

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
CENTRAL VALLEY REGION

ORDER NO. R5-2008-

NPDES NO. CAS083526

WASTE DISCHARGE REQUIREMENTS  
FOR  
CITY OF MODESTO  
STORM WATER DISCHARGE FROM  
MUNICIPAL SEPARATE STORM SEWER SYSTEM  
STANISLAUS COUNTY

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

1. The City of Modesto submitted a Report of Waste Discharge (ROWD) on 2 April 2007 and requested reissuance of Waste Discharge Requirements (WDR) 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 and watercourses within the jurisdiction of the Discharger and to implement a Storm Water Management Plan (hereafter SWMP) for the City of Modesto.
2. Prior to issuance of this Order, the City of Modesto was covered under the NPDES area-wide MS4 permit, Order No. R5-2002-0182 (NPDES No. CA0083526) adopted on 1 October 2002.
3. The City of Modesto is located in Stanislaus County at the confluence of Dry Creek and the Tuolumne River (tributaries of the San Joaquin River). The City encompasses 36 square miles<sup>1</sup> with an average elevation of 91 feet above sea level. The average annual precipitation is approximately 12.2 inches.<sup>2</sup> The storm drain system has approximately 77 miles of storm drain lines and 20 pump stations within the City. Storm water discharges from the City drain to detention/retention basins (13 detention and 11 retention basins in the City), approximately 18 major outfalls to receiving waters (Tuolumne River or Dry Creek), Modesto Irrigation District (MID) laterals/drains, or rock wells (approximately 11,000). **Attachment A** shows a map of the City of Modesto and the service area covered under this permit.
4. Surface water discharges occur generally in the older areas of the City or those areas immediately adjacent to the Tuolumne River, Dry Creek or irrigation canals. Forty percent of storm water discharges to detention/retention basins, twenty percent to

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<sup>1</sup> U.S. Census Bureau, 2000.

<sup>2</sup> Modesto Irrigation District, Water Years 2002-2007.

receiving waters (Tuolumne River or Dry Creek), ten percent direct to MID laterals/drains, and thirty percent to rock wells.<sup>3</sup>

5. The City of Modesto (hereafter referred to as the Discharger) is defined as a medium municipality (population greater than 100,000 but less than 250,000) in the Code of Federal Regulations (CFR) (40 CFR 122.26 (b)(7)). As such, the Discharger must obtain an NPDES municipal storm water permit.
6. The Discharger has jurisdiction over and/or maintenance responsibility for the MS4 that it owns and/or operates in Stanislaus County. The discharge consists of the surface runoff generated from various land uses in all the hydrologic sub-basins, which discharge into either storm drains or rock wells.
7. This Order and its requirements are not intended to restrict or control local land use decision-making authority. The Discharger retains authority to make the final land-use decisions and retain full statutory authority for deciding what land uses are appropriate at specific locations within its jurisdiction. The Regional Water Board recognizes that the Discharger's land use authority allows urban developments that may generate pollutants and runoff that could impact receiving water quality and adversely impact beneficial uses. The Discharger is 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). This responsibility requires the Discharger to exercise its legal authority to ensure that any increased pollutant loads and flows do not affect 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 Cal. 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 Discharger 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 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 discharge directly to the Discharger's conveyance system. Discharges from these sources may be subject to total maximum daily load (TMDL) allocations and control programs.

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<sup>3</sup> Source: Draft City of Modesto Storm Drainage Master Plan, October 2006.

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 of a watershed 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 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 areas (ESAs), such as water bodies supporting rare, threatened or endangered species and CWA 303(d) impaired water bodies. Such areas 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 ESA.
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.

#### **DISCHARGE CHARACTERISTICS**

14. The quality and quantity of these discharges vary considerably because of the effects of hydrology, geology, land use, season, and sequence and duration of hydrologic events. Urban storm water runoff may contain pollutants that may lower the quality of receiving waters and adversely impact beneficial uses of the the Tuolumne River and Dry Creek.

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 Modesto Urbanized Area is relatively flat, receiving waters tend to exhibit low water velocities even during storm events. As a result it is unclear whether urban runoff from Modesto leads to downstream erosion and/or excessive sediment discharge and deposition in the stream channels.
16. Water quality assessments conducted by the Discharger and the Regional Water Board identified impairment, or threatened impairment, of beneficial uses of water bodies in the Modesto Region. The causes of impairments include pollutants of concern identified in municipal storm water discharges by the City of Modesto in the ROWD. Pollutants in storm water can have damaging effects on both human health and aquatic ecosystems.
17. The discharge of wash waters and polluted storm water from industries and businesses threaten water quality 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 services facilities as a major cause of contamination and water quality problems.
18. Certain pollutants present in storm water and/or urban runoff may be derived from extraneous sources that the Discharger has no or limited jurisdiction over. Examples of such pollutants and their respective sources are: polynuclear aromatic hydrocarbons (PAHs) which are products of internal combustion engine operation, nitrates, bis (2-ethylhexyl) phthalate, metals, and mercury from wet and dry atmospheric deposition, historic uses of leaded fuels, copper from brake pad wear, zinc from tire wear, bacteria from natural sources including wildlife, dioxins as products of combustion, pesticides, 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.
19. Since receiving the second term permit in October 2002, the Discharger has conducted an Urban Discharge and Receiving Water Monitoring Plan, which includes urban discharge and receiving water monitoring for two wet weather and one dry weather events per year at four sites (upgradient and downgradient sites on the Tuolumne River and Dry Creek). In addition, water column toxicity testing, bioassessment monitoring, dry weather field screening (rock wells and outfalls >24"), and detention basin

monitoring has been conducted as part of the baseline monitoring. These data have been reported in the Discharger's annual reports.

20. During the previous permit term, the Discharger identified aluminum (total), copper (total), lead (total), iron (total), diazinon, Escherichia coli, fecal coliform, pH, total dissolved solids and turbidity as pollutants of concern (POCs) in receiving water and urban water discharges.
21. Based on the monitoring conducted during the previous permit term, the Discharger has now identified turbidity, total dissolved solids, fecal coliform, Escherichia coli, pH, copper, lead, iron, aluminum, and diazinon as POCs.

#### **STORM WATER DISCHARGE TO SHALLOW GROUNDWATER**

22. The Discharger uses approximately 11,000 wells, which drain approximately thirty percent of the city, to dispose of storm water. These disposal wells are lined with rock for structural safety and additional treatment. The wells are known as "rock wells."
23. The rock wells pose a potential threat to the shallow groundwater. The Discharger was required by its previous permit to address this threat through a monitoring program, new development program, public education and outreach program and through the illicit discharges program element. An Assessment Plan was submitted in February 2003 to address the rock well assessment. Monitoring of the groundwater and vadose zone was conducted to evaluate the effectiveness of BMPs and the impact of the discharge on shallow groundwater. The assessment program is complex and additional investigation is necessary to address pollution concerns. These Waste Discharge Requirements address this threat by requiring the Discharger to continue to implement rock well monitoring and shallow groundwater monitoring as outlined in the attached Provisions and Monitoring and Reporting Program.
24. The MRP describes monitoring which is required to evaluate the effectiveness of BMPs and the impact of the discharge on shallow groundwater. Modesto has been coordinating their efforts with the US Geological Survey (USGS) to conduct groundwater monitoring. Additional efforts to expedite the process are necessary and required by provisions in these Waste Discharge Requirements.
25. The USGS under the National Water Quality Assessment Program has been developing a comprehensive plan for groundwater monitoring (including shallow groundwater) in the City of Modesto. USGS has implemented a groundwater monitoring program that will take several years to reach any conclusions. Based on current information the USGS assessment program will need to be supplemented by additional work to determine if the Modesto rock wells have any adverse impact to groundwaters.
26. Storm water runoff may contain wastes. These wastes may be in the form of suspended particles of soil or dissolved pollutants derived from concrete washout, fertilizers, pesticides, metals or any other pollutants from construction, commercial,

municipal, or industrial activities. Any person discharging waste or proposing to discharge waste that could affect the quality of the waters of the state must file a ROWD (California Water Code (CWC) § 13260(a)(1)). Any person operating an injection well must file a ROWD. (CWC § 13260(a)(3).) The Regional Water Board shall prescribe requirements that implement the Basin Plan, take into consideration the beneficial uses to be protected and the water quality reasonably required for that purpose (CWC § 13263).

27. The Discharger's publicly-owned rock wells are Class 5 injection wells under the U.S. EPA's Underground Injection Control program. The U.S. EPA does not provide regulation of these wells beyond registration.
28. Due to the discharge of storm water to shallow groundwater through rock wells and the large number of these wells operated by the City of Modesto, this discharge represents a potential threat to groundwater quality. It is the intent of these requirements to quantify the magnitude of this threat, determine if historic discharge to groundwater has impacted groundwater and to minimize the discharge of pollutants to groundwater. Privately-owned rock wells (a.k.a. spin-out or backhole wells) within the Modesto urbanized area are not regulated as storm water discharges as part of this Order, because they are not part of the MS4 regulated by this Order. However, if the groundwater assessment determines that other rock wells (including individual rock wells, or rock well systems smaller than the Discharger's 11,000 wells) pose a threat to groundwater, such wells will be subject to requirements for the protection of shallow groundwater.

Deleted: publicly-owned

#### STATUTORY AND REGULATORY CONSIDERATIONS

29. The CWA authorizes the 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 an NPDES program. The Porter-Cologne Water Quality Control Act authorizes the State Water Resource Control Board (State Water Board), through the Regional Water Boards, to regulate and control the discharge of pollutants into waters of the State. The State Water Board entered into a Memorandum of Agreement with the U.S. EPA, on September 22, 1989, to administer the NPDES Program governing discharges to waters of the United States.
30. This Order does not constitute an unfunded local government mandate subject to subvention under Article XIII B, Section (6) of the California Constitution for several reasons, including, but not limited to, the following. First, this Order implements federally mandated requirements under federal Clean Water Act section 402, subdivision (p)(3)(B). (33 U.S.C. § 1342(p)(3)(B).) This includes federal requirements to effectively prohibit non-storm water discharges, to reduce the discharge of pollutants to the maximum extent practicable, and to include such other provisions as the Administrator or the State determines appropriate for the control of such pollutants. Federal cases have held these provisions require the development of permits and permit provisions on a case-by-case basis to satisfy federal requirements. (*Natural Resources Defense*

*Council, Inc. v. U.S. E.P.A.* (9th Cir. 1992) 966 F.2d 1292, 1308, fn. 17.) The authority exercised under this Order is not reserved state authority under the Clean Water Act's savings clause (*cf. Burbank v. State Water Resources Control Bd.* (2005) 35 Cal.4th 613, 627-628 [relying on 33 U.S.C. § 1370, which allows a state to develop requirements which are not "less stringent" than federal requirements]), but instead, is part of a federal mandate to develop pollutant reduction requirements for municipal separate storm sewer systems. To this extent, it is entirely federal authority that forms the legal basis to establish the permit provisions. (See, *City of Rancho Cucamonga v. Regional Water Quality Control Bd.-Santa Ana Region* (2006) 135 Cal.App.4th 1377, 1389; *Building Industry Ass'n of San Diego County v. State Water Resources Control Bd.* (2004) 124 Cal.App.4th 866, 882-883.)

Likewise, the provisions of this Order to implement total maximum daily loads (TMDLs) are federal mandates. The federal Clean Water Act requires TMDLs to be developed for water bodies that do not meet federal water quality standards. (33 U.S.C. § 1313(d).) Once the U.S. Environmental Protection Agency or a state develops a TMDL, federal law requires that permits must contain effluent limitations consistent with the assumptions of any applicable wasteload allocation. (40 C.F.R. § 122.44(d)(1)(vii)(B).)]

Second, the local agency Discharger's 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 or waste discharge requirements for discharges to underground injection wells. 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, §§ 13260, 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].) As noted above, private dischargers to underground injection wells who cause similar threats to groundwater would be subject to similar regulation.

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 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 Discharger has 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 Discharger has 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 Discharger has 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 agency's 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 agency's responsibility for preventing discharges of waste that can create conditions of pollution or nuisance from conveyances that are within their ownership or control under state law predates the enactment of Article XIII B, Section (6) of the California Constitution.

31. The Water Quality Act of 1987 added Section 402(p) to the 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:
  - a. 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).
  - b. 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).

32. This Order specifies requirements necessary for the Discharger to reduce the discharge of pollutants in urban runoff to MEP.<sup>4</sup> The State Board's Office of Chief Counsel (OCC) has issued a memorandum interpreting the meaning of MEP to include technical feasibility, cost, and benefit derived with the burden being on the municipality to demonstrate compliance with MEP by showing that a BMP is not technically feasible in the locality or that BMP 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 Discharger's storm water programs must continually be assessed and modified to incorporate improved programs, control measures, 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 are 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.
33. This permit is intended to develop, achieve, and implement a timely, comprehensive, cost-effective storm water pollution control program to reduce the discharge of pollutants in storm water to the MEP from the permitted areas in the City of Modesto to the waters of the United States.
34. Section 402(p)(3)(B)(ii) of the CWA requires NPDES permits to effectively prohibit non-storm water discharges into MS4s. Federal Regulations [40 CFR 122.26(d)(2)(iv)(B)(1)] require control programs to prevent illicit discharges to the MS4s. Certain categories of non-storm water discharges or flows are allowed to enter the MS4s provided that the Discharger has not identified such categories as significant sources of pollutants to waters of the United States.
35. The City of Modesto has adopted their own storm water ordinance. The ordinance provides the Discharger the authority to protect and enhance the water quality of watercourses, water bodies, and wetlands in the Modesto Urbanized area in a manner pursuant to and consistent with the CWA and the Porter-Cologne Water Quality Control Act.
36. 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,

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<sup>4</sup> A definition of MEP may be found in Appendix B.

General Industrial Activity Storm Water Permit (GIASP)] and the other for storm water from construction sites [NPDES No. CAS000002, General Construction Activity Storm Water Permit (GCASP)]. The GIASP was reissued on April 17, 1997. The GCASP was reissued on August 19, 1999. In addition, the Regional Water Board has issued General Permit Order No. 5-00-175 for dewatering and other low threat discharges, which authorizes such discharges to the MS4s owned and operated by the Discharger. This Order requires the Discharger to conduct local inspections at industries or construction sites which discharge to its MS4 to assess compliance with City ordinances. Many of these sites are currently covered under State NPDES General Permits. The Discharger, through inspections of these facilities, can bring problems to the attention of Regional Water Board staff who can work cooperatively with the Discharger to implement an effective storm water regulatory program.

37. Federal regulations at 40 CFR 122.26(d)(2)(iv)(A) and 40 CFR 122.26(d)(2)(iv)(C) require that MS4 Dischargers 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. These regulations require that the Discharger establish priorities and procedures for inspection of industrial facilities and priority commercial establishments. This permit, consistent with the U.S. EPA policy, incorporates a cooperative partnership, including the specifications of minimum expectations, between the Regional Water Board and the Discharger for the inspection of industrial facilities and priority commercial establishments to control pollutants in storm water discharges (58 *Fed. Reg.* 61157).
38. When industrial or construction site discharges occur in violation of local permits and ordinances, the Regional Water Board 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 then step in to enforce the applicable statewide General Permit. If the municipality has been negligent in its enforcement efforts in compliance with this order, 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 Discharger for violations of this Order. The Discharger must also provide the first level of enforcement against illegal discharges from other land uses it has authorized, such as commercial and residential developments.
39. This Order shall protect the beneficial uses of receiving waters and ensure compliance with water quality standards. This Order, therefore, includes requirements to the effect that discharges shall not cause or contribute to violations of water quality standards that would cause or create a condition of nuisance, pollution, or water quality impairment in receiving waters. Accordingly, the Regional Water Board is requiring that these requirements must be addressed through the effective implementation of BMPs to reduce pollutants in storm water.
40. 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 Discharger 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.

41. Federal, State, regional or local entities within the Discharger's boundaries, not currently named in this Order, operate storm drain facilities and/or discharge storm water to the storm drains and watercourses covered by this Order. The Discharger may lack legal jurisdiction over these entities under the state and federal authorities. Consequently, the Regional Water Board recognizes that the Discharger should not be held responsible for such facilities and/or discharges. Caltrans is a state agency that is currently designated as one of these entities. On 15 July 1999, the State Board issued a separate NPDES storm water permit to Caltrans, NPDES No. CAS000003 (Order No. 99-06-DWQ). The State Board may consider issuing separate NPDES storm water permits to other federal, state or regional entities operating within the Discharger's jurisdictional boundaries that may not be subject to direct regulation by the Discharger. Federal agencies are not subject to municipal storm water requirements although they may be permitted as industrial dischargers.
42. The Regional Water Board adopted a *Water Quality Control Plan, Fourth Edition, for the Sacramento and San Joaquin River Basins* (hereafter Basin Plan). The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies to achieve water quality objectives for all waters of the Basin. This Order implements the Basin Plan.
43. The City of Modesto discharges storm water into the Tuolumne River and Dry Creek which are tributaries of the San Joaquin River and Delta. The beneficial uses of the Tuolumne River downstream of storm water discharges as identified in Table II-1 of the Basin Plan are municipal, domestic, and agricultural supply; water contact and non-contact recreation; aesthetic enjoyment; and preservation and enhancement of fish, wildlife and other aquatic resources. Dry Creek is a tributary to the Tuolumne River. The Basin Plan does not specifically identify beneficial uses of Dry Creek. However the Plan states; the beneficial uses of any specifically identified water body apply to its tributary streams. Upon review of the flow conditions, habitat values, and beneficial uses of Dry Creek, the Regional Water Board finds that the beneficial uses identified in the Basin Plan for the Tuolumne River are applicable to Dry Creek.
44. The beneficial uses of the underlying ground water beneath the City of Modesto, as identified in the Basin Plan, are municipal and domestic water supply, industrial service, industrial process, and agricultural supply.
45. 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)]<sup>5</sup>

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<sup>5</sup> 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).

Section 402(p)(3)(B)(iii)<sup>6</sup>. In addition, the California Superior Court ruled; “*Water quality-based effluent limitations are not required for municipal Stormwater discharges [33 USC §1342(p)(3)(B)] and [40 CFR §122.44(k)(3)]. For municipal stormwater discharges, the Permits must contain best management practices (BMPs), which reduce pollutants to the maximum extent practicable [33 USC §1342(p)(3)(B)]. These Permits do contain these through the Stormwater Management Plan which is incorporated into the Permits by reference.*” (*San Francisco Baykeeper vs. Regional Water Quality Control Board, San Francisco Bay Region, Case No. 500527, 14 November 2003*). Therefore, the effluent limitations in this Order are narrative, and include the requirement to reduce pollutants in storm water discharges to the MEP. In lieu of numeric effluent limitations, this Order requires the implementation of BMPs identified in the Discharger’s 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 Discharger’s SWMP and its schedules, an established maintenance program with enforcement procedures, constitutes compliance with the MEP standard.

46. The State Water Board convened a Storm Water Panel (Panel) of experts to address the issue of numeric effluent limits<sup>7</sup>. The Panel concluded that it is not feasible at this time to set enforceable numeric effluent criteria for storm water and non-storm water discharges from MS4s.
47. 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.
48. 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,<sup>8</sup> and (b) The application of pesticides to control pests that are present over

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<sup>6</sup> 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.”

<sup>7</sup> 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.

<sup>8</sup> Water Quality Order No. 2004-0008-DWQ, Statewide General National Pollutant Discharge Elimination System Permit for Discharges of Aquatic Pesticides to Surface Waters of the United States for Vector Control, General Permit No. CAG990004

waters of the United States, including near such waters,<sup>9</sup> that results in a portion of the pesticides being deposited to waters of the United States (40 CFR 122.3(h)).

49. On 17 June 1999, the State Water Board adopted Order No. WQ 99-05, a precedent setting-decision, which identifies acceptable receiving water limitations language to be included in municipal storm water permits issued by the State and Regional Water Boards. The receiving water limitations included herein are consistent with the State Board Order, U.S. EPA policy, and the U.S. Court of Appeals decision in, *Defenders of Wildlife v. Browner* (Ninth Cir, 1999). The State Board's OCC has determined that the federal court decision did not conflict with SBO 99-05 (memorandum dated October 14, 1999).
50. Federal regulations in 40 CFR 122.42(c)(7) require the Discharger to submit an annual report that identifies water quality improvements or degradation.
51. 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 21000 et seq.) in accordance with Section 13389 of the California Water Code [and CEQA Guideline 15301 \(14 Cal. Code of Regs. § 15301\)](#).
52. This Order serves as an NPDES permit pursuant to Section 402 of the CWA, and amendments thereto, and shall take effect fifty days from the date of hearing, provided U.S. EPA has no objections.
53. 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**

54. The overall goals of a SWMP 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 (as defined in Finding 32 of this Order), 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;

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<sup>9</sup>Water Quality Order No. 2004-0008-DWQ, Statewide General National Pollutant Discharge Elimination System Permit for Discharges of Aquatic Pesticides for Aquatic Weed Control in Waters of the United States, General Permit No. CAG990005

- 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.
55. Federal regulation 40 CFR 122.26(d)(2)(iv) requires the Discharger to submit a SWMP to reduce the discharge of pollutants in storm water to the MEP, and to effectively prohibit non-storm water discharges into municipal storm drain systems within the Discharger's jurisdiction during the five-year duration of the permit. During the third term permit period, the Discharger 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 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.
56. This Order requires evaluation of existing water quality impacts from urban storm water discharges, and the implementation and evaluation of the SWMP to reduce the discharge of pollutants in storm water runoff to the MEP and to improve water quality and protect beneficial uses. This Order requires implementation of the SWMP and its components to reduce pollutant loads from industrial and construction sites, new developments and existing urbanized areas. Additionally, this Order requires evaluation of the effectiveness of the SWMP in reducing the discharge of pollutants, improving water quality and protecting beneficial uses.
57. In compliance with the second term Permit, the Discharger submitted a Report of Waste Discharge (ROWD) on 2 April 2007, as required by the previous Order. The ROWD provides the framework for the SWMP. The objectives of the SWMP are to:  
1) effectively eliminate illicit discharges to the storm drain system; 2) reduce the discharge of pollutants in storm water discharges to the MEP; and 3) protect groundwater and surface water resources.
58. This Order requires the Discharger to submit a revised SWMP by **13 December 2008** (or 6 months after the adoption of this permit, whichever is later). The SWMP fulfills the Regional Water Board's permit application requirements subject to the condition that it will be improved and revised in accordance with the provisions of this Order. The SWMP describes the framework for management of storm water discharges during the term of this Order. The SWMP also describes the goals and objectives; legal authorities; source identification process; funding sources; fiscal analysis; assessment controls; BMP evaluation and improvement process effectiveness assessment strategy, details pertaining to water quality based programs (e.g., pesticides), sediment toxicity and bioassessment; and monitoring plan of the Discharger's storm water management program. The SWMP includes program elements and control measures that the Discharger 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 the Discharger's jurisdiction. The Discharger's SWMP is a site-specific modification of the existing Storm Water Management Program required under the previous MS4 permit Order No. R5-2002-0182. 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.

59. The SWMP outlined in the ROWD and the additional and/or revised provisions contained in this Order emphasize pollution prevention through the following program elements:
- a. Program Management
    - Legal Authority
    - Fiscal Resources
  - b. Program Elements
    - Construction Program
    - Industrial and Commercial Businesses Program
    - Municipal Operations Program
    - Illicit Discharges and Illegal Connections Program
    - Public Education and Public Outreach Program
    - Planning and Land Development Program
  - c. Baseline Monitoring
    - Urban Discharge Monitoring
    - Receiving Water Monitoring
    - Urban and Water Column Toxicity Monitoring
    - Dry Weather Characterization
  - d. Water Quality Based Programs
    - Pesticide Plan
  - e. Sediment Toxicity and Bioassessment Monitoring
  - f. Special Studies
    - Targeted Pollutant Reduction Program
    - Detention Basin Monitoring
    - Rock Well and Groundwater Monitoring
    - Peak Impact Discharge Study
    - Treatment Feasibility Study
    - BMP Effectiveness Studies
  - g. Program Effectiveness Assessment and Reporting

The SWMP defines the scope of each element, identifies responsible City of Modesto staff and estimates costs, on an annual basis, for the five-year period from 2008 to 2013.

60. This Order includes a Monitoring Program that incorporates analytical Minimum Levels (MLs) established under the State 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.
61. The Discharger's proposed SWMP identifies several Program Elements, which contain control measures that identify the specific BMPs that the Discharger will implement to reduce the discharge of pollutants from its MS4 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.
62. Antidegradation Policy: Section 131.12 of 40 CFR requires that State water quality standards include an antidegradation policy consistent with the federal policy. The State Water Board established California's antidegradation policy in State Water Board Resolution 68-16. Resolution 68-16 is consistent with the federal antidegradation policy, where the federal policy applies under federal law. Resolution 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional Water Board's Basin Plan implements, and incorporates by reference, both the State and federal antidegradation policies. As discussed in detail in the Fact Sheet, the discharge is consistent with the antidegradation provision of 40 CFR section 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 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 Modesto to accommodate growth. The Regional Water Board does not have the jurisdiction to control growth in the City of Modesto, but is required to assure that the receiving waters are adequately protected as a result of urban discharges. This 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 to implement best management practices and reduce pollutants to the MEP will assure that a pollution or nuisance will not occur and that the highest water quality consistent with maximum benefit to the people of the State will be maintained. Due to the high level of source and treatment control measures to prevent and reduce discharges to surface waters, the proposed order will result in maintenance of existing in-stream uses.

63. The SWMP and modifications or revisions to the SWMP that are approved pursuant to this Order, are an integral and enforceable component of this Order.

#### **DEVELOPMENT STANDARDS**

64. Performance standards include implementation of recommended BMPs (source and treatment controls) for new development and redevelopment projects as required by local development standards and included in applicable standard specifications, design and procedures, and guidance documents (hereafter collectively referred to as Development Standards). The Discharger's Development Standards will be revised in accordance with the requirements of this Order.
65. 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 redevelopments by the private sector. The State Board recognized that the decision includes significant legal or policy determinations that are likely to recur. (Gov. Code § 11425.60.) The State Water Board's Order requires that the Regional Water Board's MS4 permits must be consistent with applicable portions of the State Water Board's decision and include Development Standards.
66. Federal Regulations 40 CFR 131.10(a) prohibit 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.

Deleted:

67. 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 will be addressed in the revised Development Standards for new developments and significant redevelopments.
68. 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 must be addressed in the revised Development Standards for new developments and significant redevelopments.
69. 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)].
70. 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 of impervious area, or (b) a projected Average Daily Traffic (ADT) of 100 or more vehicles per day. These are appropriate thresholds since vehicular development size and volume of traffic are good indicators of potential impacts of urban runoff from RGOs on receiving waters.

71. 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.
72. In March 1997, the California Storm Water Quality Task Force (SWQTF) published *Best Management Practice Guide – Retail Gasoline Outlets*.
73. 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.
74. The Discharger is 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.

#### **IMPAIRED WATER BODIES**

75. 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.
76. 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, Dischargers 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.

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

<b>Waterbody</b>	<b>Reach</b>	<b>Estimated Size affected</b>	<b>Pollutant/Stressor(s)</b>
San Joaquin River	Tuolumne River to Stanislaus River	8.4 miles	Boron DDT Electrical Conductivity Group A Pesticides Mercury Diazinon Chlorpyrifos Selenium Unknown Toxicity
San Joaquin River	Stanislaus River to Delta Boundary	3 miles	Boron DDT Electrical Conductivity Group A Pesticides Mercury Diazinon Chlorpyrifos Selenium Toxaphene Unknown Toxicity
Tuolumne River, Lower	Don Pedro Reservoir to San Joaquin River	60 miles	Diazinon Group A Pesticides Unknown Toxicity

The Basin Plan includes control programs for boron, electrical conductivity, chlorpyrifos, diazinon and selenium in the San Joaquin River. These control programs include the TMDL waste load allocations applicable to this discharger. This Order is consistent with the Basin Plan.

78. The Basin Plan includes TMDL waste load allocations and an implementation program to address the diazinon and chlorpyrifos impairment in the San Joaquin River Basin. This Order includes provisions consistent with the TMDL waste load allocations and the Basin Plan implementation program.

- a. Dischargers of diazinon and chlorpyrifos to the San Joaquin River are required to submit a management plan (Pesticide Plan) that describes actions that will be taken to reduce diazinon and chlorpyrifos discharges and meet the applicable allocations. Dischargers must ensure that measures that are implemented to reduce discharges of diazinon and chlorpyrifos do not lead to an increase in the

- discharge of other pesticides to levels that cause or contribute to violations of applicable water quality objectives.
- b. The approved Pesticide Plan and any modifications to it, as proposed in the SWMP, meet the requirements for a management plan as described in the Basin Plan.
  - c. 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 City's discharge to the non-attainment of water quality standards in the 303(d) listed waters.
  - d. The continued monitoring of diazinon and chlorpyrifos and any replacement products is needed to determine the significance of the Discharger's contribution of pesticide levels in 303(d) listed waters. Monitoring is also needed to determine the effectiveness of the phase-out of urban uses of diazinon and chlorpyrifos and to assess whether water quality objectives are met.
  - e. 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.
79. 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).<sup>10</sup> 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).<sup>11</sup> 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.

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<sup>10</sup> 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.

<sup>11</sup> 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.

80. Monitoring and Reporting Program Order No. R5-2002-0182 required the Discharger 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. Collected data has not been fully evaluated to provide an 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.
81. 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**

82. The Regional Water Board has notified the Discharger 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.
83. The Regional Water Board has considered the information in the attached Information Sheet in developing the Findings of this Order. The attached Information Sheet is part of this Order.
84. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.

**IT IS HEREBY ORDERED** that Order No. R5-2002-0182 is rescinded, and that the Discharger, its agents, successors and assigns, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted there under, 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 California Water Code § 13050), in waters of the state are prohibited.
2. Discharges from MS4s that cause or contribute to exceedances of receiving water quality standards for waters of the State are prohibited.
3. Discharges from the MS4s containing pollutants that have not been reduced to the MEP are prohibited.

**B. Discharge Prohibitions – Non-Storm Water Discharges**

1. The Discharger shall effectively prohibit non-storm water discharges into its MS4 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 an MS4 if such categories of discharges are identified by the Discharger or Regional Water Board as a significant source of pollutants to waters of the United States:
  - a. Diverted stream flows;
  - b. Rising ground waters;
  - c. Uncontaminated ground water infiltration [as defined at 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. Planned and unplanned discharges from potable water sources;
  - n. Irrigation water;
  - o. Individual residential car washing;
  - p. De-chlorinated swimming pool discharges;
  - q. Street wash water; and
  - r. Lawn watering.
3. When a discharge category above is identified as a significant source of pollutants to waters of the United States, the Discharger shall either:
  - a. Prohibit the discharge category from entering its MS4; 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 which the Discharger elects not to prohibit; and
  - ii. The BMP(s) for each discharge category listed above which the Discharger will implement, or require the responsible party (ies) to implement, to prevent or reduce pollutants to the MEP.

In addition, the Storm Water Management Plan (SWMP) should be updated to identify the non-storm water discharge as a pollutant and address the actions taken to prevent or reduce the pollutant from entering the MS4 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, the Discharger should coordinate with other agencies and develop a response plan to minimize impacts of non-emergency 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 Discharger to be significant sources of pollutants to waters of the United States. The response plan and BMPs shall be updated as needed and incorporated into the SWMP.
- 5. The Discharger shall examine all dry weather analytical monitoring results collected in accordance with the Monitoring 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 the source of pollutants. Non-prohibited discharges listed above containing significant quantities of 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 these limitations 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. The discharge shall not cause the following in the receiving water:
  - 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, wax, 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 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 units.
  - 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 responses in human, plant, animal, or aquatic life; or that bioaccumulate in aquatic resources at levels which are harmful to human health.
  - n. In waters designated for contact recreation (REC-1), the fecal coliform concentration based on a minimum of not less than five samples for any 30-day period shall not exceed a geometric mean of 200 MPN/100 ml, nor shall more than ten percent of the total number of samples taken during any 30-day period exceed 400 MPN/100 ml.
  - o. Violation of any applicable water quality standard for receiving waters adopted by the Regional Water Board or the State 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. If different applicable water quality standards are adopted after the date of adoption of this Order, the Regional Water Board may revise and modify this Order as appropriate.
3. The Discharger 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 Discharger shall assure compliance with Discharge Prohibition A.2 and Receiving Water Limitations C.1 and C.2 by complying with the following procedure:

- a. The Discharger shall develop a process, identified in their SWMP for reporting discharges that cause or contribute to an exceedance of applicable water quality standards. The process shall establish a tiered notification, one for discharges that significantly exceed the normal range of runoff quality and one for discharges that are within the range of typical runoff quality. In the former case the Discharger shall notify the Regional Water Board within **48 hours** and conduct follow-up investigation to identify the possible cause of the exceedance. A report of the follow-up investigation shall be submitted to the Regional Water Board Executive Officer within **30 days** of the determination of the exceedance. For dischargers in the second tier, the Discharger shall submit a Report of Water Quality Exceedances (RWQE) 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. The Reports of Water Quality Exceedance shall be incorporated in the Annual Report. 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 Executive Officer may require modifications to the RWQE.
- b. Within **30 days** following approval of the RWQE by the Executive Officer, the Discharger 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; and
- c. The Discharger shall implement the revised SWMP and monitoring program in accordance with the approved schedule after Regional Water Board adoption or Executive Officer approval of the revised SWMP.

So long as the Discharger has complied with the procedures set forth above and is implementing the revised SWMP, the Discharger does 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, the Discharger 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 Discharger in an efficient and cost-effective manner;
- c. Participate in intra-agency coordination (e.g. Fire Department, Building and Safety, 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
    - a) Administrative Costs
  - ii. Program Implementation – Where information is available, provide an estimated percent breakdown of expenditure for the following categories:
    - a) Illicit Discharges and Illegal Connections
    - b) Public Outreach and Public Education
    - c) Construction (including inspections activities)
    - d) Industrial and Commercial Businesses (including inspection activities)
    - e) Planning and Land Development
    - f) Municipal Operations
      - i. Maintenance of Structural BMPs and Treatment Control BMPs
      - ii. Maintenance of drain system
      - iii. Catch basin cleanup
      - iv. Trash collection and street cleaning
      - v. Corporation yard
    - g) Capital costs
  - iii. Water Quality-based Program
  - iv. Monitoring Program
  - v. Miscellaneous Expenditures
  - vi. In addition to the Budget Summary, the Discharger shall report any supplemental dedicated budgets for the same categories.

**STORM WATER MANAGEMENT PROGRAM**

2. Upon adoption of this Order, the discharger shall modify its SWMP to address the requirements of this Order and submit the revised SWMP by **13 December 2008** (or within six months after the Order is adopted, whichever is later) for public review, comment and Regional Water Board's approval. The Discharger shall address these comments and modify, if necessary, the SWMP for submittal to the Regional Water Board for final approval.

The SWMP shall include a description of new or revised BMPs that address the requirements of this Order. The SWMP shall also include performance standards or other assessment tools for verifying that the MEP standard has been achieved.

The discharger shall incorporate newly developed or updated BMPs and assessment tools/Performance Standards acceptable to the Executive Officer, into 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. The Discharger shall develop and implement a SWMP that contains the following elements:

- a. Program Management
  - i. Legal Authority
  - ii. Fiscal Resources
- b. Program Elements
  - i. Construction
  - ii. Industrial and Commercial Businesses
  - iii. Municipal Operations
  - iv. Illicit Discharges and Illegal Connections
  - v. Public Outreach and Public Education
  - vi. Planning and Land Development (Development Standards)
  - vii. Monitoring Program
  - viii. Water Quality Based Program
  - ix. Program Effectiveness Assessment and Reporting

#### **PROGRAM MANAGEMENT**

3. **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 Discharger shall submit an Annual Work Plan by **1 April** of each year starting April 2009. The Annual Work Plan shall provide the Discharger's proposed activities and any proposed modifications to the SWMP for the upcoming year beginning 1 July of current year and ending 30 June the following year. The work plan must specifically identify any recommended changes to the program from the

previous year's work plan.

- b. **Annual Report:** The Discharger shall submit an Annual Report by **1 September** of each year. The Annual Report shall document the status of the SWMP and the activities during the previous fiscal year, including the results of a qualitative and quantitative field level assessment of activities implemented by the Discharger, 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 Work Plan. The Annual Report shall include a program effectiveness assessment and recommended modifications for each Program Element/Control Measure. Each Annual Report shall build upon the previous year's efforts. In each Annual Report, the Discharger may propose pertinent updates, improvements, or revisions to the SWMP, which shall be complied with under this Order unless disapproved by the Executive Officer or acted upon in accordance with this Order. Annual Reports, including appendices and monitoring results, shall be made available to the public upon request.
- c. **SWMP Implementation:** The Discharger shall continue implementation of their current SWMP until such time that the SWMP has been modified to be consistent with this Order and approved by the Regional Water Board. Once approved, the Discharger shall implement the modified SWMP consistent with the schedule specified within this Order. The SWMP, with modifications, revisions, or amendments as may be approved by the Executive Officer or Regional Water Board, is an enforceable component of this Order.
- d. **SWMP Modification:** The Discharger's 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 revision of the certain components of the Discharger's SWMP. Proposed SWMP revisions will be part of the annual review process and incorporated in the Annual Report. In addition, the Discharger shall revise its SWMP to comply with regional or watershed specific requirements, and/or waste load allocations developed and approved pursuant to the process for the degradation 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. **Departmental Coordination:** Individual departments/divisions within the Discharger's organization that participates in storm water pollution

prevention related activities shall collaborate with the storm water compliance department/division. The Discharger shall specifically identify all departments within the Discharger's 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.

4. **Legal Authority:** Discharger shall review, revise, maintain, and enforce adequate legal authority to control pollutant discharges from its MS4 through ordinance, statute, permit, contract or similar means. This legal authority must, at a minimum, authorize the discharger to:
  - a. Control the contribution of pollutants in discharges of runoff associated with industrial and construction activity to its MS4. 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 MS4;
  - d. Control the discharge of spills, dumping, or disposal of materials other than storm water to its MS4;
  - e. Use enforcement mechanisms to require compliance with storm water ordinances, permits, contracts, or orders;
  - f. Control the contribution of pollutants from one portion of the MS4 to another portion of the MS4 through interagency agreements among the Discharger and other public entities discharging to the MS4 such as Caltrans;
  - g. Carry out all inspections, surveillance, and monitoring necessary to determine compliance and noncompliance with local ordinances and permits, including the prohibition of illicit discharges to the MS4;
  - h. Require the use of BMPs to prevent or reduce the discharge of pollutants from the MS4 to the MEP; and

- i. Require that Treatment Control BMPs be properly operated and maintained to prevent the breeding of vectors.
5. The Discharger shall amend within **one year** after adoption of the SWMP, a specific storm water and urban runoff ordinance to enforce all requirements of this Order.
6. The Discharger shall provide to the Regional Water Board a statement certified by its chief legal counsel that the discharger has adequate legal authority to implement and enforce each of the requirements contained in 40 CFR 122.26(d)(2)(i)(A-F) and this Order, including any modifications thereto in effect when the certified statement is provided. This statement shall be included in the revised SWMP, which shall describe the following:
  - a. Citation of urban-runoff-related ordinances 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.
7. **Fiscal Analysis:** The Discharger 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, evaluate the expenditures (such as capital, operation and maintenance, education, and administrative expenditures) necessary to accomplish the activities outlined in SWMP. Such analysis 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**

8. **Construction Program**
  - a. The objectives of the Construction Program are to:

- i. Provide adequate legal authority to control pollutants 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 Discharger requirements;
  - iii. Require BMPs to control sediment and pollutants from construction sites;
  - 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. Pursue 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.
  - ix. Implement SWPPPs that requires an effective combination of erosion and sediment control BMPs to reduce pollutants from City-owned construction projects.
- b. The Discharger shall update and continue to implement the Construction Component of its SWMP to reduce pollutants in runoff from construction sites during all construction phases to the MEP. At a minimum the Construction Program shall address the objectives listed above and include the following control measures:
- i. Construction Program Legal Authority
  - ii. Plan Review and Approval Process
  - iii. Construction Projects Database
  - iv. Pollution Prevention at Capital Improvement Projects
  - v. Construction Site BMP Implementation and Inspections
  - vi. Enforcement Action for Construction Sites
  - vii. Training Focused on Construction Activities
  - viii. New Development and Construction Requirements for Municipal Capital Improvement Projects

- ix. Effectiveness Assessment Strategy
- c. The Discharger 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 all of these construction sites:
  - i. Sediments generated on the project site shall be retained using adequate Source Control or Structural 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 all projects, require (1) proof that a Waste Discharger Identification (WDID) Number has been obtained due to the filing of a Notice of Intent (NOI) for General Construction Storm Water permit coverage, and (2) submittal of a Storm Water Pollution Prevention Plan (SWPPP) to the permitting agency that contains, at a minimum, the following:
    - a) A vicinity map showing nearby roadways, the construction site perimeter, and the geographic features and general topography surrounding the site;
    - b) The project architect, engineer of record, or authorized qualified designee, must sign the following statement on the SWPPP stating “appropriate BMPs have been selected and that the project owner and contractor are aware that the selected BMPs must be installed, monitored, and maintained to ensure their effectiveness; 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)”;

- c) A description of BMPs to address contractor activities that generate pollutants including, at a minimum, vehicle washing, equipment maintenance, and waste handling;
- d) A detailed, site-specific listing of the potential sources of storm water pollution;
- 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 source and/or treatment control BMPs to be employed at the site; and
- f) The name and telephone number of the qualified person responsible for implementing the SWPPP.

d. Inspections

The Discharger 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 the Regional Water Board issues a notice of termination for coverage under the General Construction Permit. The inspections shall occur at a frequency determined to be effective by the Discharger and shall include a higher inspection frequency during the winter months (wet season) than during the summer months (dry season).

The Discharger 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 Discharger observes chronic violations of their respective storm water ordinances at a given construction site, the Discharger shall notify the Regional Water Board. The Discharger shall use its legal authority to promptly and effectively enforce its storm water ordinance to correct any violations observed during inspections.

9. **Industrial/Commercial Business Program:**

- a. The objectives of the Industrial/Commercial Business Program are to:
  - i. Provide adequate legal authority to control pollutants from industrial and commercial facilities;
  - ii. Develop and maintain an inventory of industrial and commercial facilities within the Discharger'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 with local ordinances;
  - v. Implement a progressive enforcement policy to ensure that adequate enforcement is conducted and coordinate with the Regional Water Board regarding referrals of potential non-filers and inspections;
  - 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. The Discharger shall update and continue to implement the Industrial/Commercial Component of its SWMP to reduce pollutants in runoff from industrial/commercial sites to the MEP. At a minimum, the Industrial/Commercial Program shall address the objectives listed above, as well as the following control measures:
- i. Facility Inventory
  - ii. Prioritization and Inspection
  - iii. Industrial/Commercial Outreach
  - iv. Enforcement
  - v. Training
  - vi. Effectiveness Assessment
- c. The Discharger 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.

10. **Municipal Operations 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 City-owned construction sites;
  - 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 Discharger-owned property such as park sites, landscaped medians, and golf courses;
  - v. Promote the use of Integrated Pest Management (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;
  - viii. Promote the use of the 24-hour public reporting hotline number;
  - ix. Maintain and inspect retention/detention basins and pump stations;
  - x. Conduct street sweeping activities;
  - xi. Clean and inspect Discharger-owned parking facilities to minimize the build-up and discharge of pollutants to the storm drain system;
  - xii. Provide regular internal training on applicable components of the SWMP; and
  - xiii. Conduct an assessment as a part of the annual reporting process, determine the effectiveness of the Program Element and identify any necessary modifications.

- xiv. Implement plan to minimize environmental damage during emergency situations.
- b. The Discharger shall update and continue to implement a Municipal Program in its SWMP to effectively prohibit non-storm water discharges and prevent or reduce pollutants in runoff from all municipal land use areas, facilities, and activities to the MEP. At a minimum, the Municipal

Program shall address the objectives listed above and include the following control measures:

- i. Sanitary Sewer Overflow and Spill Response
- ii. Pollution Prevention at Discharger Facilities
- iii. Landscape and Pest Management
- iv. Storm Drain System Maintenance (including rock wells)
- v. Street Cleaning and Maintenance
- vi. Parking Facilities Maintenance
- vii. Detention Basin Maintenance
- viii. Emergency Procedures
- ix. Non-emergency Fire Fighting Flows
- x. Training
- xi. Effectiveness Assessment

**11. 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 exceedance of action levels identified in the SWMP and field crew inspections;
  - iii. Upon identification of an illegal connection, investigate and eliminate the connection through a variety of mechanisms including, but not limited to, permitting or plugging the connection;
  - iv. Upon identification of an illicit discharge, investigate the discharge and conduct any necessary follow up actions to mitigate the impacts of the discharge;
  - v. Conduct an assessment as a part of the annual reporting process; determine the effectiveness of the Program Element and identify

any necessary modifications.

- b. The Discharger shall update and continue to implement an Illicit Discharge Detection and Elimination Program component of the SWMP to actively seek and eliminate illicit discharges and connections. At a minimum, the Illicit Discharge Detection and Elimination Component shall address the objectives listed above and include the following control measures:
  - i. Detection of Illicit Discharges and Illegal Connections
  - ii. Illegal Connection Identification and Elimination
  - iii. Investigation/Inspection and Follow-up
  - iv. Enforcement of Local Codes and Ordinances
  - v. Training
  - vi. Effectiveness Assessment

12. **Public Outreach and Public Education Program (Collectively Public Outreach Program):**

- a. The Discharger 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 to be 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. The Discharger shall update and continue to implement the Public Outreach Component of its SWMP to educate the public and encourage their participation in the implementation of the SWMP. At a minimum, the Public Outreach Program shall address the objectives listed above and include the following control measures:
  - i. Public Participation
  - ii. 24-Hour Hotline
  - iii. Public Outreach Implementation
  - iv. Public School Education
  - v. Business Outreach
  - vi. Construction Outreach
  - vii. Effectiveness Assessment
- c. The Discharger 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**

- 13. The objectives of the Planning and Land Development Program are as follows:
  - a. Incorporate water quality and watershed protection principles into the Discharger'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.
- 14. The Discharger shall update and continue to implement the Planning and Land Development Component of its SWMP to minimize the short and long-term impacts on receiving water quality from new development and redevelopment. At a minimum the Planning and Land Development Program shall address the

objectives listed above and include the following control measures:

- a. Incorporation of Water Quality Protection Principles into City Procedures and Policies
- b. New/Revised Development Standards
- c. Plan Review Sign-Off
- d. Maintenance Agreement and Transfer
- e. Training
- f. Effectiveness Assessment
- g. New Development Standards for Capital Improvement Projects

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

- a. The Discharger 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 and treatment controls. 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. When developing the LID program, the City shall consider and incorporate all appropriate and applicable LID components and measures that have been successfully and effectively implemented in other municipal areas. Other programs include, but are not limited to, USEPA's "Managing Wet Weather with Green Infrastructure, Action Strategy, 2008" and LID program elements specified in the permits or Storm Water Management Plans of other MS4s throughout the state.
  - c. The Discharger shall revise applicable ordinances/standards/specifications no later than **one year** after the adoption of the SWMP/Development Standards by the Regional Water Board.
16. The Discharger has adopted development standards in the *City of Modesto Guidance Manual for New Development Stormwater Quality Control Measures*, January 2001 and their Standard Specifications. The Development Standards shall be amended/revised in accordance with this Provision and Provision 23 to ensure that the storm water quality and watershed principles, as listed above in

16.a. and b., are integrated.

- a. **Post Development Standards:** The Discharger 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 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 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 greater than 10,000 square feet of impervious surface area; (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 Discharger 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 85<sup>th</sup> 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 85<sup>th</sup> 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 85<sup>th</sup> percentile hourly rainfall intensity multiplied by a factor of two.

- e. **Equivalent Numeric Sizing Criteria** – The Discharger may develop an 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, the Discharger shall identify pollutants and/or activities of concern for each new development or significant redevelopment project. The Discharger 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 of impervious surface area 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, the Discharger 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 and rock wells).
- i. **Regional Storm Water Mitigation** – The Discharger 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.

**17. Maintenance Agreement and Transfer**

The Discharger 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.

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

The Discharger 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 material storage areas, 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 to 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.

19. **General Plan Update**

- a. The Discharger 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. The Discharger 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.

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

- a. The Discharger 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. The Discharger 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. The Discharger shall develop and implement no later than (6 months from this Order's adoption) the following:
  - i. A GIS or other electronic system for tracking projects that have been conditioned for post-construction treatment control BMPs. The electronic system, at a minimum, should contain the following information:
    - a) Municipal Project ID.
    - b) State General Construction Permit WDID No.

- c) Project Acreage.
- d) BMP Type and Description.
- e) BMP Location (coordinates).
- f) Date of Acceptance.
- g) Date of Maintenance Agreement.
- h) Inspection Date and Summary.
- i) Corrective Action.
- j) Date Certificate of Occupancy Issued.

21. **Targeted Employee Training**

The Discharger 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.

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

By **13 June 2008** (or 1 year after the SWMP is adopted, whichever is later), the Discharger shall submit a revised/functionally updated Development Standards [e.g., *Guidance Manual for New Development Stormwater Quality Control Measures*] 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 Modesto Urbanized Area. The guidelines shall encourage the use of low impact development/ hydromodification strategies and be based on the existing site design control measures identified in the existing Development Standards. Prior to approval of the Development Standards, the early implementation of measures likely to be included in the Development Standards shall be encouraged by the Discharger.

**MONITORING PROGRAM**

23. **Monitoring and Reporting Program:** The Discharger shall comply with Monitoring and Reporting Program No. R5-2008-\_\_\_\_, 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.
24. In support of the Water Quality Based Programs, the Discharger 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
- Urban and Water Column Toxicity Monitoring
- Dry Weather Characterization
  
- Sediment Toxicity Monitoring
- Bioassessment Monitoring
  
- Water Quality Based Programs
  - Pesticide Plan
  
- Special Studies
  - Targeted Pollutant Reduction Program
  - Detention Basin Monitoring
  - Rock Well and Groundwater Monitoring
  - Peak Discharge Impact Study
  - Treatment Feasibility Study
  - BMP Effectiveness Studies
  
- Program Effectiveness Assessment

The Discharger shall implement the Water Quality Monitoring program pursuant to the Monitoring and Reporting Program (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 Modesto urbanized area.

25. **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 completed, and the monitoring effort is adapted in consultation with SWAMP's bioassessment workgroup. If applicable, an updated bioassessment monitoring plan shall be included in the SWMP.

The following results and information shall be included in the 2009-2010 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<sup>12</sup>.
- e. Comparison of mean biological and habitat assessment metric values between stations and year-to-year trends;
- f. Electronic data formatted to the California Department of Fish and Game Aquatic Bioassessment Laboratory for inclusion in the Statewide Access Bioassessment Database; and
- g. Copies of all QA/QC documents from laboratories.

### WATER QUALITY BASED CONTROL PROGRAMS

26. The Discharger shall continue or initiate implementation of control programs for pollutants that have been identified to cause or contribute to exceedances of water quality standards and potential impairment of beneficial uses. These control programs shall be incorporated into the Discharger'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, the Discharger shall continue to implement a pesticide toxicity control program (**Pesticide Plan**) that addresses its own use of pesticides, including diazinon and chlorpyrifos, and the use of such pesticides by other sources within its 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 Discharger's municipal operations and promoted through the public outreach program.
    - i. For municipal operations the Discharger shall complete the following efforts:
      - a) Implement pesticide, herbicide, and fertilizer application protocol at park sites, landscaped medians, and golf courses;

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<sup>12</sup> California Stream bioassessment Procedure (Protocol Brief for Biological and Physical/Habitat Assessment in Wadable Streams), California Department of Fish and Game- Aquatic Bioassessment Laboratory, May 1999. Located at [www.dfg.ca.gov/cabw/protocols.html](http://www.dfg.ca.gov/cabw/protocols.html).

- 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 Discharger 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 or non-toxic methods of pest prevention and control, including IPM;
  - b) Conduct periodic surveys of the local or regional sales and use of residential and commercial pest control products potentially found in storm water runoff. The first survey shall be conducted by **13 June 2010** (or two years after adoption of the Order, whichever is later). A second survey shall be conducted by **13 June 2012** (or four years after adoption of the Order, whichever is later). The surveys may be conducted in conjunction with other municipalities in the Central Valley or Bay Area as long as residences and retailers from the Discharger's jurisdiction are included. The proposed survey design and protocols shall be submitted for approval with the Annual Work Plan for the year in which the survey is to be conducted;
  - c) Continue coordination with household hazardous waste collection agencies. The Discharger shall support, enhance, and help publicize programs for proper pesticide disposal; and
  - d) Continue mechanisms to encourage the consideration of pest-resistant landscaping and design features in the design, landscaping, and/or environmental reviews of proposed development projects. Education programs shall target individuals responsible for these reviews and focus on

factors affecting water quality impairment.

- iii. In year 4 of the Permit term the Discharger shall conduct an assessment to determine if urban storm water is causing or contributing to an exceedance of water quality standards for diazinon and chlorpyrifos. If urban storm water is causing or contributing to an exceedance, then the Discharger shall determine the relative contribution of urban storm water runoff to diazinon and chlorpyrifos levels in waters within its jurisdiction that are on the CWA 303(d) list.
- iv. The Discharger 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 Discharger shall also work with the Regional Water Board and other agencies in implementing the control program for pesticides in the Tuolumne River and Dry Creek.

### **SPECIAL STUDIES**

#### **27. Targeted Pollutant Reduction Program**

During the previous permit term, the Discharger identified aluminum (total), copper (total), lead (total), iron (total), diazinon, Escherichia coli, fecal coliform, pH, total dissolved solids and turbidity that exceeded water quality objectives or that the City identified as a pollutant of concern (POC) in receiving water and urban water discharges. The Discharger shall:

a. **POC Identification Report**

Continue to evaluate and prioritize the pollutants in its discharge and determine any new POC. This report shall consider and expand on the previous effort by the Discharger to develop a list of POCs and pollutant of interest (POI). Pollutants shall be prioritized by considering the following: Pollutants listed as causing impairment in the San Joaquin River and Lower Tuolumne River and present in the storm water discharge; Pollutants causing toxicity in urban runoff or local receiving waters; Pollutants identified in urban runoff that may cause or contribute to exceedances of water quality standards in the Central Valley Region Water Quality Control Plan (Basin Plan) and California Toxics Rule (CTR); Issues of significant public or regulatory concern; and controllability of urban runoff pollutants through implementation of available control practices.

b. POC Reduction Report

By the **4<sup>th</sup> year** of this permit term, submit a report identifying POCs and a plan to reduce or eliminate the pollutants from entering surface waters to the MEP. The report shall incorporate work plan(s) for pollutants identified above for the controllable sources of the POCs and evaluate the effectiveness of BMPs currently implemented and/or propose additional BMPs that may be implemented to prevent or reduce the pollutants to the MEP. The evaluation shall consider capital and operational costs, technical feasibility, regulatory limitations, and other considerations

identified by the City. The report shall also identify institutional needs, including policies, procedures and/or ordinances, for addressing the POC.

28. **Rock Well and Groundwater Monitoring**

The Discharger shall update and submit the Rock Well Assessment Plan (RWAP) in the revised SWMP. The purpose of the RWAP is to evaluate pollutant removal effectiveness and potential impacts on groundwater. In the prior permit term, the Discharger monitored two rock well installations at residential sites. The results of the investigation were inconclusive and additional study of the issue is necessary. The amended RWAP shall include a comprehensive plan with an implementation schedule and include, at a minimum, the following:

- a. A monitoring plan, which shall include a sampling and analysis plan. The Monitoring plan shall state the objective of the monitoring effort, site selection process, and proposed sampling plan and schedule. The sampling and analysis plan shall include the following:
  - i. List of constituents to be analyzed based on the City's pollutant of concern analysis.
  - ii. Sampling frequency of at least **two storm events** and **two monitoring events during the dry season**.
  - iii. Representative rock wells based on land use areas for residential, industrial, and commercial (minimum of two for each land use), runoff characteristics, rock well installation, soil conditions, and potential for groundwater impact.
- b. All data shall be provided electronically and be included in the Annual Reports as required in this MRP Order.
- c. Coordination with USGS ongoing National Water Quality Assessment Program and Modesto Irrigation District efforts to characterize sources of pollutants and track groundwater contamination. The Discharger shall coordinate with USGS to combine or complement monitoring efforts to

optimize the rock well assessment.

- d. Schedule for completing the assessment and preparing a final report by year five of the permit term. The final report shall include summary of monitoring data, analysis of vadose zone and groundwater quality, compared to storm water runoff samples (wet and dry weather), and recommendations regarding rock well installation and maintenance for the protection of groundwater quality. Groundwater quality results shall be summarized in the Annual Report in a table format showing the comparison of data to the applicable water quality standards.

Water quality standards are provided by the Regional Water Board at:  
[http://www.waterboards.ca.gov/centralvalley/water\\_issues/water\\_quality\\_standards\\_limits/](http://www.waterboards.ca.gov/centralvalley/water_issues/water_quality_standards_limits/).

29. **Peak Discharge Impact Study**

The Discharger shall continue to conduct a study to determine the extent of erosion of natural stream channels and banks caused by urbanization. If appropriate, the Discharger shall evaluate peak flow control and determine numeric criteria to prevent or minimize erosion of natural stream channels and banks cause by urbanization.<sup>13</sup>

30. **Treatment Feasibility Study**

The Discharger shall submit a report describing the feasibility of diverting dry weather flows to the sanitary sewer system or treatment control BMPs from the positive drainage system, which may impact public health and safety and/or the environment. The Report shall include a watershed based priority list of outfalls for potential diversion or treatment and the feasibility of diverting dry weather flows. The Report shall be submitted as follows:

- a. Within **6 months** after adoption of this permit, submit a work plan to complete this study including details of tasks and a time schedule for completion.
- b. By **year 2** of this permit, submit a list of prioritized outfalls based on flow, concentration of POCs and feasibility of connecting to the sanitary sewer system or directing the dry weather flow to a treatment control facility.
- c. By **year 3** of this permit, submit a feasibility study to connect or treat any or all flows to the sanitary sewer system or treatment control facility.

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<sup>13</sup> Development Standards require the development of numerical criteria for peak flow control in natural drainage systems.

- d. By **year 4**, submit recommendations and an implementation time schedule.

**31. BMP Effectiveness Study**

The Discharger shall conduct or participate with Stockton and Sacramento-area Dischargers in two studies (e.g., low impact development) to evaluate the effectiveness of source or treatment control BMPs. The Discharger may choose to conduct both studies or may choose to contribute to studies by one of the other dischargers. The objective of this study shall include the following:

- a. Monitor the reduction of pollutants of concern in storm water including, but not limited to, pathogen indicators, nutrients, heavy metals, and pesticides from a minimum of one BMP that has been properly installed within the year preceding monitoring. Monitoring shall be continued until the effectiveness of the BMP can be determined;
- b. Evaluate the requirements for and installation and maintenance cost of each BMP; and
- c. Develop recommendations for appropriate BMPs for the reduction of pollutants of concern in storm water in the Modesto Urbanized Area.

**32. Program Effectiveness Assessment**

- a. The Discharger shall assess the effectiveness of their SWMP in their Annual Reports. The assessment shall identify the direct and indirect measurements that the Discharger 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 Discharger shall track the long-term progress of their SWMP towards achieving improvements in receiving water quality.
- c. The Discharger shall use the information gained from the program effectiveness assessment to improve their SWMPs and identify new BMPs, or modification of existing BMPs. This information shall be reported within the Annual Reports consistent with this Order.

- d. Long Term Effectiveness Assessment (LTEA) Strategy: The Discharger shall develop a LTEA strategy, which shall build on the results of the Discharger's Annual Reports and the initial program effectiveness assessments. The LTEA shall be submitted to the Regional Water Board no later than 180 days prior to the permit expiration date (by December 2012) and shall identify how the Discharger will conduct a more comprehensive effectiveness assessment of the storm water program as part of the SWMP. The strategy will address the storm water program in terms of achieving both programmatic goals (raising awareness, changing behavior) and environmental goals (reducing pollutant discharges, improving environmental conditions).

#### ADDITIONAL REQUIREMENTS

33. 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 Board or amendments to the Basin Plan approved by the State 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.
34. The Discharger 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."
35. This Order expires on **13 June 2013**. The Discharger must file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of such date as application for re-issuance of waste discharge requirements. U.S. EPA 40 CFR Part 122 *Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems* states the fourth year annual report may be used as the RWD reapplication package. The reapplication package must identify any proposed changes or improvement to the SWMP, an assessment of the effectiveness of the program, and monitoring activities for the upcoming five year term of the permit, if those proposed changes have not already been submitted pursuant to 40 CFR 122.42 (c).

I, PAMELA C. CREEDON, Executive Officer, do hereby certify 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 **13 June 2008**.

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PAMELA C. CREEDON, Executive Officer