proposed to be implemented during the fourth term Permit period as amendments to the SWMP.

48. During the fourth 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.

49. 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.

50. Due to the limited term of this Order, the proposed amendments in the ROWD are not incorporated in this Order. The Permittees must continue implementing the SWMPs approved by the Regional Water Board on 8 October 2009 (Resolution No. R5-2009-0105) including all minor modifications in the 2008, 2009, 2010, 2011, 2012, and 2013 Annual Reports, unless modifications are otherwise approved by the EO or Regional Water Board. 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 plan under this Order. 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.

51. 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) 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.

52. The SWMP 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. Program Implementation, Effectiveness Assessment, and Reporting

53. 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.

54. The Permittees' 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.

55. 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, reduce pollutants to the maximum extent practicable, and will assure that 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

56. 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.

57. 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.

58. 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.

59. 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.

60. 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 (March 2009).

61. 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)].

62. 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. This is an appropriate threshold since vehicular development size is a good indicator of potential impacts of urban runoff from RGOs on receiving waters.

63. 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.

64. In March 1997, the California Storm Water Quality Task Force (SWQTF) published Best Management Practice Guide – Retail Gasoline Outlets.

65. 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.

66. 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.

67. The Permittees developed a Development Standards Plan (also known as *Final Stormwater Quality Control Criteria Plan*, March 2009). During the third permit term, each Permittee has required new development and redevelopment projects to implement the Development Standards Plan. A Fact Sheet and volume reduction calculator were developed to communicate development standard changes and assist with compliance. In addition, the Permittees review existing codes and ordinances for consistency with new requirements. 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

68. 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.

69. 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.

70. The Regional Water Board considers storm water discharges from the Stockton Urbanized Area to be significant sources of pollutants. The 2010 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)
Bear Creek	San Joaquin and Calaveras Counties; partly in Delta Waterways, eastern portion	43 miles	Copper Diazinon Escherichia coli (E. coli) Low Dissolved Oxygen
Calaveras River, Lower	from Stockton Diverting Canal to the San Joaquin River; partly in the Delta Waterways, eastern portion	7.6 miles	Chlorpyrifos Diazinon Mercury Organic Enrichment/Low Dissolved Oxygen (DO) Pathogens
Delta Waterways	Eastern Portion	2,972 acres (see Attachment B)	Chlorpyrifos DDT Diazinon Group A Pesticides Invasive Species Mercury Unknown Toxicity

Waterbody	Reach	Estimated Size affected	Pollutant/Stressor(s)
Delta Waterways	Stockton Ship Channel	1,603 acres	Chlorpyrifos DDT Diazinon Dioxin Furan Compounds Group A Pesticides Invasive Species Mercury Organic Enrichment/Low DO Pathogens PCBs (Polychlorinated Biphenyls) Unknown toxicity
Duck Creek	San Joaquin County	33 miles	Chlorpyrifos Escherichia coli (E. coli) Mercury
Five-Mile Slough	Alexandria Place to Fourteen Mile Slough	1.62 miles	Chlorpyrifos Diazinon Organic Enrichment/Low DO Pathogens
French Camp Slough	Confluence of Littlejohns and Lone Tree Creeks to San Joaquin River, San Joaquin Co; partly in Delta Waterways, eastern portion	6.32 miles	Chlorpyrifos Diazinon Escherichia coli (E. coli) Dissolved Oxygen Sediment Toxicity Unknown Toxicity
Mormon Slough	Commerce Street to Stockton Deep Water Channel, partly in the Delta Waterways, eastern portion	0.93 miles	Organic Enrichment/Low DO Pathogens
Mormon Slough	Stockton Diverting Canal to Commerce Street	5.2 miles	Pathogens

Waterbody	Reach	Estimated Size affected	Pollutant/Stressor(s)
Mosher Slough	Downstream of I-5, in Delta Waterways, eastern portion	1.31 miles	Chlorpyrifos Diazinon Mercury Organic Enrichment/Low DO Pathogens
Mosher Slough	Upstream of I-5, partly in Delta Waterways, eastern portion	3.5 miles	Pathogens
Pixley Slough	San Joaquin County; partly in Delta Waterways, eastern portion	13 miles	Chlorpyrifos Diazinon Disulfoton Escherichia coli (E. coli) Dissolved Oxygen Unknown Toxicity
Smith Canal	in Delta Waterways, eastern portion	2.41 miles	Organic Enrichment/Low DO Organophosphorous Pesticides Pathogens
Walker Slough	partly in Delta Waterways, eastern portion	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.

71. 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.

72. 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.

73. 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.

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

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.

75. 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.

76. 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 was previously required by a separate Order.

77. 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.

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

- Lower Calaveras River
- Mormon Slough
- Five-Mile Slough
- Stockton Deep Water Ship Channel near McLeod Lake
- Smith Canal
- Mosher Slough

The plan was 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 specified monitoring and assessment requirements for these Provisions. A final report on implementation of the Low Dissolved Oxygen Plan was submitted to the Central Valley Water Board in January 2013.

79. 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 (including any amendments or updates made in accordance with the requirements of this Order and as prescribed in the SWMP) ongoing.

80. 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 Order 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.

81. 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.[8] The methylmercury concentrations ranged from 0.084 to 0.533 ng/l.[9]

Monitoring is needed to characterize the concentrations and loads of methylmercury entering the Delta from Stockton area urban runoff and to evaluate 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 previously specified monitoring and assessment requirements that must be implemented for characterization and control studies.

82. 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.

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[8] Wood, M., C. Foe, J. Cooke, and S. Louie. 2010. Sacramento – San Joaquin Delta Estuary TMDL for Methylmercury. Central Valley Regional Water Quality Control Board Staff Report. Sacramento. April 2010. Table 6.11, 376 p. Available at: http://www.waterboards.ca.gov/centralvalley/water_issues/tmdl/central_valley_projects/delta_hg/april_2010_hg_tmdl_hearing/apr2010_tmdl_staffrpt_final.pdf

[9] *Ibid.*

[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.

83. 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.

84. Monitoring and Reporting Program under the third permit term 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 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 Order until the evaluation of the existing data is complete, and the monitoring effort is adapted in consultation with SWAMP's bioassessment workgroup.

85. 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

86. 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.

87. 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.

88. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

IT IS HEREBY ORDERED that Order No. R5-2007-0173 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 continue to implement the 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.

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. Other Services and Expenses

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. The Permittees must continue implementing their SWMPs approved by the Regional Water Board on 8 October 2009 and Storm Water Management Program element modifications contained in the 2008, 2009, 2010, 2011, 2012, and 2013 Annual Reports, unless otherwise authorized by the EO or Regional Water Board. 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

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**. The Annual Report shall document the status of the SWMPs 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 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 ensure that their existing Memorandum of Understanding (MOU)provides for a management structure that includes the items below, 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 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.) as needed. 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 implement existing ordinances as needed, to enforce all the requirements of this. The ordinance(s) shall contain implementable and progressive enforcement procedures.

7. Each Permittee shall maintain 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, 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 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

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 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).

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. 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 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 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; and
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; and

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 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 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; and
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 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 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.

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 as needed or as required by the Executive Officer.

17. The Permittees submitted to the Regional Water Board their revised/functionally equivalent Development Standards, *City of Stockton San Joaquin County Storm Water Quality Control Criteria Plan* (SWQCCP), dated March 2009. The SWQCCP was approved by the City Council on

7 July 2007 and the County Board of Supervisors in February 2010.

18. The Development Standards shall ensure that the storm water quality and watershed principles, as listed above in 16.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 revised Development Standards shall apply to all priority projects or phases of priority projects at 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.

    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.

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.

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.

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.

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*.

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 continue to implement 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.

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**

Each Permittee submitted 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.

MONITORING PROGRAM

26. **Monitoring and Reporting Program**: The Discharger shall comply with the Monitoring and Reporting Program which is part of this Order, and any revisions thereto approved by the Board. Because the Discharger operates facilities which discharge waste subject to this Order, this Monitoring and Reporting Program is necessary to ensure compliance with these waste discharge requirements

27. **Sediment Toxicity:** The Permittees developed and implemented a sediment quality-monitoring program (**Sediment Plan**) and submitted a final report for the Sediment Toxicity Plan to the Central Valley Water Board on 15 January 2013. The Sediment Plan was included as a component of the 2009 SWMP and addressed 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. A time schedule for implementation and assessment. A final report, Sediment Toxicity, was submitted to the Regional Water Board on 15 January 2013.

28. **Bioassessment Monitoring:** The Permittees have completed an evaluation of the previously collected bioassessment data under the previous permit terms. The analysis included recommendations for continued monitoring and assessment or conclude monitoring. The comprehensive evaluation, assessment and recommendations were included in the SWMP.

WATER QUALITY BASED CONTROL PROGRAMS

29. 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 have been 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) Continue coordination with household hazardous waste collection agencies. The Permittees shall support, enhance, and help publicize programs for proper pesticide disposal; and

c) 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. 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 implemented 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
- Five-Mile Slough

A final report for the Low Dissolved Oxygen Plan was submitted to the Central Valley Water Board in January 2013.

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, and any amendments or updates to the Pathogen Plan thereto. 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
- Bear Creek
- Duck Creek
- Pixley Slough
- Five-Mile Slough
- Mosher Slough
- Walker Slough
- Stockton Ship Channel
- French Camp 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 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 or 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.

30. 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

Unless otherwise modified by the EO or Regional Water Board, 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.

31. **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.

ADDITIONAL 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 **17 October 2016**. The Permittees must file a ROWD 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 ROWD reapplication package. Because the permit term is less than five years, the Discharger may submit the annual report as the ROWD reapplication package not later than 180 days in advance of the Order expiration date. 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 **17 April 2015**.

Original Signed by Adam Laputz for

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PAMELA C. CREEDON, Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2015-0024
NPDES NO. CAS083470

MONITORING AND REPORTING PROGRAM

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

I. MONITORING AND REPORTING PROGRAM REQUIREMENTS

This Monitoring and Reporting Program (MRP) is issued pursuant to Water Code Section 13267. MRP No. R5-2015-0024 is necessary to determine compliance with Order No. R5-2015-0024, and to determine the effectiveness of the storm water program.

The Permittees shall not implement any changes to this MRP unless and until the Regional Water Board or Executive Officer issues a revised MRP or an alternative monitoring plan approved by the Executive Officer. For example, the Executive Officer may allow revisions to the MRP appropriate to implement Regional Monitoring Programs and reduce local water quality monitoring requirements. The Executive Officer may also allow revisions to the MRP if the Permittees propose an alternative monitoring program that meets the objectives of the MRP, directs their resources to the most critical water quality issues, and collects data to support management decisions to address those water quality issues. Attachment A shows the City of Stockton limits and the San Joaquin County urbanized areas (collectively called Stockton Urbanized Area) which are covered under this Order. To save time and money, and avoid duplication of efforts, the Permittees shall coordinate their monitoring program with local, state, and federal agencies whenever possible.

A. **Annual Work Plan:** By **1 April**, each Permittee shall submit an Annual Work Plan that supports the development, implementation, and effectiveness of the approved Storm Water Management Plan (SWMP) and Order R5-2015-0024.

B. **Annual Report:** The Permittees shall submit, in both <u>electronic and paper formats</u> and no later than **1 September** of each year, an Annual Report documenting the progress of the Permittees' implementation of the SWMP and the requirements of Order R5-2015-0024. The Annual Report shall cover

each fiscal year from **1 July through 30 June**. The status of compliance with permit requirements including implementation dates for all time-specific deadlines should be included for each program area. If permit deadlines are not met, the Permittees shall report the reasons why the requirement was not met and how the requirements will be met in the future, including projected implementation dates. A comparison of program implementation results to performance standards established in the SWMP and Order R5-2015-0024 shall be included for each program area. Specific requirements that must be addressed in the Annual Reports are listed below.

1. An Executive Summary discussing the effectiveness of the SWMP to reduce storm water pollution to the MEP.

2. Summary of activities conducted by the Permittees;

3. Identification of BMPs and a discussion of their effectiveness at reducing urban runoff pollutants; and

4. Summary of the monitoring data and an assessment of each component of the MRP. To comply with Provisions C.1 and C.2 (Receiving Water Limitations) of Order R5-2015-0024 the Permittees shall compare receiving water and discharge data with applicable water quality standards. The lowest applicable standard from the Basin Plan, California Toxics Rule (CTR), and California Title 22 (Title 22), and constituent specific concentrations limits (e.g., mercury) shall be used for comparison. When the data indicate that MS4 discharges are causing or contributing to exceedances of applicable water quality standards or constituent specific concentrations limits, the Permittees shall prepare a Report of Water Quality Exceedance and identify potential sources of the problems, and recommend future monitoring and BMP implementation measures to identify and address the sources.

   Raw data are required to be submitted in electronic format.

5. For each water quality program plan requirement (e.g., Pathogen Plan) the Annual Reports shall include the following results and information:

   a. all physical, chemical and biological data collected in the assessment;

   b. all graphs, charts, statistical analysis, modeling, and any other analytical analyses in support of the Permittees' evaluation of the data and conclusions derived from that analysis; and

c. documentation of quality assurance and control procedures (QA/QC).

6. Effectiveness assessment for each program element, as defined in the SWMP, shall be conducted annually, shall be built upon each consecutive year, and shall identify any necessary modifications. The SWMP shall describe, in detail, the performance standards or goals to use to gauge the effectiveness of the storm water management program. The primary questions that must be assessed for each program element include the following:

   a. Level 1 Outcome: Was the Program Element implemented in accordance with the Permit Provisions, SWMP Control Measures and Performance Standards?

   b. Level 2 Outcome: Did the Program Element raise the target audience's awareness of an issue?

   c. Level 3 Outcome: Did the Program Element change a target audience's behavior, resulting in the implementation of recommended BMPs?

   d. Level 4 Outcome: Did the Program Element reduce the load of pollutants from the sources to the storm drain system?

   e. Level 5 Outcome: Did the Program Element enhance or change the urban runoff and discharge quality?

   f. Level 6 Outcome: Did the Program Element enhance or change receiving water quality?

7. A summary of any Reports of Water Quality Exceedance (RWQEs) that have been completed during the year, and a status update for those in progress. The summary shall include the conclusions and recommendations of completed RWQEs and the status of any additional BMP implementation pursuant to RWQEs;

8. Pursuant to 40 CFR 122.42(c)(7), the Permittees shall identify water quality improvements in, or degradation of, urban storm water;

9. An estimation of total annual pollutant loads due to storm water/urban runoff for each baseline monitoring sampling station.

10. For each monitoring component, photographs and maps of all monitoring station locations and descriptions of each location; and

11. Recommendations to improve the monitoring program, BMPs, Performance Standards, and the SWMP to address potential receiving water quality exceedances and potential pollutant sources, and to meet the MEP standard.

12. Provide operating data from all city pump stations as an appendix in electronic format only to assist in calculating flow volumes, as applicable.

C. **Certification:** All work plans and reports submitted to the Regional Water Board shall be signed and certified pursuant to federal regulations at 40 CFR 122.41 (k). Each report shall contain the following completed declaration:

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility, of a fine and imprisonment for knowing violations.

Executed on the __ day of, 20__, at _____.

(Signature)_____(Title)_____";

The Permittees shall mail the original of each annual report to:

CALIFORNIA REGIONAL WATER QUALITY
CONTROL BOARD – CENTRAL VALLEY REGION
11020 Sun Center Drive, #200
Rancho Cordova, CA 95670

A copy of the annual report shall also be mailed to:

REGIONAL ADMINISTRATOR
ENVIRONMENTAL PROTECTION AGENCY
REGION 9
75 Hawthorne Street
San Francisco, CA 94105

II. MONITORING PROGRAM

The primary objectives of the Monitoring Program include, but are not limited to:

- Assessing compliance with this Order;
- Measuring and improving the effectiveness of the SWMPs;
- Assessing the chemical, physical, and/or biological impacts on receiving waters resulting from urban runoff;
- Characterization of urban runoff;
- Identifying sources of pollutants; and
- Assessing the overall health and evaluating long-term trends in receiving water quality.

Ultimately, the monitoring results should be used to refine the SWMP to reduce pollutant loadings and protect and enhance the beneficial uses of the receiving waters in the Stockton Urbanized Area.

In lieu of the Monitoring Program outlined in Section II of the MRP, the Permittees may elect to propose and implement an alternative Monitoring Program that achieves the objectives listed above and is approved by the Executive Officer. The proposed alternative monitoring plan may be submitted as part of their Annual Work Plan. The alternative Monitoring Program proposal should include information such as the monitoring approach, monitoring locations, constituents monitored, and frequency at which they will be monitored. If the Permittees propose an alternative Monitoring Program, they shall submit a proposal signed by an authorized representative informing the Central Valley Water Board that the Permittees would like to implement an alternative Monitoring Program, and the date on which the alternative Monitoring Program is proposed to commence. Written approval of the Permittees' request, by the Executive Officer, is required prior to discontinuing the Monitoring Program outlined in Section II of the MRP and initiating the proposed Monitoring Program.

Regional Monitoring Program

The Permittees may elect to participate in a RMP and may request a reduction in some of the local water quality monitoring specified in the MRP of this Order. Participation in a RMP by a Permittee shall consist of providing funds and/or in-kind services to the RMP at least equivalent to discontinued individual monitoring and study efforts

If the Permittees propose to reduce the local water quality monitoring and instead participate in a RMP, the Permittees shall submit a letter signed by an authorized representative informing the Regional Water Board that the Permittees will participate in a RMP, the date on which local water quality monitoring required under the MRP for this Order, would cease, or be modified, and specific monitoring locations and constituent combinations that would no longer be conducted individually. To ensure consistency with this Order and this MRP, reductions in local water quality monitoring require the Executive Officer's prior written approval of the Permittees' request, including related SWMP modification. Approval by the Executive Officer is not required prior to participating in the RMP.

If the Permittees are approved to participate in a RMP and reduce some local water quality monitoring, the Permittees shall continue to participate in a RMP until such time as the Permittees inform the Board that participation in a RMP will cease and all local water quality monitoring will be reinstituted. To the extent approved by the Executive Officer, some local water quality monitoring under the Monitoring and Reporting Program, and related monitoring identified in the SWMP, will not be required under this Order so long as the Permittees adequately support a RMP. Data from the RMP may be utilized to characterize the receiving water in the permit renewal. Alternatively, the Permittees may conduct any site-specific receiving water monitoring deemed appropriate by the Permittees and submit that monitoring data with this characterization monitoring. If the Permittees fail to adequately support the RMP, as defined by the RMP Steering Committee, the Permittees shall reinstitute local water quality monitoring pursuant to the Monitoring and Reporting Program, upon written notice from the Executive Officer. During participation in the RMP, the Permittees may conduct and submit any or part of the monitoring included in this Monitoring and Reporting Program that is deemed appropriate by the Permittees, provided the modified monitoring program approved by the Executive Officer is conducted at a minimum.

RMP data is not intended to be used directly to represent receiving water quality for purposes of determining if a discharge is causing or contributing to an exceedance of any applicable water quality standards. RMP monitoring stations are established generally as "integrator sites" to evaluate the combined impacts on water quality of multiple discharges; RMP monitoring stations would not normally be able to identify the source of any specific constituent, but would be used to identify water quality issues needing further evaluation. RMP monitoring data, along with local Permittees data, may be used to help establish ambient receiving water quality for a water quality data analysis after evaluation of the applicability of the data for that purpose. RMP data, as with all environmental monitoring data, can provide an assessment of water quality at a specific location and time that can be used in conjunction with other information, such as other receiving water monitoring data, spatial and temporal distribution and trends of receiving water data, point and non-point source discharges, receiving water flowrate and velocity,

and to determine a potential source or sources of a constituent that contributed to an exceedance of any applicable water quality standards.

During the period of participation in the RMP, the Permittees shall continue to report any individually conducted local water quality monitoring data in the Annual Report consistent with Provision I.B.4, Monitoring and Reporting Program. In addition, with each submitted Annual Report, the Permittees' shall include 1) a statement that the Permittees are participating in the RMP and have reduce some of the local water quality monitoring program required by the permit, and 2) the Permittees shall continue to attach a copy of the letter originally submitted to the Regional Water Board describing the monitoring location(s) and constituents that will no longer be conducted individually.

The Monitoring Program consists of the following elements:

<u>Local Water Quality Monitoring</u>

- Baseline Monitoring
  - Urban Discharge Monitoring
  - Receiving Water Monitoring
  - Water Column Toxicity Monitoring
  - Dry Weather Field screening

- Sediment Toxicity

- Bioassessment

- Water Quality Based Programs
  - Pesticide Plan
  - Low Dissolved Oxygen Plan
  - Pathogen Plan
  - Mercury Plan

The Permittees shall implement the Monitoring Program as follows:

III. BASELINE MONITORING

A. The Permittees shall conduct water column monitoring in both receiving waters (see Section D – Receiving Water Monitoring) and urban discharge outfalls (see Section C – Urban Discharge Monitoring). Water monitoring will take place at each receiving water and urban discharge stations. The water column monitoring shall include all storm water pollutants of concern (POCs) identified during the 2008-2012 baseline monitoring as identified in Table 1 of

this Order. The frequency of monitoring shall be in accordance with Table B.

B. **Sampling Protocol**

1. Samples from each receiving water and urban discharge station described below shall be analyzed for all constituents listed in Table 1. All sample collection and analyses shall follow standard U.S. Environmental Protection Agency (U.S. EPA) protocol.

2. If a constituent is not detected at the method detection limit for its respective test method listed in Table 1 in more than 75 percent of the 12 consecutive sampling events, it need not be further analyzed unless the observed occurrences show concentrations greater than receiving water quality standards. The Permittees shall conduct annual confirmation sampling for non-detected constituents during the first storm event monitored every year at each station. However, if confirmation sampling shows non-detect for a constituent for two successive years, the Permittees may propose to the Regional Water Board staff that the constituent be removed from Table 1. If the constituent is detected, it must continue to be monitored.

3. Grab samples shall be used for receiving water monitoring. For monitoring of urban discharge outfalls during wet weather, the Permittees shall use flow-composite sampling equipment when feasible and grab samples otherwise.

4. The Permittees shall collect flow data at the time of sampling for all monitoring stations sampled during a given year. Receiving water or urban discharge flow may be estimated using U.S. EPA methods[1] at sites where flow measurement devices are not in place.

C. **Urban Discharge Monitoring**

Since 1992, the Permittees have been monitoring five drainage basins, shown in Attachment A. Beginning in 2002 one of the residential sites (MS-18) was eliminated and the remaining four sites were monitored through 2007. For this permit term, samples shall be taken from representative outfalls for the following drainage basins: CR-46, discharging to the Calaveras River; DC-65, discharging to Duck Creek; and MS-14, discharging to Mosher Slough. The locations of these basins are shown in Attachment A. Samples shall also be taken at a representative outfall for the urban area

[1] NPDES Storm Water Sampling Guidance Document, U.S. EPA 833-B-92-001, July 1992

surrounding Smith Canal, and near the receiving water sampling location designated as SC-1R in Attachment A.

The proposed locations of urban discharge monitoring stations shall be presented in the revised SWMP. If additional monitoring stations are needed, they shall be established under the direction of Regional Water Board staff. A description of any additional stations shall be attached to this MRP. Urban discharge monitoring shall be consistent with Table 1. Each year[2], samples shall be flow weighted and collected **during two storm events[3]** and **two dry weather monitoring events[4]**.

The Permittees shall target for monitoring the first storm event of the year[2] preceded by at least 30 days of dry weather.[5] The second storm event to be monitored shall be preceded by at least three dry weather days. The two monitoring events shall be separated by at least 20 days.

D. **Receiving Water Monitoring**

All receiving water samples shall be grab samples, collected at mid-depth, in mid-stream of the receiving water, and in a manner that measures the water quality impacts of corresponding urban discharge outfalls. Receiving water sampling may be postponed if hazardous weather and/or river flow conditions prevent safe access to sampling location. Receiving water monitoring shall be taken after discharges from MS-14, SC-1, CR-46, and DC-65 have occurred. Attachment A shows the approximate locations of the receiving water sampling stations. Each year, samples shall be collected **during two storm events** and **two monitoring events during the dry season**. Receiving water monitoring shall include at least the following:

Station	Description/Location/Type of Basin
MS-14R	Mosher Slough in the vicinity of Mariners Drive; Residential
MS-14RU	Upstream of Stockton Urban Area Boundary

[2] This refers to the permit year of July 1 to June 30.
[3] A qualifying storm event occurs when there is sufficient rainfall within a 24-hour period to monitor at least one drainage basin and one corresponding receiving water station; the Permittees shall target storm events with a predicted rainfall of at least 0.25 inches at a seventy percent probability of rainfall 72 hours prior to the event.
[4] Dry weather monitoring events shall be preceded by at least seven days of no rainfall; the two dry weather monitoring events shall be separated by at least 14 days of no rainfall.
[5] A day with a storm event too small to generate runoff (typically 0.1 inches or less) shall be considered a dry weather day.

SC-1R	Smith Canal in the vicinity of the Pershing Avenue over-crossing; Mixed Land Uses
CR-46R	Calaveras River in the vicinity of the El Dorado Street overpass; Commercial
CR-46RU	Upstream of Stockton Urban Area Boundary
DC-65R	Duck Creek in the vicinity of the El Dorado Street over crossing; Industrial
DC-65RU	Upstream of Stockton Urban Area Boundary

The upstream receiving locations shall be representative of what is entering each waterbody from upstream of the Stockton Urban Area Boundary as shown on **Attachment A**.

E. **Water Column Toxicity Monitoring**

The Permittees shall conduct short-term chronic toxicity testing at each receiving water monitoring station on an **annual** basis. Annual data collection allows for characterizing a range of hydrologic conditions that vary from year to year and to more fully characterize potential sources of contaminants and toxicity that may be contributing to the decline of fish populations in the Delta. Short-term chronic toxicity testing shall include (1) the analysis of samples from **two storm events, and two dry weather monitoring events** from each receiving water monitoring station; and (2) analysis of at least the following two freshwater test species for each storm event: Fathead minnow [*Pimephales promelas* (larval survival and growth test) and water flea [*Ceriodaphnia dubia* (survival and reproduction test)]. The testing shall be conducted in accordance with U.S. EPA's method (U.S. EPA 2002, 4th Edition). A minimum sample volume of 5 gallons for each test species shall be provided with a sample storage (holding time) not to exceed 36 hours.

If 100% mortality to *Pimephales promelas* or *Ceriodaphnia dubia* is detected within 24 hours of test initiation, then a dilution series shall be initiated (0.5x steps) ranging from the undiluted sample (or the highest concentration that can be tested within the limitations of the test methods or sample type) to less than or equal to 6.25 percent of the sample. Further, if statistically significant toxicity is detected and a greater than or equal to 50% increase in *Pimephales promelas* or *Ceriodaphnia dubia* mortality, or reduction in *Ceriodaphnia dubia* reproduction compared to the laboratory control is observed, then TIEs shall be conducted on the initial sample that caused toxicity.

1. Toxicity Identification Evaluations (TIE)

   The Permittees shall begin a Phase I TIE immediately on all samples that cause statistically significant toxicity and greater than or equal to 50% increase in *Pimephales promelas* or *Ceriodaphnia dubia* mortality or decrease in *Ceriodaphnia dubia* reproduction compared to the laboratory control. If mortality of both test species exceeds the 50% trigger, then TIEs shall be conducted using both species. TIEs are required until the cause of toxicity is determined. The Permittees shall indicate the person who will conduct the TIE (in-house expert or outside contractor), which shall be identified in the SWMP and Annual Reports.

2. Toxicity Reduction Evaluations (TRE)

   a. BMPs shall be identified and implemented whenever a toxicant is successfully identified through the TIE process. The TRE shall include all reasonable steps to identify the source(s) of toxicity and discuss appropriate BMPs to eliminate the causes of toxicity. Once the source of toxicity and appropriate BMPs are identified, the Permittees shall submit the TRE Corrective Action Plan as part of the Annual Report to the Executive Officer for approval. At a minimum, the TRE shall include a discussion of the following items:

      i. A description of the investigation and evaluation techniques that would be used to identify potential causes and sources of toxicity;

      ii. The potential sources of pollutant(s) causing toxicity;

      iii. A list of Permittees having jurisdiction over sources of pollutant(s) causing toxicity;

      iv. Recommended BMPs to reduce the pollutant(s) causing toxicity;

      v. Proposed changes to the SWMP to reduce the pollutant(s) causing toxicity; and

      vi. Suggested follow-up monitoring to demonstrate that toxicity has been removed.

   b. If TRE implementation for a specific pollutant coincides with Total Maximum Daily Load (TMDL) implementation for that pollutant, the efforts may be coordinated.

c. Upon approval by the Executive Officer, the Permittees(s) having jurisdiction over sources causing or contributing to toxicity shall implement the recommended BMPs and take all reasonable steps necessary to eliminate toxicity.

d. The Permittees shall develop a maximum of two TREs per year. If applicable, the Permittees may use the same TRE for the same toxic pollutant or pollutant class in different watersheds or basins. The TRE process shall be coordinated with TMDL development and implementation to avoid overlap.

The Permittees have included a monitoring plan, which shall include a sampling and analysis plan, all data (electronic format), assessment of the data, conclusions, proposed BMPs to be implemented, program effectiveness, and an implementation schedule in the SWMP. Subsequent information shall be included in the Annual Reports as required in this Order.

F. **Dry Weather Field Screening**

The permittees shall conduct dry weather monitoring that screens 20% of the Permittees' outfalls a year so that during the Permit term all outfalls will be screened at least once. Sites with sufficient flow will be analyzed in the field for temperature, pH, phenols, chlorine, total copper, specific conductance (EC), methyl blue activated substances (MBAs, which are detergents/ surfactants), and turbidity. The Permittees shall provide follow-up investigation to verify the presence of an illicit connection if the following action levels are exceeded:

Table A. Dry Weather Field Screening Action Levels

Constituent	**Units**	**Action Levels**
Phenols	mg/L	>0.017
Total copper	mg/L	>2
Electrical Conductivity	µmhos/cm	>700
Methyl Blue Activated Substances (MBAS)	mg/L	>0.275
Turbidity	NTU	>55

Sampling Schedule

The Baseline Monitoring Program shall implement the monitoring schedule shown in Table B:

Table B. 2015-2017 Schedule for Baseline Monitoring Program

	2015/2016				2016/2017			
Baseline Monitoring Program Element	**E[a]**	**L[b]**	**D[c]**	**D[c]**	**E**	**L**	**D**	**D**
Urban Discharge								
Water Quality Parameters (Table 1)	X	X	X	X	X	X	X	X
Receiving Water								
Water Quality Parameters (Table 1)	X	X	X	X	X	X	X	X
Water Column Toxicity	X	X	X	X	X	X	X	X
Dry Weather Field Screening [d]			X	X			X	X

Notes:
a. Early season storm event
b. Mid-to-late season storm event
c. Dry weather event
d. Approximately 20% of the City outfalls are monitored during dry weather each Permit year. If the outfalls are flowing, they are monitored twice within a 24-hour period.

G. Sediment Toxicity Monitoring

The Permittees shall conduct short-term sediment toxicity testing, which shall include (1) the analysis of sediment samples from **one post first flush[6] storm event, and one dry weather monitoring event;** and (2) analysis of at least the following freshwater sediment test species: Amphipod [*Hyalella azteca* (10-day survival and growth test)]; and (3) analysis of sediment organic carbon and grain size. The testing shall be conducted in accordance with U.S. EPA's method (U.S. EPA 2000[7]). Sample sites for sediment toxicity testing shall be conducted on urban receiving water sites.

If toxicity is detected in a sediment sample, follow up actions shall be implemented and shall include sediment chemistry for chlorpyrifos and pyrethroids – including bifenthrin, cyfluthrin, deltamethrin, esfenvalerate, lambda cyhalothrin, permethrin, tralomethrin. Further, if toxicity is detected at a given monitoring station, the Permittees will continue conducting toxicity

[6] Post first flush timeframe is within two weeks of the qualifying storm event.
[7] U.S. EPA. 2000. Methods for measuring the toxicity and bioaccumulation of sediment-associated contaminants with freshwater invertebrates. EPA 600/R-99/064. Office of Research and Development. Washington, DC.

testing and sediment chemistry for chlorpyrifos and pyrethroids until the nature and cause(s) of the toxicity are defined.

H. Bioassessment Monitoring

The purpose of this requirement is to fully evaluate biological data collected under the previous MRP in order to assess the biological integrity of receiving waters, detect biological responses to pollution, and identify probable causes of impairment not detected by chemical and physical water quality analysis.

Further bioassessment monitoring activities will not be required under this permit until the evaluation with recommendations is complete, and the monitoring effort is adapted in consultation with SWAMP's bioassessment workgroup.

1. The following results and information were included in the 2007-08 Annual Report:

    a. All physical, chemical and biological data collected in the assessment;
    b. Photographs and GPS locations of all stations;
    c. Documentation of quality assurance and control procedures;
    d. Analysis that shall include calculation of the metrics used in the CSBP;
    e. Comparison of mean biological and habitat assessment metric values between stations and year-to-year trends;
    f. Electronic data formatted to the DFG Aquatic Bioassessment Laboratory for inclusion in the Statewide Access Bioassessment Database; and
    g. Copies of all QA/QC documents from laboratories.

2. The Permittees shall participate in and coordinate with the SWAMP to identify the most appropriate locations for future bioassessment stations within the Stockton Urbanized Area and determine coordinated needs for the initial development of an Index of Biological Integrity for the region.

I. Water Quality-Based Programs

Monitoring and assessment for the water quality based programs (i.e., pesticides, dissolved oxygen, pathogens, and mercury/methylmercury) for the Stockton Urbanized Area was addressed in a separate Order. City or County generated data obtained by other programs shall continue to be incorporated, evaluated, and included in each annual report.

IV. STANDARD MONITORING PROVISIONS

All monitoring activities shall meet the following requirements:

A. Monitoring and Records [40 CFR 122.41(j)(1)]

Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity.

B. Monitoring and Records [40 CFR 122.41(j)(2)] [California Water Code §13383(a)]

The Permittees shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, copies of all reports required by this Order, and records of all data used to complete the Report of Waste Discharge and application for this Order, for a period of at least five (5) years from the date of the sample, measurement, report, or application. This period may be extended by request of the Regional Water Board or U.S. EPA at any time and shall be extended during the course of any unresolved litigation regarding this discharge.

C. Monitoring and Records [40 CFR 122.41(j)(3)]. Records of monitoring information shall include:

1. Date, location, and time of sampling or measurements;
2. Individual(s) who performed the sampling or measurements;
3. Date analyses were performed;
4. Individual(s) who performed the analyses;
5. The analytical techniques or methods used; and
6. Results of such analyses.

D. Monitoring and Records [40 CFR 122.41(j)(4)]

All sampling, sample preservation, and analyses must be conducted according to test procedures approved under 40 CFR Part 136, unless other test procedures have been specified in this Order.

E. Monitoring and Records [40 CFR 122.41(j)(5)]

The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than $10,000, or by imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first

conviction of such person under this paragraph, punishment is a fine of not more than $20,000 per day of violation, or by both.

F. All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by an appropriate governmental regulatory agency.

G. For priority toxic pollutants that are identified in the CTR (65 Fed. Reg. 31682), the MLs published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California 2005 (SIP) shall be used for all analyses, unless otherwise specified. Appendix 4 of the SIP is included as Table 1. For pollutants not contained in Appendix 4 of the SIP, the test method and method detection limit (MDL) listed in Table 1 shall be used for all analyses, and the ML for these parameters shall be lower than or equal to the lowest applicable water quality criteria from the Basin Plan and/or the SIP.

H. The Monitoring Report shall specify the analytical method used, the MDL and the ML for each pollutant. For the purpose of reporting compliance with numerical limitations, performance goals, and receiving water limitations, analytical data shall be reported with one of the following methods, as appropriate:

1. An actual numerical value for sample results greater than or equal to the ML;

2. "Not-detected (ND)" for sample results less than the laboratory's MDL with the MDL indicated for the analytical method used; or

3. "Detected, but Not Quantified (DNQ)" if results are greater than or equal to the laboratory's MDL but less than the ML. The estimated chemical concentration of the sample shall also be reported. This is the concentration that results from the confirmed detection of the substance by the analytical method below the ML value.

I. For priority toxic pollutants, if the Permittees can demonstrate that a particular ML is not attainable, in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure (assuming that all the method specified sample weights, volumes, and processing steps have been followed) may be used instead of the ML listed in Appendix 4 of the SIP. The Permittees must submit documentation from the laboratory to the Regional Water Board Executive Officer for approval prior to raising the ML for any constituent.

J. Monitoring Reports [40 CFR 122.41(l)(4)(ii)]

If the Permittees monitor any pollutant more frequently than required by the permit using test procedures approved under 40 CFR part 136, unless otherwise specified in the Order, the results of this monitoring shall be included in the calculation and reporting of the data submitted in the Annual Report.

K. Monitoring Reports [40 CFR 122.41(l)(4)(iii)]

Calculations for all limitations, which require averaging of measurements, shall utilize an arithmetic mean unless otherwise specified in this Order.

L. If no flow occurred during the reporting period, the Monitoring Report shall so state.

M. The Executive Officer or the Regional Water Board, consistent with 40 CFR 122.41, may approve changes to the Monitoring Program, after providing the opportunity for public comment, either:

1. By petition of the Permittees or by petition of interested parties after the submittal of the Annual Report. Such petition shall be filed not later than 60 days after the Annual Report submittal date, or

2. As deemed necessary by the Executive Officer following notice to the Permittees.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify 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, **17 April 2015.**

Original Signed by Adam Laputz for

_____

PAMELA C. CREEDON, Executive Officer

5/5/2015

Date

Attachment: Table 1 – List of Constituents and their Analytical Limits

TABLE 1
LIST OF CONSTITUENTS AND THEIR ANALYTICAL LIMITS
ORDER R5-2015-0024
CITY OF STOCKTON AND COUNTY OF SAN JOAQUIN
MUNICIPAL SEPARATE STORM SEWER SYSTEM

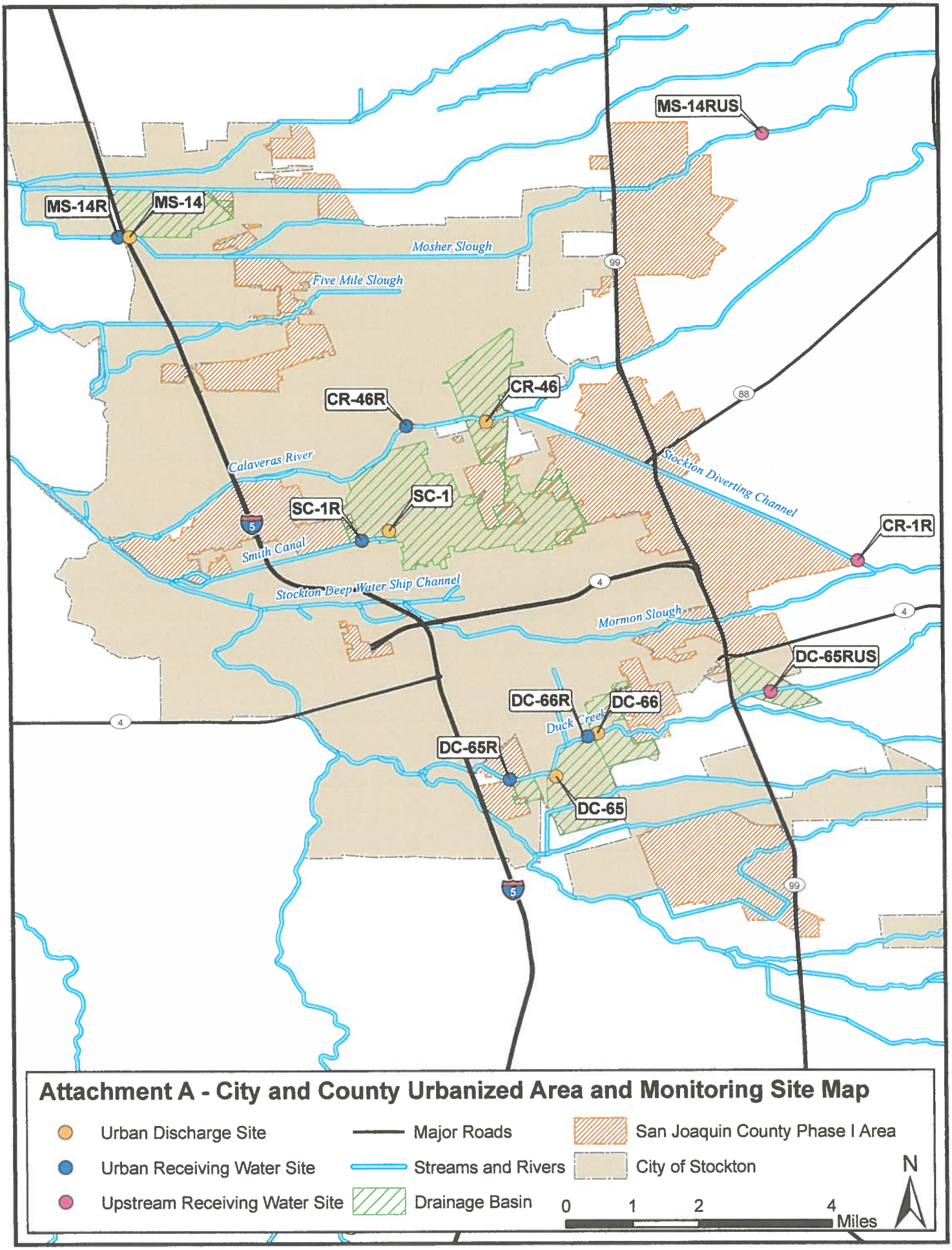
CONSTITUENTS	MLs[1]
CONVENTIONAL POLLUTANTS	**mg/L**
Oil and Grease	5
pH	0 - 14
Dissolved Oxygen	Sensitivity to 5 mg/L
FIELD MEASUREMENTS	
Date	mm/dd/yyyy
Sample Time	hr:min (regular time)
Weather	degrees F
Water Temperature	degrees C
BACTERIA	
Fecal coliform	<20mpn/100ml
E. coli (fresh waters)	<20mpn/100ml
GENERAL	**mg/L**
Turbidity	0.1 NTU
Total Suspended Solids	2
Total Dissolved Solids	2
Total Organic Carbon	1
Biochemical Oxygen Demand	2
Chemical Oxygen Demand	20-900
Total Kjeldahl Nitrogen	0.1
Alkalinity	2
Total Ammonia-Nitrogen	0.1
Nitrate-Nitrite	0.1
Total Phosphorus	0.05
Specific Conductance	1umho/cm
Total Hardness	2
Methylmercury	0.05 ng/L

[1] For Priority Pollutants, the MLs represent the lowest value listed in Appendix 4 of SIP. MDLs must be lower than or equal to the ML value. If a particular ML is not attainable in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure may be used instead.

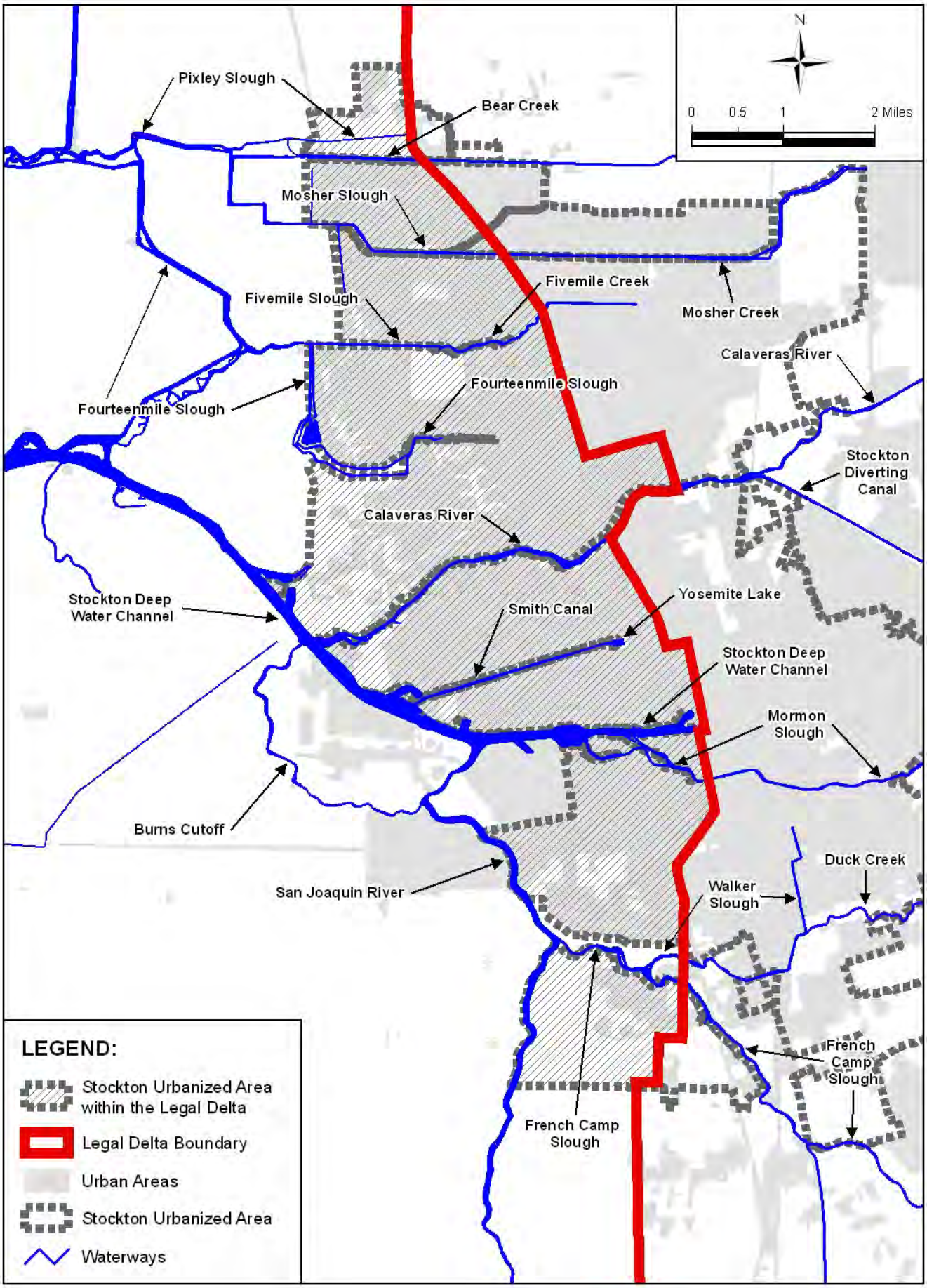
Pyrethroids	5 ng/L
METALS	**µg/L**
Aluminum, Dissolved	50
Aluminum, Total	50
Copper, Dissolved	0.5
Copper, Total	0.5
Iron, Total	100
Lead, Dissolved	0.5
Lead, Total	0.5
Mercury	0.5 ng/L
Zinc	1
ORGANOPHOSPHATE PESTICIDES	**µg/L**
Chlorpyrifos	0.01
Diazinon	0.05
PYRETHROID PESTICIDES IN SEDIMENT[2]	**Target Reporting Limit (ng/g)[3]**
Bifenthrin	1
Cyfluthrin-1	3
Cyfluthrin-2	3
Cyfluthrin-3	3
Cyfluthrin-4	3
Cypermethrin-1	3
Cypermethrin-2	3
Cypermethrin-3	3
Cypermethrin-4	3
Deltamethrin	2
Esfenvalerate/Fenvalerate-1	2
Esfenvalerate/Fenvalerate-2	1
Lambda-cyhalothrin-1	1
Lambda-cyhalothrin-2	4
Permethrin-1	4
Permethrin-2	1

[2] Pyrethroid isomers are typically reported as totals instead of the individual isomers except where individual isomers may be obtained.
[3] US EPA 1660.

ATTACHMENT A



ATTACHMENT B



DEFINITIONS

ORDER R5-2015-0024
CITY OF STOCKTON AND COUNTY OF SAN JOAQUIN
MUNICIPAL SEPARATE STORM SEWER SYSTEM
SAN JOAQUIN COUNTY

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

Anti-degradation Policy means the *Statement of Policy with Respect to Maintaining High Quality Water in California* (State Board Resolution No. 68-16), which protects surface and ground waters from degradation. In particular, this policy protects water bodies where existing quality is higher than that necessary for the protection of beneficial uses including the protection of fish and wildlife propagation and recreation on and in the water.

Applicable Standards and Limitations means all state, interstate, and federal standards and limitations to which a discharge or a related activity is subject under the Clean Water Act (CWA), including effluent limitations, water quality standards, standards of performance, toxic effluent standards or prohibitions, best management practices, and pretreatment standards under CWA Sections 301, 302, 303, 304, 306, 307, 308, 403 and 404.

Authorized Discharge means any discharge that is authorized pursuant to a National Pollutant Discharge Elimination System (NPDES) permit or meets the conditions set forth in this Order.

Automotive Service Facilities means a facility that is categorized in any one of the following Standard Industrial Classification (SIC) codes: 5013, 5014, 5541, 5511, 7532-7534, or 7536-7539.

Basin Plan means the *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins*. 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.

Beneficial Uses means the existing or potential uses of receiving waters in the permit area as designated by the Regional Board in the Basin Plan.

Best Management Practices (BMPs) means methods, measures, or practices designed and selected to reduce or eliminate the discharge of pollutants to surface waters from point and nonpoint source discharges including storm water. BMPs include structural and nonstructural controls, and operation and maintenance procedures, which can be applied before, during, and/or after pollution producing activities.

Best Available Technology Economically Achievable (BAT) and Best Conventional Pollutant Control Technologies (BCT) or Best Practicable Treatment or Control (BPTC): is a requirement of State Water Resources Control Board Resolution 68-16 - “Statement of Policy with Respect to Maintaining High Quality of Waters in California” (referred to as the

"Antidegradation Policy"). BPTC is the treatment or control of a 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." Pollution is defined in CWC Section 13050(l). In general, an exceedance of a water quality objective in the Basin Plan constitutes "pollution".

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

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

Construction means clearing, grading, excavating, etc. that results in soil disturbance. Construction includes structure teardown. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility; emergency construction activities required to immediately protect public health and safety; interior remodeling with no outside exposure of construction material or construction waste to storm water; mechanical permit work; or sign permit work.

Control means to minimize, reduce, eliminate, or prohibit by technological, legal, contractual or other means, the discharge of pollutants from an activity or activities.

Dechlorinated/Debrominated Swimming Pool Discharge means swimming pool discharges which have no measurable chlorine or bromine and do not contain any detergents, wastes, or additional chemicals not typically found in swimming pool water. The term does not include swimming pool filter backwash.

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

Director means the Director of a municipality and Person(s) designated by and under the Director's instruction and supervision.

Discharge means when used without qualification the discharge of a pollutant.

Discharging Directly means outflow from a drainage conveyance system that is composed entirely or predominantly of flows from the subject, property, development, subdivision, or industrial facility, and not commingled with the flows from adjacent lands.

Discharge of a Pollutant means any addition of any pollutant or combination of pollutants to waters of the United States from any point source or, any addition of any pollutant or combination of pollutants to the waters of the contiguous zone or the ocean from any point source other than a vessel or other floating craft which is being used as a means of transportation. The term discharge includes additions of pollutants into waters of the United States from: surface runoff which is collected or channeled by man; discharges through pipes, sewers, or other conveyances owned by a State, municipality, or other person which do not lead to a treatment works; and discharges through pipes, sewers, or other conveyances, leading into privately owned treatment works.

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

General Construction Activities Storm Water Permit (GCASP) means the general NPDES permit adopted by the State Board which authorizes the discharge of storm water from construction activities under certain conditions.

General Industrial Activities Storm Water Permit (GIASP) means the general NPDES permit adopted by the State Board which authorizes the discharge of storm water from certain industrial activities under certain conditions.

Hydromodification – means the change in the natural watershed hydrologic processes and runoff characteristics (i.e., interception, infiltration, overland flow, interflow and groundwater flow) caused by urbanization or other land use changes that result in increased stream flows and sediment transport. In addition, alteration of stream and river channels, installation of dams and water impoundments, and excessive stream bank and shoreline erosion are also considered hydromodification, due to their disruption of natural watershed hydrologic processes.

Illicit Connection means any man-made conveyance that is connected to the storm drain system without a permit, excluding roof drains and other similar type connections. Examples include channels, pipelines, conduits, inlets, or outlets that are connected directly to the storm drain system.

Illicit Discharge means any discharge to the storm drain system that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term “illicit discharge” includes all non storm-water discharges except discharges pursuant to an NPDES permit, discharges that are identified in **Discharge Prohibitions** of this Order, and discharges authorized by the Regional Board.

Illicit Disposal means any disposal, either intentionally or unintentionally, of materials or wastes that can pollute storm water.

Infiltration means the downward entry of water into the surface of the soil.

Inspection means entry and the conduct of an on-site review of a facility and its operations, at reasonable times, to determine compliance with specific municipal or other legal requirements. The steps involved in performing an inspection, include, but are not limited to:

a. Pre-inspection documentation research.;
b. Request for entry;
c. Interview of facility personnel;
d. Facility walk-through.
e. Visual observation of the condition of facility premises;
f. Examination and copying of records as required;
g. Sample collection if necessary or required;
h. Exit conference to discuss preliminary evaluation; and,
i. Report preparation, and if appropriate, recommendations for coming into compliance.

In the case of restaurants, a Permittee may conduct an inspection from the curbside, provided that such curbside inspection provides the Permittee with adequate information to determine an operator's compliance with BMPs that must be implemented per requirements of this Order and the SWMP.

Medium Municipal Separate Storm Sewer System (MS4) means all MS4s that serve a population less than 250,000 (1990 Census) as defined in 40 CFR 122.26 (b)(4).

Local SWPPP means the Storm Water Pollution Prevention Plan required by the local agency for a project that disturbs one or more acres of land.

Low Impact Development (LID) – A storm water management and land development strategy that emphasizes conservation and the use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely reflect pre-development hydrologic functions.

Maximum Extent Practicable (MEP) – The 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; typically by treatment or by a combination of source control and treatment control BMPs. MEP generally emphasizes pollution prevention and source control BMPs primarily (as the first line of defense) in combination with treatment methods serving as a backup (additional line of defense). MEP considers economics and is generally, but not necessarily, less stringent than BAT. A definition for MEP is not provided either in the statute or in the regulations. Instead the definition of MEP is dynamic and will be defined by the following process over time:

Municipalities propose their definition of MEP by way of their storm water management programs (SWMP). The Permittees' total collective and individual activities conducted pursuant to the storm water management programs (SWMP) becomes their proposal for MEP as it applies both to their overall effort, as well as to specific activities (e.g., MEP for street sweeping, or MEP for MS4 maintenance).

In the absence of a proposal acceptable to the Regional Board, the Regional Board defines MEP. In a memo dated February 11, 1993, entitled *"Definition of Maximum Extent Practicable,"* Elizabeth Jennings, Senior Staff Counsel, SWRCB addressed the achievement of the MEP standard as follows:

> "*To achieve the MEP standard, municipalities must employ whatever Best Management Practices (BMPs) are technically feasible (i.e., are likely to be effective) and are not cost prohibitive. The major emphasis is on technical feasibility. Reducing pollutants to the MEP means choosing effective BMPs, and rejecting applicable BMPs only where other effective BMPs will serve the same purpose, or the BMPs would not be technically feasible, or the cost would be prohibitive. In selecting BMPs to achieve the MEP standard, the following factors may be useful to consider:*
>
> *a. Effectiveness: Will the BMPs address a pollutant (or pollutant source) of concern?*
>
> *b. Regulatory Compliance: Is the BMP in compliance with storm water regulations as well as other environmental regulations?*
>
> *c. Public Acceptance: Does the BMP have public support?*
>
> *d. Cost: Will the cost of implementing the BMP have a reasonable relationship to the pollution control benefits to be achieved?*
>
> *e. Technical Feasibility: Is the BMP technically feasible considering soils, geography, water resources, etc?*
>
> *The final determination regarding whether a municipality has reduced pollutants to the maximum extent practicable can only be made by the Regional or State Water Boards, and not by the municipal discharger. If a municipality reviews a lengthy menu of BMPs and chooses to select only a few of the least expensive, it is likely that MEP has not been met. On the other hand, if a municipal discharger employs all applicable BMPs except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit derived, it would have met the standard. Where a choice may be made between two BMPs that should provide generally comparable effectiveness, the discharger may choose the least expensive alternative and exclude the more expensive BMP. However, it would not be acceptable either to reject all BMPs that would address a pollutant source, or to pick a BMP base solely on cost, which would be clearly less effective. In selecting BMPs the municipality must make a serious attempt to comply and practical solutions may not be lightly rejected. In any case, the*

burden would be on the municipal discharger to show compliance with its permit. After selecting a menu of BMPs, it is the responsibility of the discharger to ensure that all BMPs are implemented."

Method Detection Limit (MDL) means the minimum concentration of a substance that can be measured and reported with 99 percent confidence that the analyte concentration is greater than zero, as defined in 40 CFR 136, Appendix B.

Minimum Level (ML) means the concentration at which the entire analytical system must give a recognizable signal and acceptable calibration point. The ML is the concentration in a sample that is equivalent to the concentration of the lowest calibration standard analyzed by a specific analytical procedure, assuming that all the method specified sample weights, volumes, and processing steps have been followed.

Municipal Separate Storm Sewer System (MS4) means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, alleys, catch basins, curbs, gutters, ditches, manmade channels, or storm drains) owned by a State, city, county, town or other public body, that is designed or used for collecting or conveying storm water, which is not a combined sewer, and which is not part of a publicly owned treatment works, and which discharges to Waters of the United States.

National Pollutant Discharge Elimination System (NPDES) means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under CWA §307, 402, 318, and 405.

Natural Drainage Systems means unlined or unimproved (not engineered) creeks, streams, rivers or similar waterways.

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

Non-Storm Water Discharge means any discharge to a storm drain that is not composed entirely of storm water.

Nuisance means anything that meets all of the following requirements: (1) is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; (2) affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal.; (3) occurs during, or as a result of, the treatment or disposal of wastes.

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

Performance Standard means a narrative or measurable number specifying the minimum acceptable outcome for a pollution control practice.

Permittees means Co-Permittees and any agency named in this Order as being responsible for permit conditions within its jurisdiction. Permittees to this Order include the City of Stockton and County of San Joaquin.

Planning Priority Projects means those projects that are required to incorporate appropriate storm water mitigation measures into the design plan for their respective project. These types of projects include:

a. Ten or more unit homes including single family homes, multifamily homes, condominiums, and apartments;
b. A 100,000 or more square feet of impervious surface area industrial/ commercial development (1 acre starting March 2003);
c. Automotive service facilities (SIC 5013, 5014, 5541, 7532-7534, and 7536-7539);
d. Retail gasoline outlets;
e. Restaurants (SIC 5812);
f. Parking lots 5,000 square feet or more of surface area or with 25 or more parking spaces;
g. Redevelopment projects in subject categories that meet Redevelopment thresholds;
h. Projects located in or directly adjacent to or discharging directly to an ESA, which meet thresholds; and
i. Those projects that require the implementation of a site-specific plan to mitigate post-development storm water for new development not requiring a SUSMP but which may potentially have adverse impacts on post-development storm water quality, where the following project characteristics exist:

    1) Vehicle or equipment fueling areas;
    2) Vehicle or equipment maintenance areas, including washing and repair;
    3) Commercial or industrial waste handling or storage;
    4) Outdoor handling or storage of hazardous materials;
    5) Outdoor manufacturing areas;
    6) Outdoor food handling or processing;
    7) Outdoor animal care, confinement, or slaughter; or
    8) Outdoor horticulture activities.

Pollutants means those substances defined in CWA §502(6) (33.U.S.C.§1362(6)), and incorporated by reference into California Water Code §13373.

Potable Water Distribution Systems Releases means sources of flows from drinking water storage, supply and distribution systems including flows from system failures, pressure releases, system maintenance, distribution line testing, fire hydrant flow testing; and flushing and dewatering of pipes, reservoirs, vaults, and minor non-invasive well maintenance activities

not involving chemical addition(s). It does not include wastewater discharges from activities that occur at wellheads, such as well construction, well development (i.e., aquifer pumping tests, well purging, etc.), or major well maintenance.

Project means all development, redevelopment, and land disturbing activities. The term is not limited to "Project" as defined under CEQA (Pub. Resources Code §21065).

Rain Event means any rain event greater than 0.1 inch in 24 hours except where specifically stated otherwise.

Receiving Waters means all surface water bodies in the Central Valley Region that are identified in the Basin Plan.

Receiving Water Limitations (RWLs) - Waste discharge requirements issued by the Regional Board typically include both: (1) “Effluent Limitations” (or “Discharge Limitations”) that specify the technology-based or water-quality-based effluent limitations; and (2) “Receiving Water Limitations” that specify the water quality objectives in the Basin Plan as well as any other limitations necessary to attain those objectives. In summary, the “Receiving Water Limitations” provision is the provision used to implement the requirement of CWA section 301(b)(1)(C) that NPDES permits must include any more stringent limitations necessary to meet water quality standards.

Redevelopment means land-disturbing activity that results in the creation, addition, or replacement of 5,000 square feet or more of impervious surface area on an already developed site. Redevelopment includes, but is not limited to: the expansion of a building footprint; addition or replacement of a structure; replacement of impervious surface area that is not part of a routine maintenance activity; and land disturbing activities related to structural or impervious surfaces. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety.

Regional Administrator means the Regional Administrator of the Regional Office of the U.S. Environmental Protection Agency (EPA) or the authorized representative of the Regional Administrator.

Restaurant means a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC Code 5812).

Retail Gasoline Outlet means any facility engaged in selling gasoline and lubricating oils.

Runoff means any runoff including storm water and dry weather flows from a drainage area that reaches a receiving water body or subsurface. During dry weather it is typically comprised of base flow either contaminated with pollutants or uncontaminated, and nuisance flows.

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

Sidewalk Rinsing means pressure washing of paved pedestrian walkways with average water usage of 0.006 gallon per square foot, with no cleaning agents, and properly disposing of all debris collected.

Significant Natural Area (SNA) means an area defined by the California Department of Fish and Wildlife (DFW), Significant Natural Areas Program, as an area that contains an important example of California's biological diversity. The most current SNA maps, reports, and descriptions can be downloaded from the DFW website at https//www.wildlife.ca.gov/. These areas are identified using the following biological criteria only, irrespective of any administrative or jurisdictional considerations:

a. Areas supporting extremely rare species or habitats;
b. Areas supporting associations or concentrations of rare species or habitats; and
c. Areas exhibiting the best examples of rare species and habitats in the state.

Site means the land or water area where any facility or activity is physically located or conducted, including adjacent land used in connection with the facility or activity.

Source Control BMP means any schedules of activities, prohibitions of practices, maintenance procedures, managerial practices or operational practices that aim to prevent storm water pollution by reducing the potential for contamination at the source of pollution.

SWMP means the City of Stockton and County of San Joaquin Stormwater Management Program.

State Storm Water Pollution Prevention Plan (State SWPPP) means a plan, as required by a State General Permit, identifying potential pollutant sources and describing the design, placement and implementation of BMPs, to effectively prevent non-stormwater Discharges and reduce Pollutants in Stormwater Discharges during activities covered by the General Permit.

Storm Water means storm water runoff, snow melt runoff, and surface runoff and drainage.

Storm Water Discharge Associated with Industrial Activity means industrial discharge as defined in 40 CFR 122.26(b)(14)

Storm Water Management Program means the City of Stockton and County of San Joaquin program, which includes all elements and descriptions, collectively developed by the

Permittees in accordance with provisions of the NPDES Permit, to comply with applicable federal and state law.

Structural BMP means any structural facility designed and constructed to mitigate the adverse impacts of storm water and urban runoff pollution (e.g. canopy, structural enclosure). The category may include both Treatment Control BMPs and Source Control BMPs.

SUSMP or Development Standards means Standard Urban Stormwater Mitigation Plans. They are standards which the Permittees must develop and implement for new development and significant redevelopment projects to control the discharge of storm water pollutants in post-construction storm water.

Total Maximum Daily Load (TMDL) means the sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background.

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

Toxicity Reduction Evaluation (TRE) means a study conducted in a step-wise process to identify the causative agents of effluent or ambient toxicity, isolate the sources of toxicity, evaluate the effectiveness of toxicity control options, and then confirm the reduction in toxicity.

Treatment means the application of engineered systems that use physical, chemical, or biological processes to remove pollutants. Such processes include, but are not limited to, filtration, gravity settling, media absorption, biodegradation, biological uptake, chemical oxidation and UV radiation.

Treatment Control BMP means any engineered system designed to remove pollutants by simple gravity settling of particulate pollutants, filtration, biological uptake, media absorption or any other physical, biological, or chemical process.

U.S. EPA Phase I Facilities means facilities in specified industrial categories that are required to obtain an NPDES permit for storm water discharges, as required by 40 CFR 122.26(c). These categories include facilities subject to storm water effluent limitation guidelines, new source performance standards, or toxic pollutant effluent standards (40 CFR N); manufacturing facilities; oil and gas/mining facilities; hazardous waste treatment, storage, or disposal facilities; landfills, land application sites, and open dumps; recycling facilities; steam electric power generating facilities; transportation facilities sewage of wastewater treatment works; and light manufacturing facilities.

Vehicle Maintenance/Material Storage Facilities/Corporation Yards means any Permittee owned or operated facility or portion thereof that conducts industrial activity, operates equipment, handles materials, and provides services similar to Federal Phase I facilities; performs fleet vehicle service/maintenance on ten or more vehicles per day including repair,

maintenance, washing, and fueling; performs maintenance and/or repair of heavy industrial machinery/equipment; and stores chemicals, raw materials, or waste materials in quantities that require a hazardous materials business plan or a Spill Prevention, Control, and Counter-measures (SPCC) plan.

Water Quality Standards and Water Quality Objectives means water quality criteria contained in the Basin Plan, the National Toxics Rule, the California Toxics Rule, and other state or federally approved surface water quality plans. Such plans are used by the Regional Board to regulate all discharges, including storm water discharges.

Waters of the State means any surface water or groundwater, including saline waters, within boundaries of the state.

Waters of the United States means:

a. All waters that are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;

b. All interstate waters, including interstate wetlands;

c. All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation, or destruction of which would affect or could affect interstate or foreign commerce including any such waters:

    1. Which are or could be used by interstate or foreign travelers for recreational or other purposes;
    2. From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or
    3. Which are used or could be used for industrial purposes by industries in interstate commerce;

d. All impoundments of waters otherwise defined as waters of the United States under this definition;

e. Tributaries of waters identified in paragraphs (a) through (d) of this definition;

f. The territorial sea; and
g. Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraph (a) through (f) of this definition.

Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.22(m), which also meet the criteria of this definition) are not waters of the United States. This exclusion applies

only to man-made bodies of water, which neither were originally created in waters of the United States (such as disposal area in wetlands) nor resulted from the impoundment of waters of the United States. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the CWA, the final authority regarding CWA jurisdiction remains with U.S. EPA.

Wet Season means the calendar period beginning October 1 through April 15.

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

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

February 2004

A. GENERAL PROVISIONS

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

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

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

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

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

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

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

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

5. If the Discharger's wastewater treatment plant is publicly owned or subject to regulation by the California Public Utilities Commission, it shall be supervised and operated by persons possessing certificates of appropriate grade according to Title 23, California Code of Regulations (CCR), Division 3, Chapter 14.

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

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

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

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

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

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

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

The causes for modification include:

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

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

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

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

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

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

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

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

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

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

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

    b. controls any pollutant limited in the Order.

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

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

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

    a. (1) by-pass was unavoidable to prevent loss of life, personal injury, or severe property damage; (severe property damage means substantial physical damage to property, damage to the treatment facilities that causes them to become inoperable, or substantial and permanent loss of natural resources that can reasonably be expected to occur in the absence of a by-pass; severe property damage does not mean economic loss caused by delays in production);

    and

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

    or

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

    and

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

    and

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

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

14. Upset means an exceptional incident in which there is unintentional and temporary noncompliance with effluent limitations because of factors beyond the reasonable control of the Discharger. An upset does not include noncompliance to the extent caused by operational error, improperly designed treatment facilities, inadequate treatment facilities, lack of preventive maintenance, failure to

implement an appropriate pretreatment program, or careless or improper action. A Discharger that wishes to establish the affirmative defense of an upset in an action brought for noncompliance shall demonstrate, through properly signed, contemporaneous operating logs, or other evidence, that:

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

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

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

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

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

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

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

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

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

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

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

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

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

B. GENERAL REPORTING REQUIREMENTS

1. In the event the Discharger does not comply or will be unable to comply for any reason, with any prohibition, daily maximum effluent limitation, or receiving water limitation of this Order, the Discharger shall notify the Board by telephone (916) 464-3291*[Note: Current phone numbers for all three Regional Board offices may be found on the internet at http://www.swrcb.ca.gov/rwqcb5/contact_us.]* within 24 hours of having knowledge of such noncompliance, and shall confirm this notification in writing within five days, unless the Board waives

confirmation. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and, prevent recurrence including, where applicable, a schedule of implementation. Other noncompliance requires written notification as above at the time of the normal monitoring report.

2. Safeguard to electric power failure:

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

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

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

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

   The technical report shall:

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

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

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

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

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

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

the waste.

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

c. Significantly changing the method of treatment.

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

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

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

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

(1) 100 micrograms per liter (µg/l);

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

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

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

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

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

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

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

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

process, or not reported pursuant to an approved land application plan.

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

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

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

10. Any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this Order, including monitoring reports or reports of compliance or noncompliance shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or by imprisonment for not more than two years per violation, or by both.

C. PROVISIONS FOR MONITORING

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

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

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

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

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

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

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

6. All monitoring and analysis instruments and devices used by the Discharger to fulfill the prescribed

monitoring program shall be properly maintained and calibrated as necessary, at least yearly, to ensure their continued accuracy.

7. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than $10,000 per violation, or be imprisoned for not more than two years per violation, or by both.

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

9. The records of monitoring information shall include:

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

D. REPORTING REQUIREMENTS FOR MONITORING

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

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

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

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

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

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

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

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

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

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

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

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

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

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

"I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

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

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

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

E. DEFINITIONS:

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

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

In which N is the number of samples analyzed in a day. Q_i and C_i are the flow rate (mgd) and the

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

2. A discussion of Upset, Interference, or Pass-Through incidents, if any, at the treatment plant which the Discharger knows or suspects were caused by industrial users of the POTW. The discussion shall include the reasons why the incidents occurred, the corrective actions taken and, if known, the name

and address of the industrial user(s) responsible. The discussion shall also include a review of the applicable pollutant limitations to determine whether any additional limitations, or changes to existing requirements, may be necessary to prevent Pass-Through, Interference, or noncompliance with sludge disposal requirements.

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

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

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

   b. consistently achieved compliance;

   c. inconsistently achieved compliance;

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

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

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

   g. compliance status unknown.

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

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

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

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

6. A summary of the compliance and enforcement activities during the past year. The summary shall

include the names and addresses of the industrial users affected by the following actions:

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

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

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

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

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

f. Restriction of flow to the POTW.

g. Disconnection from discharge to the POTW.

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

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

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

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

and the

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

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER R5-2015-0024

NPDES NO. CAS083470

FACT SHEET

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

I. PURPOSE

The Regional Water Quality Control Board, Central Valley Region (Regional Water Board) will be considering adoption of a renewal of the City of Stockton and County of San Joaquin's Municipal Separate Storm Sewer System NPDES Permit. The purpose of this Fact Sheet is to provide the Permittees and interested persons an overview of the proposed permit and to provide the technical basis for the permit requirements. Sections I through IV describe water quality problems from storm water and urban runoff, and permit conditions designed to address these problems. Sections V and VI discuss each major element of the Permittee's Storm Water Management Plans (SWMP), that were adopted by the Regional Water Board on 8 October 2009. The Permittees' SWMPs are considered an integral and enforceable component of the proposed permit.

The proposed permit specifies requirements necessary for the Permittees to reduce the discharge of pollutants in urban runoff to the maximum extent practicable (MEP). However, since compliance with the MEP standard is an iterative process, the Permittees' storm water programs must continually be assessed and modified as urban runoff management knowledge increases, to incorporate improved programs, control measures, best management practices (BMPs), etc. in order to achieve the MEP standard. This continual assessment, revision, and improvement of storm water management program implementation is expected to achieve compliance with water quality standards.

II. THE NEED TO REGULATE STORM WATER DISCHARGES

A. Impacts

The quality of storm water and urban runoff are fundamentally important to the health of the environment and the quality of life in the Central Valley Region. Polluted storm water runoff is a leading cause of water quality impairment in the Stockton-San Joaquin-Delta Area, as well as other potential sources as aerial deposition and runoff from agricultural areas upstream of the Stockton urbanized area. Storm water and urban runoff (during dry and wet weather) are often polluted with pesticides, fertilizers, animal droppings, food wastes, automotive byproducts, and many other toxic substances generated by urban environments. Water that flows over streets, parking lots, construction sites, and industrial, commercial, residential, and municipal areas carries these pollutants through the storm drain systems directly into the receiving waters of the Stockton-San Joaquin-Delta Area. The water quality impacts and increased public health risks from municipal separate storm sewer system (MS4) discharges that affect receiving waters nationwide and in the Central Valley Region are well documented.

The **National Urban Runoff Program** (NURP) Study [U.S. Environmental Protection Agency (U.S. EPA) 1983] showed that MS4 discharges draining from residential, commercial, and light industrial areas contain significant loadings of total suspended solids. Although the NURP Study did not cover industrial sites, the study suggested that runoff from industrial sites may have significantly higher contaminant levels than runoff from other urban land use sites. Several studies tend to support this observation. For example, in Fresno, a NURP project site, industrial areas had the poorest storm water quality of the four land uses evaluated. The study found that pollutant levels from illicit discharges were high enough to significantly degrade receiving water quality, and threaten aquatic life, wildlife, and human health.

The 1992, 1994, and 1996 National Water Quality Inventory Reports to Congress prepared by the U.S. Environmental Protection Agency (U.S. EPA) showed a trend of impairment in the nation's waters from contaminated storm water and urban runoff. The 1998 National Water Quality Inventory [305(b) Report][1] showed that urban runoff/storm water discharges affect 11% of rivers, 12% of lakes, and 28% of estuaries. The report notes that urban runoff and storm water discharges are the leading

[1] *Quality of Our Nation's Waters: Summary of the National Water Quality Inventory 1998 Report to Congress* - U.S. EPA 841-S-00-001 - June 2000; *Water Quality Conditions in the United States: Profile from the 1998 National Water Quality Inventory Report to Congress* - U.S. EPA 841-F-00-006 - June 2000

source of pollution and the main factor in the degradation of surface water quality[2] in California's rivers and streams.

The Natural Resources Defense Council (NRDC) 1999 report, *Stormwater Strategies, Community Responses to Runoff Pollution*[3] identifies two main causes of the storm water pollution problem in urban areas. Both causes are directly related to development in urban and urbanizing areas:

1. Increased volume and velocity of surface runoff. There are three types of human-made impervious covers that increase the volume and velocity of runoff: (i) rooftop, (ii) transportation imperviousness, and (iii) non-porous (impervious) surfaces. As these impervious surfaces increase, infiltration will decrease, forcing more water to run off the surface, picking up speed and pollutants.

2. The concentration of pollutants in the runoff. Certain activities, such as those from industrial sites, are large contributors of pollutant concentrations to the storm water system.

The report also identified several activities causing storm water pollution from urban areas, practices of homeowners, businesses, and government agencies.

B. Benefits of Permit Program Implementation

Implementation of Best Management Practices (BMPs) should reduce pollutant discharges, and improve surface water quality. The expected benefits of implementing the provisions of the City of Stockton and County of San Joaquin MS4 National Pollutant Discharge Elimination System (NPDES) permit include:

1. **Enhanced Aesthetic Value**: Storm water affects the appearance and quality of a water body, and the desirability of working, living, traveling, or owning property near that water body. Reducing storm water pollution will increase benefits as these water bodies recover and become more desirable.

2. **Enhanced Opportunities for Boating**: reducing sediment and other pollutants, and increasing water clarity, which enhances the boating experience for users, offer additional benefits.

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[2] *Quality of Our Nation's Waters: Summary of the National Water Quality Inventory 1998 Report to Congress* – U.S. EPA 841-S-00-001, June 2000.
[3] *Clean Water & Oceans: Water Pollution: In Depth Report Stormwater Strategies, Community Responses to Runoff Pollution*. Natural Resources Defense Council (NRDC), 1999.

3. **Enhanced Commercial Fishing**: Important because commercial fisheries are a significant part of the nation's economy, and 28% of the estuaries in the 305(b) Report were impacted by storm water/urban runoff.

4. **Enhanced Recreational and Subsistence Fishing**: Pollutants in storm water can eliminate or decrease the numbers, or size, of sport fish and shell fish in receiving waters.

5. **Reduced Flood Damage**: Storm water runoff controls may mitigate flood damage by addressing problems due to the diversion of runoff, insufficient storage capacity, and reduced channel capacity from sedimentation.

6. **Reduced Illness from Consuming Contaminated Fish**: Storm water controls may reduce the presence of pathogens in fish caught by recreational anglers.

7. **Reduced Illness from Swimming in Contaminated Water**: Epidemiological studies indicate that swimmers in water contaminated by storm water runoff are more likely to experience illness than those who swim farther away from a storm water outfall.

8. **Enhanced Opportunities for Non-contact Recreation**: Storm water controls reduce turbidity, odors, floating trash, and other pollutants, which then allow waters to be used as focal point for recreation, and enhance the experience of the users.

9. **Drinking Water Benefits**: Pollutants from storm water runoff, such as solids, toxic pollutants, and bacteria may pose additional costs for treatment, or render the water unusable for drinking.

10. **Water Storage Benefits**: Storm water is a major source of impairment for reservoirs. The heavy load of solids deposited by storm water runoff can lead to rapid sedimentation of reservoirs and the loss of needed water storage capacity.[4]

[4] *Report to Congress on Phase II Storm Water Regulations*. U.S. EPA, Office of Water. EPA-833-R-99-001, Oct. 1999.

III. STATUTORY AND REGULATORY HISTORY AND OTHER CONSIDERATIONS OF THE STORM WATER PROGRAM

A. Basis for Permit Conditions

Over the past 35 years, water pollution control efforts have focused primarily on certain process wastewater discharges from facilities such as factories and sewage treatment plants, with less emphasis on diffuse sources. The 1972 amendments to the federal Clean Water Act (CWA) prohibit the discharge of any pollutant to waters from a point source, unless a NPDES permit authorizes the discharge. Because the focus on reducing pollutants was centered on industrial and sewage treatment discharges, the U.S. Congress amended the CWA in 1987, requiring the U.S. EPA to create phased NPDES requirements for storm water discharges.

In response to the 1987 Amendments to the CWA, the U.S. EPA developed Phase I of the NPDES Storm Water Program in 1990. Phase I requires NPDES permits for storm water discharges from: (i) "medium" and "large" MS4s generally serving, or located in incorporated places or counties with, populations of 100,000 or more people; and (ii) eleven categories of industrial activity (including construction activity that disturbs one acre or greater of land).

Phase II, adopted in December 2000 and became effective in March 2003, requires operators of small MS4s and small construction sites (construction activity disturbing greater than or equal to 1 acre of land or less than 1 acre if part of a larger common plan of development or sale) in urban areas to control storm water runoff discharges. Phase II establishes a cost-effective approach for reducing environmental harm caused by storm water discharges from previously unregulated small MS4s.

B. Statutory Basis for Permit Conditions

The intent of the permit conditions is to meet the statutory mandate of the CWA. The conditions established by this permit are based on Section 402(p)(3)(B) of the CWA which mandates that a permit for discharges from MS4s must: (1) effectively prohibit the discharges of non-storm water to the MS4; and (2) require controls to reduce pollutants in discharges from MS4 to the maximum extent practicable (MEP) including best management practices, control techniques, system design and engineering methods, and such other provisions determined to be appropriate. Compliance with water quality standards is to be achieved over time, through an iterative approach requiring improved BMPs.

The permit requires the implementation of a comprehensive SWMP through a selection of BMPs [see 40 Code of Federal Regulations (CFR) 122.44(k)] as the mechanism to achieving the reduction of pollutants in storm water to the maximum extent practicable (MEP) [see CWA § 402(p)(3)(B)(iii)].

C. Regulatory Basis for Permit Conditions

As a result of the statutory requirements of the CWA, the U.S. EPA promulgated the MS4 Permit application regulations set forth in 40 CFR 122.26(d). These federal regulations described in detail the permit application requirements for MS4s operators. The information in the Report of Waste Discharge was utilized to develop the permit conditions and determine the Permittees' status in relationship to these conditions.

D. Discharge Limitations

No numeric effluent limitations are proposed at this time. In accordance with 40 CFR 122.44(k), the U.S. EPA has required a series of increasingly more effective BMPs[5], in the form of a comprehensive SWMP and performance standards, in lieu of numeric limitations.[6]

On 14 November 2003, 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).

The State Water Resources Control Board (SWRCB) convened a Storm Water Panel (Blue Ribbon Panel) of experts to address the issue of numeric effluent limits.[7] The study, finalized in June 2006, also concludes that it is not feasible at this time to set enforceable numeric effluent limits for storm water and non-storm water discharges from MS4s.

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[5] *Interpretative Policy Memorandum on Reapplication Requirements* of MS4s issued by U.S. EPA (61 Fed. Reg. 41697)
[6] *Interim Permitting Approach for Water Quality-Based Effluent Limitations in Storm Water Permits* (61 Fed. Reg. 43761)
[7] 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.

E. Policy

The State Water Resources Control Board adopted Resolution 68-16 ("Statement of Policy with Respect to Maintaining High Quality of Waters in California") (Antidegradation Policy), which requires the Regional Water Board to assure maintenance of the high quality of waters of the State unless the Regional Water Board makes certain findings. Under this policy, water quality degradation may be allowed if the following conditions are met: 1) any change in water quality must be consistent with maximum benefit to the people of the State; 2) will not unreasonably affect present and anticipated beneficial uses; 3) will not result in water quality less than prescribed in the Basin Plan; and 4) the discharge is required to meet waste discharge requirements that result in the best practicable treatment or control necessary to assure that pollution or nuisance will not occur and the highest water quality consistent with maximum benefit to the people of the state will be maintained. The communities covered by this Order have continued to develop since adoption of the previous permit. The increase in volume and mass of pollutants from the new urban runoff will not have significant impacts on aquatic life, municipal and domestic supply, and recreation uses, which are the beneficial uses most likely affected by the pollutants discharged.

An antidegradation analysis was submitted in August 2007.[8] The water quality impacts presented in the analysis shows that storm water runoff emanating from new urban development projected to occur in the Stockton Urbanized Area during the next five years will generally produce minor changes in loadings and concentrations of the ten pollutants evaluated. The pollutants evaluated include: diazinon, dissolved copper, dissolved oxygen, *E. coli,* phenanthrene, total dissolved solids (TDS), total mercury, total nitrogen, total organic carbon (TOC), and total suspended solids (TSS). Constituents selected for evaluation include those identified by the Permittees as pollutants of concern in the Report of Waste Discharge,[9] constituents for which the Regional Water Board is developing TMDLs, or constituents considered particularly relevant to the water quality of the Sacramento-San Joaquin Delta.

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[8] City of Stockton/County of San Joaquin, *Antidegradation Analysis – Storm Water Management Program,* August 2007, Larry Walker and Associates.

[9] City of Stockton/County of San Joaquin, National Pollutant Discharge Elimination System, Municipal Stormwater program, *Report of Waste Discharge & Proposed Stormwater Management Plan,* April 2007, Larry Walker Associates.

Section 5.0 of the analysis[10] provides an assessment of the Storm Water Management Program. The program elements include new development standards that were developed and implemented during the last permit term. This Order requires the revision of the development standards (a.k.a. *Storm Water Quality Control Criteria Plan* (2005, Revised March 2009),[11] as part of the SWMP, which states that all new urban development and significant redevelopment priority projects are subject to the source control measures, runoff reduction control measures, and treatment control measures. Site design and site-specific source controls are generally the most effective means to control urban runoff pollution because they minimize the need for treatment and are required for all applicable projects. Treatment controls are required in addition to source controls to minimize the discharge of pollutants to the storm water conveyance system.

The Water Quality Impacts Assessment Methodology, found in Section 6.3 of the antidegradation analysis, includes a rainfall-runoff mass balance model that conservatively estimates a reduction in pollutants by the conversion of agricultural land use to new urban development. The model shows that the estimated pollutant loading attributable to new urban development show both increases and decreases depending on the constituent. The constituent-by-constituent evaluation of modeled impacts due to new urban development is presented in Section 6.3.3. The analysis reports that the estimated pollutant reductions for existing and new urban development range from 5% to 10%, with the exception of reductions assumed for diazinon. Diazinon has been phased out of urban use and its use in agriculture has greatly decreased, but a conservative estimate of 75% rather than 100% pollutant reduction was chosen to account for stockpiling and continued allowable use of products containing the pesticide. The percent reductions shown in Table 6-6[12] reflect a very conservative estimate for pollutant reduction due to implementation of Storm Water Management Plan best management practices. Additionally, implementation of best management practices (primarily, extended detention basins) for new urban development, along with elements of low impact development, such as onsite infiltration, are expected to further reduce pollutant concentrations and flows attributable to new urban development runoff. Specific elements of the Permittee's Storm Water Management Plan are discussed in Section 5, and outlined in Appendix B of the analysis.

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[10] *Antidegradation Analysis*, page 22-34.
[11] City of Stockton, *Storm Water Quality Control Criteria Plan,* - Revised March 2009. Larry Walker and Associates.
[12] *Antidegradation Analysis,* page 42.

Based on the antidegradation analysis: 1) some degradation for a limited number of constituents is consistent with the maximum benefit to the people of the state; 2) the activity is necessary to accommodate important economic or social development in the area; 3) resulting water quality is adequate to fully protect and maintain existing beneficial uses; and 4) the discharge will not cause measurable changes in the receiving waters that cause the receiving waters to fall below applicable water quality objectives.

The analysis included an examination of: 1) existing applicable water quality standards; 2) ambient conditions in receiving waters compared to standards; 3) incremental changes in constituent loading, both concentration and mass; 4) treatability and levels of treatment or controls to be used and whether increased treatment is proposed to offset any increased volume or mass of discharge; 5) reduction of the discharge of pollutants from the urban areas to the maximum extent practicable (MEP); 6) comparison of the proposed increased volume or mass of pollutants relative to the volume or mass of pollutants that existed when the current permit was adopted; 7) an assessment of the significance of changes in ambient water quality compared to historic conditions, and 8) an analysis of alternatives to the discharge and treatment or control methods that would reduce water quality impacts.

The discharge from 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 also a need in Stockton to accommodate growth. The Regional Water Board does not have the jurisdiction to control growth in the City of Stockton/San Joaquin County, but is required to assure that the receiving waters are adequately protected as a result of urban discharges. The proposed Order allows storm water utility service necessary to accommodate housing and economic expansion in the area, and is considered to be a benefit to the people of the State. Compliance with these requirements will result in the reduction of discharge pollutants from the urban areas to the MEP. Reducing pollutants in the discharge to MEP will result in an insignificant impact on existing water quality.

IV. BACKGROUND - CITY OF STOCKTON AND SAN JOAQUIN COUNTY MS4

A. City of Stockton and San Joaquin County MS4 Permit History

The City of Stockton (hereafter City) is defined as a large municipality (population greater than 250,000) in the Code of Federal Regulations (CFR). As such, the City must obtain an NPDES municipal storm water permit. The County of San Joaquin (hereafter County) contains urbanized areas and areas of potential growth, which are enclosed within the City limits or surround the City (see Attachment A). Under the CFR, the County is considered part of the large municipal separate storm sewer system and is subject to the permit requirements.

The City and County (Permittees) are currently regulated by Waste Discharge Requirements Order No. R5-2007-0173, NPDES No. CAS083470, adopted on 6 December 2007. The Permittee's SWMPs were approved by the Regional Water Board on 8 October 2009 (Resolution No. 2009-0105). On 6 June 2012, the Permittees submitted a ROWD to the Central Valley Water Board requesting permit re-issuance. The ROWD included proposed amendments to the Storm Water Management Plans based on a completed program effectiveness assessment.

City of Stockton Statistics

1. Storm Sewer Fees: An annual fee of $25.20 ($2.10/month) is charged on all water bills collected for the operation of the Storm Water Utility Program.

2. Connection Fees: There are no storm drainage connection fees. New developments must complete all required improvements, including post construction BMPs, at there own expense.

3. Population: The calculated population of the Phase I NPDES permit area is approximately 286,041.

4. Grants/Loans: The City of Stockton does not receive grant/loan funds for the operation of the storm water program.

County of San Joaquin Statistics

1. Storm Sewer Fees: Storm sewer fees collected by the County are for operation and maintenance of specific drainage system such as a County Service Area or a Maintenance District. Fees vary based on

the type of system (gravity or pumped), operational costs and the limitations imposed by Proposition 218, which requires voter approval of any increase in fees for service charges. Each District is independent and revenues may only be expended for the uses in the establishing resolutions.

2. Annual Fees: County Service area 54 is coterminous with the County Phase I permit area and collects an annual fee of $35.00 ($2.92/month) per parcel for Storm Water Pollution Prevention to fund the NPDES program. With 16,000 properties in the permit area, this results in approximate revenues of $560,000 per year.

3. Connection Fees: There are no storm drainage connection fees. New developments must complete all required improvements, including post construction BMPs, at there own expense. New Special Districts or Zones are established in existing Special Districts are formed for ongoing maintenance. The new fee structures will include an escalator clause for inflation to meet the requirements of Proposition 218 for assessment increases without an election.

4. Population: The calculated population of the Phase I NPDES permit area is approximately 43,000.

5. Grants/Loans: San Joaquin County has not received any loans or grants for storm water. Without the ability to levee new fees a special district would not be able to repay any loan.

B. Storm Drain System

The Permittees own and operate a municipal storm drain system which collects storm water runoff and surface runoff generated from various land uses within the Permittees' jurisdictions. The outfalls drain to Bear Creek, Mosher Slough, Five Mile Slough, Fourteen Mile Slough, the Calaveras River, Smith Canal, the Deep Water Channel, Mormon Slough, Walker Slough, Duck Creek, Little Johns Creek, and the San Joaquin River. Respectively, the City and County have identified 158 and 47 outfalls within their jurisdictions. The City has 400 miles of storm drain lines. The County has not determined the length of its storm drain system.

C. Total Maximum Daily Loads (TMDLs)

In compliance with the previous Order No. R5-2007-0142, the Permittees submitted a Pesticide Plan, Pathogen Plan, and Smith Canal/Dissolved Oxygen Plan, which were approved by the Regional Water Board. The proposed Order requires the Permittees to 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. The proposed permit requires the Permittees to implement a Mercury Plan, Low Dissolved Oxygen Plan, Pathogen Plan, and Pesticide Plan. The proposed permit requires continued implementation of BMPs and assessment of the effectiveness of the BMPs to ensure that they are performing to the MEP.

The Regional Water Board is currently in the process of developing TMDLs for listed water bodies within the Region. The proposed Order includes Provisions consistent with the TMDL waste load allocations, the need to developed TMDLs for impaired waterbodies, and the Basin Plan implementation program. A separate Order will specify monitoring and assessment requirements for these Provisions. In the meantime, Permittees should implement actions and/or assessments to address water quality impairments. Once the Regional Water Board and U.S. EPA approve TMDLs, the proposed Order may be reopened to incorporate provisions to be consistent with waste load allocations established under the TMDLs.

The CWA Section 303(d) Listed Waterbodies in the Stockton Urbanized Area are included the following under Finding 70. These impairments are based on identified exceedances of water quality standards.

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

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.

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 included with the provisions to address the 303(d) listings for these waterbodies.

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 specifically in this Order or in a separate Order under authority of the California Water Code.

The Monitoring and Reporting program contains monitoring requirements necessary to evaluate compliance with the Order and its provisions. The Regional Water Board seeks to obtain supplemental information related to the Regional Water Board's water quality based program for pesticides, dissolved oxygen, pathogens, and mercury/methylmercury. Because the information and monitoring associated with these programs is in addition to and not directly related to this Order, the Regional Water Board has required such monitoring through the Regional Water Board's authority pursuant to Water Code (WC) section 13267. Thus, a separate order pursuant to WC section 13267 was issued to the Permittees prior to the Regional Water Board's adoption of the Order and its associated monitoring provisions.

V. STORM WATER MANAGEMENT PROGRAM ELEMENTS

Federal regulations (40 CFR 122.26(d)(2)(iv)) provide that, "A proposed management program covers the duration of the permit. It shall include a comprehensive planning process which involves public participation and where necessary intergovernmental coordination, to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system, design and engineering methods, and such other provisions which are appropriate. The program shall also include a description of staff and equipment available to implement the program."

As part of their application for permit renewal, the Permittees have submitted a draft SWMP describing the framework for management of storm water discharges during the term of this permit. The draft SWMP represents an improvement over the previous SWMP because it incorporates new and enhanced control measures and performance standards. The draft SWMP provides the goals and objectives, legal authorities, source identification process,

funding sources, best management practices (BMPs) evaluation and improvement process, approach for effectiveness assessments of the programs, and a monitoring plan. The draft SWMP also includes specificity for each program element and control measures that identifies what actions are to be taken, the timeframe for the actions, the responsible parties and the data that needs to be collected in order to identify if the program is effective. 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) implement an effective SWMP that is well understood and broadly supported by regional stakeholders. The SWMP is an integral and enforceable component of the proposed permit.

The SWMP includes the following program components:

- Program Management
  - Legal Authority
  - Fiscal Analysis

- Programs Elements
  - Construction Program
  - Planning and Development Program
  - Industrial and Commercial Program
  - Municipal Operations Program
  - Illicit/Illegal Discharge Program
  - Public Education and Outreach Program

- Baseline Monitoring
  - Urban Discharge Monitoring
  - Receiving Water Monitoring
  - Water Column Toxicity Monitoring
  - Dry Weather Field screening

- Sediment Toxicity

- Bioassessment

- Water Quality Based Programs
  - Pesticide Plan
  - Low Dissolved Oxygen Plan
  - Pathogen Plan
  - Mercury Plan

- Program Effectiveness Assessment and Reporting

Some of these program elements and the corresponding proposed permit requirements under those elements are discussed below.

A. **Program Management**

The proposed permit requires submission of an Annual Work Plan by 1 April of each year. The Annual Work Plan provides 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. The proposed permit also requires submission of an Annual Report by 1 September of each year. The Annual Report documents 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 program effectiveness assessment and recommended modifications for each Program Element. Each Annual Report shall build upon the previous year's efforts using and identifying best management practices to the maximum extent practicable. The Annual Report includes a compilation of deliverables and milestones completed during the previous 12-month period, as described in the SWMP and Annual Work Plan.

B. **Construction Program**

Legal Authority

Federal regulations [40 CFR 122.26(d)(2)(iv)(D)] provide that a proposed management program must include "a description of a program to implement and maintain structural and non-structural best management practices to reduce pollutants in storm water runoff from construction sites to the municipal storm sewer system."

Background

As stated in the *California Storm Water Best Management Practice Handbook for Construction Activity* (BMP Handbook), "Construction usually increases the amount of impervious area causing more of the rainfall to run off, and increasing the speed at which runoff occurs. Unless properly managed, this increased runoff will erode natural and/or unprotected watercourses causing the watercourse to widen…Sedimentation can also contribute to accelerated filling of reservoirs, harbors, and drainage systems."[13]

[13] *California Storm Water Best Management Practice Handbook for Construction Activity*. 1993.

C. Industrial and Commercial Program

Legal Authority

Federal regulations [40 CFR 122.26(d)(2)(iv)(C)] require the following, "A description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system. The program shall:

1. Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges;

2. Describe a monitoring program for storm water discharges associated with industrial facilities […]"

Background

The municipality is ultimately responsible for discharges from the MS4. Because industrial awareness of the program may not be complete, there may be facilities within the MS4 area that should be permitted but are not (non-filers). The Phase I regulations requirement for industries to obtain permit coverage for storm water discharges is largely based on Standard Industrial Classification Code. This has been shown to be incomplete in identifying industries (which include commercial businesses) that may be significant sources of storm water pollution. In addition, the permitting authority may not have adequate resources to provide the necessary oversight of permitted facilities. Therefore, it is in the municipality's best interest to assess the specific situation and implement an industrial/ commercial inspection and enforcement program to control the contribution of pollutants to the MS4 from all these potential sources.

In the preamble to the 1990 regulations, the U.S. EPA clearly states the intended strategy for discharges of storm water associated with industrial activity:

"Municipal operators of large and medium municipal separate storm sewer systems are responsible for obtaining system-wide or area permits for their system's discharges. These permits are expected to require that controls be placed on storm water discharges associated with industrial activity which discharge through the municipal system." The U.S. EPA

also notes in the preamble *"municipalities will be required to meet the terms of their permits related to industrial dischargers*."

Similarly, in the U.S. EPA's Guidance Manual[10] (Chapter 3.0), it is specified that MS4 applicants must demonstrate that they possess adequate legal authority to:

- Control construction site and other industrial discharges to MS4s;
- Prohibit illicit discharges and control spills and dumping;
- Carry out inspection, surveillance, and monitoring procedures.[14]

The document goes on to explain that *"control"*, in this context means not only to require disclosure of information, but also to *limit, discourage, or terminate* a storm water discharge to the MS4. Further, to satisfy its permit conditions, a municipality may need to impose additional requirements on discharges from permitted industrial facilities, as well as discharges from industrial facilities and construction sites *not* required to obtain permits.

In the same Guidance Manual[15] (Chapter 6.3.3), it is stated that the municipality is ultimately responsible for discharges from their MS4. Consequently, the MS4 applicant must describe how the municipality will help the U.S. EPA and authorized NPDES States to:

- Identify priority industries discharging to their systems;
- Review and evaluate storm water pollution prevention plans (SWPPPs) and other procedures that industrial facilities must develop under general or individual permits;
- Establish and implement BMPs to reduce pollutants from these industrial facilities (or require industry to implement them); and
- Inspect and monitor industrial facilities discharging storm water to the municipal systems to ensure these facilities are in compliance with their NPDES storm water permit, if required.

Discussion

Recognizing that the municipality is ultimately responsible for the quality of storm water discharges from the MS4, the municipalities are required to evaluate the industrial/commercial facilities and determine their compliance with the permit requirements, as well as their contribution to the MS4 and potential impacts to the receiving waters. The proposed

[14] *Guidance Manual For the Preparation of Part 2 of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems* - U.S. EPA -November 1992
[15] *Ibid.*

permit requires the Permittees to update existing ordinances/standards/ specifications if they do not provide sufficient legal authority to implement the Industrial and Commercial Program components as required by the regulations.

Integration of NPDES Program for MS4 with NPDES Program for Industrial Activities

Recognizing the dual coverage envisioned by the federal regulations[16], and suggested partnership between local and State authorities, this Order requires Permittees to coordinate with State activities for the implementation of the General Industrial Activities Storm Water Permit (General Industrial Permit). The goal is to control industrial sources and other sources not specifically covered under Phase I storm water regulations but identified as significant contributors of pollutants by the municipalities through their identification and prioritization studies. The net result should be a better and improved coordinated program with greater impact on limiting and eliminating (as a final goal) the contribution of pollutants to the receiving water while maintaining and/or restoring the capacity of the receiving water to sustain the beneficial uses without impairments.

Based on the dual coverage and partnership approach between the permitting authority and municipalities that the U.S. EPA envisioned in the storm water regulations[17,18], and in order to best use limited resources at the State and local levels, the proposed permit requires the Permittees to: (i) Control the storm water discharges associated with industrial activities and other commercial facilities identified as significant contributors of pollutants; and (ii) Assist the Regional Water Board in implementing the general permit for industrial activities. This approach is consistent with the nationwide approach used by the U.S. EPA in issuing MS4 permits.[19] The education and outreach should be continued under the auspices of the Public Education program.

The strategy, as outlined in the draft permit, builds on the State/ municipality's partnership by focusing their limited resources on the following activities:

[16] Federal Register Vol. 55, No 222, pp. 48000; U.S. EPA Storm Water Phase II Compliance Assistance Guide, 2000, pp. 4-32 and 5-11, where it clarifies the dual responsibility
[17] Letter dated December 19, 2000, from Alexis Strauss, Director, Water Division, U.S. EPA Region IX, to Dennis Dickerson, Executive Officer, Regional Water Quality Control Board-Los Angeles Region.
[18] Letter dated April 30, 2001, from Alexis Strauss, Director, Water Division, U.S. EPA Region IX, to Honorable Stephen Horn, U.S. House of Representatives
[19] MS4 NPDES Permits issued to Palm Beach County, Broward County, Sarasota County, Florida, Tulsa, Oklahoma, Denver, Colorado.

- The Permittees will take a lead role in inspecting restaurants, automotive service facilities, retail gasoline outlets, and industrial facilities not covered by the General Industrial Permit;

- The Regional Water Board will be the lead agency for inspections of facilities covered or in need of coverage under General Industrial Permit;

- The Permittees will assist the Regional Water Board in its activities to fully enforce the General Industrial Permit through spot check inspections, referrals, data information research, joint inspections; and

- The Regional Water Board and Permittees will coordinate their information systems and task scheduling to avoid duplication and strengthen their inspections activities.

D. Municipal Operations Program

Legal Authority

Federal regulations [40 CFR 122.26(d)(2)(iv)(A)(1,3,4,5, and 6)] require that each Permittee must develop a program to reduce the discharge of pollutants from the MS4 to the maximum extent practicable for all urban land uses and activities, including municipal areas and activities.

Background

Many Permittees provide services that ultimately result in the enhancement of the lives of the residents. Some examples of services include the prevention of sanitary sewer overflows; implementation of standard protocols for storage, usage, and disposal of pesticides, herbicides and fertilizers; conduct street sweeping activities; and annually determine the effectiveness of these services and identify necessary modifications to improve services.

Each Permittee is required to 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.

E. Illicit Connection/Illegal Discharge Program

Legal Authority

Federal regulations [40 CFR 122.26(d)(2)(iv)(B)] state that a proposed management program shall be based on a description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer. It states further that a Permittee must include in its proposed management program a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal storm sewer system.

Background

During dry weather, much of the discharge to storm drain systems consists of non-storm water sources. A significant amount of such discharges may be from illicit discharges or connections, or both. Illicit discharges may occur either through direct connections, such as deliberate or mistaken piping, or through indirect connections, such as dumping, spillage, subsurface infiltration, and washdown.

Each Permittee is required to 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 to the MEP.

F. Public Outreach Public Education Program (Collectively Public Outreach Program)

Legal Authority

Federal regulations [40 CFR 122.26(d)(2)(iv)(A)(6)] provide that the proposed management program include, “A description of a program to reduce to the maximum extent practicable, pollutants in discharges from municipal separate storm sewer system associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities.” These regulations [40 CFR 122.26(d)(2)(iv)(B)(6)] also provide that the proposed management program include, “A description of education activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials.”

To satisfy the Public Outreach Program, the Permittees need to:
(i) Implement a public education program to distribute educational materials to the community, or conduct equivalent outreach activities about the impacts of storm water discharges on local water bodies and the steps that can be taken to reduce storm water pollution; and (ii) Determine the appropriate BMPs and measurable goals for this minimum control measure.

Background

Implementation of a Public Outreach Program is a critical BMP and a necessary component of a storm water management program. The State Board Technical Advisory Committee "recognizes that education with an emphasis on pollution prevention is the fundamental basis for solving nonpoint source pollution problems." The U.S. EPA Phase II Fact Sheet 2.3 finds that "An informed and knowledgeable community is critical to the success of a storm water management program since it helps insure the following: (i) greater support for the program as the public gains a greater understanding of the reasons why it is necessary and important, and (ii) greater compliance with the program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of area waters.[20] [21]

Furthermore, the public can provide valuable input and assistance to a municipal storm water management program and should play an active role in the development and implementation of the program. An active and involved community is essential to the success of a storm water management program.

Discussion of Requirements

Based on the background information, the Permittees should continue their educational storm water and urban runoff outreach programs. According to the U.S. EPA, materials and activities should be relevant to local situations and issues, and incorporate a variety of strategies to ensure maximum coverage.[22] To help address local situations and sources of specific pollutants, the Public Outreach Program requires specific programs for targeted communities, for example, ethnic groups, retail gasoline outlets (RGOs), and restaurants, that may not be reached

[20] *Storm Water Phase II Final Rule – Public Education and Outreach Minimum Control Measure*, U.S. EPA Fact Sheet 2.3, January 2000.
[21] Phase II Fact Sheet 2.3

by or understand existing storm water educational materials. In an effort to reach these groups the Public Outreach Program must requires the development of a strategy to provide outreach information including bilingual materials to target ethnic communities. The U.S. EPA encourages partnerships and cooperation.[23] The proposed permit requires coordination between the Permittees and other MS4 permittees. This requirement will ensure that the Permittees are apprised of the most efficient and effective program. It is generally more cost-effective to have numerous operators coordinate to use an existing program than all developing their own local programs. Furthermore, directing materials or outreach programs toward specific groups of commercial, industrial, and institutional entities likely to have significant storm water impacts is recommended.[24] The next step in this targeted outreach program is education of specific businesses to facilitate employee compliance. Therefore, the permit requires implementation of a business outreach program to educate management and employees at prioritized businesses about storm water regulations. Also, a non-regulatory business assistance program would encourage small businesses that lack access to the expertise necessary to comply with storm water regulations and to implement pollution prevention measures. The business assistance program is not a requirement, however, its implementation is encouraged.

Program Performance Measures

The Permittees 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.

Each Permittee will be required to 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 to the MEP. In addition, each Permittee will be required to continue to 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.).

[23] *Ibid.*
[24] Phase II Fact Sheet 2.3

G. Water Quality-Based Programs

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." 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 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 2010 CWA Section 303(d) List was approved by USEPA on 11 October 2011. With one exception, the USEPA issued its final decision regarding the water bodies and pollutants USEPA added to California's 2010 CWA Section 303(d) List based on the of the State's assessment determinations by letter dated12 November 2010. The Permittees' discharge of storm water into an impaired water body will be subject to load allocations and implementation plans established under the TMDLs.

As discussed and shown in the table above under "TMDLs," the Stockton Urbanized Area has listed impaired water bodies pursuant to Section 303(d) of the CWA.

H. Planning and Land Development Program

Legal Authority

Federal regulations (40 CFR 122.26) require that pollutants in storm water be reduced to MEP. The U.S. EPA's definition is intentionally broad to provide maximum flexibility in MS4 permitting and to give municipalities the opportunity to optimize pollutant reductions on a program-to-program basis.[25] The definition of MEP has generally been applied to mean implementation of economically achievable management practices. Because storm water runoff rates can vary from storm to storm, the statistical probabilities of rainfall or runoff events become economically significant and are central to the control of pollutants through cost effective BMPs. Further, it is recommended that storm water BMPs be designed to manage both flows and water quality for best performance.[26] It is equally important that treatment BMPs once implemented be routinely

[25] *Storm Water Phase II Final Rule* – Pre-Federal Register Version, p 87 (U.S. EPA 1999). See U.S. EPA's discussion in response to challenges that the definition is sufficiently vague to be deemed adequate notice for purposes of compliance with the regulation.
[26] *Urban Runoff Pollution – Summary Thoughts* – The State of Practice Today and For the 21st Century. Wat. Sci. Tech. 39(2) pp. 353-360. L.A. Roesner (1999)

maintained.

Background

On a national level, the U.S. EPA is planning to standardize minimum BMP design and performance criteria for post-construction BMPs, and will likely build from the experience of effective state and local programs to establish national criteria.[27] The U.S. EPA, based on the NURP, supports the first half-inch of rainfall as generating first flush runoff.[28] First flush runoff is associated with the highest pollutant concentrations, and not pollutant load. The U.S. EPA considers the first flush treatment method, the rainfall volume method, and the runoff capture volume method as common approaches for sizing of water quality BMPs.

On 5 October 2000, the State Water Board adopted Order WQ 2000-11[29] concerning the use of Standard Urban Storm Water Mitigation Plans (SUSMPs) in municipal storm water permits for new developments and significant redevelopments by the private sector. The precedent setting decision largely sustained the LA Regional Board SUSMPs. The State Board amended the SUSMP to limit its application to discretionary projects as defined by CEQA, eliminated the category for projects in environmentally sensitive areas, and set aside the requirement for retail gasoline outlets to treat storm water until a threshold is developed in the future. In addition, the State Board articulated its support for regional solutions and the mitigation banking. 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 proposed permit must be consistent with applicable portions of the State Water Board's decision and include SUSMPs, which the proposed permit refers to as Development Standards.

Discussion of Requirements

This component of the Phase I program requires each Permittee 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.

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[27] *Storm Water Phase II Final Rule* – 64 Fed. Reg. 68759. See U.S. EPA's discussion on construction and post-construction BMP requirements for Phase II.
[28] *A Watershed Approach to Urban Runoff: Handbook for Decisionmakers*, Terrene Institute and U.S. EPA Region 5 (1996). See discussion on sizing rules for water quality purposes, p 36.
[29] *State Water Board Order WQ 2000-11*: SUSMP; Memorandum from Chief Counsel to Regional Board Executive Officers, (December 26, 2000) discusses statewide policy implications of the decision.

New/Revised Development Standards - Impacts from New Development

Treatment control BMP requirements on new development and redevelopment offer the most cost-effective strategy to reduce pollutant loads to surface waters. Retrofit of existing development will be expensive and may be considered on a targeted basis. Studies on the economic impacts of watershed protection indicate that storm water quality management has a positive or at least neutral economic effect while greatly improving the quality of surface waters.[30]

Financing the MS4 program offers a considerable challenge for municipalities. A proven successful financing mechanism is the establishment of a storm water utility.[31] Utility fees, which are assessed on the property owner based on some estimate of storm water runoff generated for the site, are a predictable and dedicated source of funds. Utility fees can also provide a mechanism to provide incentives to commercial and industrial property owners to reduce impervious surface areas. Such incentives offer flexibility to property owners to choose the better economic option – paying more fees or making improvements to reduce runoff from the site.

Low Impact Development (LID) and Hydromodification

This Order requires the Permittees revise their Development Standards within one year from adoption of the proposed Order to incorporate LID design concepts. The Permittees are also required to revise applicable ordinances/standards/specifications within one year of the revision of the Development Standards.

VI. MONITORING PROGRAM

Legal Authority

Federal regulations (40 CFR 122.26(d)) require the following: (1) quantitative data from representative outfalls designated by the permitting authority, which shall designate between five and ten outfalls or field screening points as representative of the commercial, residential, and industrial land use activities of

[30] *The Economics of Watershed Protection*, T. Schueler (1999), Center for Watershed Protection, Endicott, MD. The article summarizes nationwide studies to support the statement that watershed planning and storm water management provides positive economic benefits.
[31] *Preliminary Data Summary of Urban Storm Water Best Management Practices* (1999), Report No. U.S. EPA-821-R-99-012, U.S. EPA. The document reviews municipal financing mechanisms and summarizes experience in the U.S. to date.

the drainage area contributing to the MS4; (2) estimates of the annual pollutant load of the cumulative discharges to waters of the United States from all identified municipal outfalls and the event mean concentration of the cumulative discharges for constituents of concern; (3) estimated reductions in loadings of pollutants from discharges of municipal storm sewer constituents from municipal storm sewer systems expected as the result of SWMP implementation; and (4) the Permittees to submit an annual report that identifies, among other things, water quality improvements or degradation. Items 1-3 are required as Part 2 of the initial application. However, since they are needed to evaluate the SWMP, they are being incorporated into this Order.

Although the Monitoring and Reporting Program has evolved since the first stormwater permit was issued, the Permittees have been monitoring storm events since 1992 and dry weather events since 2004. The current monitoring program is intended to assess the impact of urban discharge on receiving waters. The data collected are from sites with residential, commercial, industrial, and mixed land uses, and they encompass a wide range of storm conditions, which has resulted in a robust dataset. However, it is recognized that revisions to the MRP may be appropriate to ensure that the Permittees are directing their resources to the most critical water quality issues and collecting data to support management decisions to address these water quality issues. This Order is being renewed for a limited term to allow the option to participate in a RMP and to propose an alternative monitoring program immediately rather than having to wait until the Region-wide MS4 general permit is adopted.

Regional Monitoring Program

The Regional Water Board requires individual Permittees and Permittee groups to conduct local water quality monitoring. The purpose of this local water quality monitoring is to provide information regarding the impacts of discharges on local receiving waters, and on the extant condition of those waterbodies. However, the equivalent funds spent on current local water quality monitoring efforts could be used more efficiently and productively to better characterize the spatial and temporal distribution of contaminants and physical conditions of Central Valley waterbodies on a regional scale or other regional water quality issues, if those funds were used for a coordinated monitoring effort, rather than continue to be used in individual, uncoordinated local water quality monitoring programs. Regional Monitoring Programs (RMPs), such as the Delta RMP,[32] provide data to better inform management and policy decisions regarding Central Valley region waterbodies.

[32] Specific information regarding the Delta RMP is available at http://www.waterboards.ca.gov/centralvalley/water_issues/delta_water_quality/comprehensive_monitoring_program/index.shtml.

With this Order, the Regional Water Board is authorizing Permittees that elect to participate in a RMP and reduce some of the local water quality monitoring required in the Monitoring and Reporting Program (MRP) and related monitoring described in the SWMP. If the Permittees elect to reduce local water quality monitoring and participate in a RMP, the Permittees shall submit a letter signed by an authorized representative to the Executive Officer informing the Regional Water Board that the Permittee will participate in a RMP and the date on which local water quality monitoring, would be modified. To ensure consistency with this Order and the MRP, reductions in local water quality monitoring require the Executive Officer's prior written approval as well as RMP Steering Committee action on a forthcoming Regional Monitoring Program monitoring plan.

RMP data is not intended to be used directly to represent receiving water quality for purposes of determining if a discharge is causing or contributing to an exceedance of any applicable water quality standards. RMP monitoring stations are established generally as "integrator sites" to evaluate the combined impacts on water quality of multiple discharges into Central Valley region waterbodies; RMP monitoring stations would not normally be able to identify the source of any specific constituent, but would be used to identify water quality issues needing further evaluation. RMP monitoring data may be used to help establish receiving water quality for a water quality data analysis after evaluation of the applicability of the data for that purpose. In general, monitoring data from samples collected in the immediate vicinity of the discharge will be given greater weight in permitting decisions than receiving water monitoring data collected at greater distances from the discharge point. RMP data, as with all environmental monitoring data, can provide an assessment of water quality at a specific location and time that can be used in conjunction with other information, such as other receiving water monitoring data, spatial and temporal distribution and trends of receiving water data, point and non-point source discharges, receiving water flow rate and velocity, and to determine potential source or sources of a constituent that contributed to an exceedance of any applicable water quality standards.

If the Permittees participate in a RMP and reduce some local water quality monitoring, the Permittees shall continue to participate in the RMP until such time as the Permittees inform the Regional Water Board that participation in the RMP will cease and all local water quality monitoring is reinstituted. Some monitoring under Provisions II, Monitoring and Reporting Program, is not required under this Order so long as the Permittees adequately support the RMP. Participation in the RMP by a Permittees shall consist of providing funds and/or in-kind services to a RMP at least equivalent to discontinued local water quality monitoring efforts. If the Permittees fail to maintain adequate participation in a RMP, as determined through criteria to be developed by an RMP, the RMP will recommend to the Regional Water Board that a local water quality monitoring program be reinstated for that Permittee.

Data from a RMP may be utilized to characterize the receiving water in the permit renewal. The Permittees may, however, conduct any site-specific monitoring deemed appropriate by the Permittees and submit that monitoring data to the Regional Water Board provided the modified monitoring program approved by the Executive Officer is conducted at a minimum. Historic receiving water monitoring data taken by the Permittees and from other sources may also be evaluated to determine whether or not that data is representative of current receiving water conditions. If found to be representative of current conditions, then that historic data may be used in characterizing receiving water quality.

A. **Urban Discharge Monitoring**

Since 1992, the Permittees have been monitoring five drainage basins, shown in Attachment A. Three of these basins are from residential areas. Two of these residential basins, MS-14 and MS-18, are in the same general vicinity and both discharge to Mosher Slough. Due to the similarity of monitoring data from these two residential basins and the fact that they both discharge to the same receiving water, this monitoring program requires monitoring of MS-14 only along Mosher Slough. Samples will be taken from representative outfalls for the following drainage basins: CR-46, discharging to the Calaveras River; DC-65, discharging to Duck Creek; and MS-14, discharging to Mosher Slough. The locations of these basins are shown in Attachment A of the Order. Samples will also be taken at a representative outfall for the urban area surrounding Smith Canal, and near the receiving water sampling location designated as SC-1M in Attachment A. The proposed locations of urban discharge monitoring stations will be presented in the revised SWMP. If additional sample station locations are needed, they shall be established under the direction of Board staff, and a description of the stations shall be attached to this MRP. Urban discharge monitoring shall be consistent with the frequency and schedule shown on Table 1. Sample collection and analysis shall follow standard U.S. EPA protocol. Each year, samples shall be collected **during two storm events** and **two during the dry season**, at a minimum.

B. **Receiving Water Monitoring**

All receiving water samples shall be grab samples, collected at mid-depth, in mid-stream of the receiving water. Receiving water sampling may be postponed or eliminated if hazardous weather and/or river flow conditions prevent safe access to sampling location. Receiving water monitoring shall be taken after discharges from MS-14, SC-1, CR-46, and DC-65 have occurred and shall be consistent with the frequency and schedule shown on Table 1. Attachment A shows the approximate locations of the receiving water sampling stations. Sample collection and analysis shall follow

standard U.S. Environmental Protection Agency (US EPA) protocol. Each year, samples shall be collected **during two storm events** and **two during the dry season,** at a minimum.

The proposed Order includes a new requirement to monitor representative upstream receiving water to identify pollutants of concern that flow into the Stockton Urbanized Area from outside sources. The new sampling locations are included on Attachment A.

C. **Method Detection Monitoring**

The Minimum Levels (MLs) listed in Appendix 4 of the State Board Policy for Implementation of Toxics Standards for Inland Surface Water, Enclosed Bays, and Estuaries of California, 2000 (SIP) represent the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix interferences.[33] These MLs must be incorporated into all water quality monitoring programs to detect priority toxic pollutants. The MLs are the only established criteria that take into consideration recent improvements in chemical analytical methods. If they are not used in the storm water program, concentrations of concern for priority toxic pollutants may not be detected. Detection and control of toxic pollutants in surface waters is necessary to achieve the CWA's goals and objectives.[34] Numeric criteria for toxic pollutants are necessary to evaluate the adequacy of existing and potential control measures to protect aquatic ecosystems and human health.[35] Also, using MLs will provide quantifiable data that is necessary to better assess water quality and to develop Waste Load Allocations (WLA) and Load Allocations (LA) for TMDLs. Furthermore, non-detects cannot be used to accurately determine mass loadings. The criteria established in the CTR are legally applicable in the State of California for inland surface waters, enclosed bays and estuaries for all purposes and programs under the CWA.[36] Section 402(p)(3)(B)(iii) gives U.S. EPA and states the authority to incorporate appropriate water quality-based effluent limitations in NPDES permits for discharges from MS4s.[37]

D. **Water Column Toxicity Monitoring**

Studies conducted by Regional Water Board staff and Delta Keeper from 1994 to 2001 found toxicity in the Calaveras River, Duck Creek, Five-Mile

[33] SIP
[34] 65 Fed. Reg. 31683
[35] *Ibid.*
[36] 65 Fed. Reg. 31682
[37] 65 Fed. Reg. 31703

Slough, Mosher Slough, and Smith Canal. Therefore, short-term chronic toxicity monitoring is required by this Order.[38]

Toxicity testing is used to assess the impact of storm water pollutants on the overall quality of aquatic systems.[39] It can be a very useful tool for storm water managers. The Center for Watershed Protection rated toxicity testing as a "very useful" indicator for assessing municipal storm water programs. Toxicity testing can also be used to evaluate the effectiveness of storm water BMPs and other storm water pollution reduction measures.[40] Managers can use the results of toxicity testing to identify areas of high concern and to establish priority locations for BMPs. Furthermore, Toxicity Identification Evaluations (TIEs) and Toxicity Reduction Evaluations (TREs) can be used to identify specific pollutants and their sources so that management actions can be more specifically prioritized.

Overall, the toxicity monitoring program will assess the impact of storm water on the overall quality of aquatic systems and implement measures to ensure that those impacts are eliminated or reduced. Chemical monitoring does not necessarily reveal the impacts of storm water on aquatic life or beneficial uses of water bodies. Therefore, toxicity monitoring is a necessary component of a storm water monitoring program.

Water monitoring will take place at each receiving water and urban discharge stations and in accordance with the specific plans required for TMDL development within the proposed permit, as well as the Pollutants of Concern (POCs) identified below. Grab samples shall be used for receiving water monitoring.

The water column monitoring shall include all pollutants including constituents and identified waterways pursuant to the: (1) Mercury Plan; (2) Pesticide Plan; (3) Low DO Plan; (4) Pathogen Plan; and (5) Detention Basin monitoring Special Studies.

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.

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[38] Review of the City of Stockton Urban Stormwater Runoff, Aquatic Life Toxicity Studies Conducted by the CVRWQCB, DeltaKeeper and the University of California, Davis, Aquatic Toxicology Laboratory, between 1994 and 2000. G. Fred Lee, PhD, DEE and Anne Jones-Lee, PhD.
[39] Center for Watershed Protection, Environmental Indicators to Assess Stormwater Control Programs and Practices (1996).
[40] *Ibid*.

A Delta mercury control program will be in effect after the Central Valley Water Board adopts Basin Plan amendments to establish a Delta mercury control program. The goal of the mercury control program is to reduce methylmercury exposure to humans and wildlife in the Delta.

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[41]). The methylmercury concentrations ranged from 0.084 to 0.533 ng/l; (Wood et al., 2006b[42]).

Monitoring is needed to characterize the concentrations and loads of methylmercury entering the Delta from Stockton area urban runoff and to evaluate 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. The Sacramento-San Joaquin Delta Methylmercury TMDL became effective on 20 October 2011, which specified monitoring and assessment requirements that must be implemented for control and characterization studies.

E. Bioassessment

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

[41] 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

[42] 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

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 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 were not required under the Permittee's current permit (Order No. R5-2007-0142) until the evaluation of the existing data was complete, and the monitoring effort was adapted in consultation with SWAMP's bioassessment workgroup. Bioassessment monitoring activities will not be required under this Order.

F. Sediment Toxicity

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).[43] 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).[44] 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.

VII. Program Effectiveness Assessment

The proposed permit requires the Permittees provide an analysis of the effectiveness of their SWMP in their Annual Reports. The assessment shall

[43] 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.
[44] 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.

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 the proposed permit. Direct and indirect measurements shall include, but not limited to, conformance with established Performance Standards, quantitative monitoring to assess the effectiveness of Program Elements, 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.

a. The Permittees will be required to track the long-term progress of their SWMP towards achieving improvements in receiving water quality.

b. The Permittees will be required to 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.