

**State of California
California Regional Water Quality Control Board
Santa Ana Region**

July 10, 2009

ITEM: 12

SUBJECT: First Public Workshop, Renewal of Waste Discharge Requirements, San Bernardino County Flood Control District, the County of San Bernardino, and the Incorporated Cities of San Bernardino County within the Santa Ana Region, Urban Storm Water Runoff Management Program (NPDES No. CAS618036)

BACKGROUND

This is the first public workshop to be held on the re-issuance of the San Bernardino municipal storm water permit. Comments received during this workshop through August 10, 2009, will be considered for future revisions to this draft. The final draft permit will be considered by the Board for adoption after a public hearing during its regularly scheduled Board Meeting on October 16, 2009.

DISCUSSION

See attached Fact Sheet.

RECOMMENDATION

This is an information item and an opportunity for public comment. The Board will not take any action on this item at the July 10, 2009 workshop.

STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SANTA ANA REGION

3737 Main St, Suite 500, Riverside, CA 92501-3348
(951) 782-4130 • Fax (951) 781-6288
<http://www.waterboards.ca.gov/santaana>

TENTATIVE ORDER NO. R8-2009-0036
NPDES NO. CAS618036

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT AND
WASTE DISCHARGE REQUIREMENTS FOR
THE SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT, THE COUNTY OF SAN
BERNARDINO, AND THE INCORPORATED CITIES OF SAN BERNARDINO COUNTY
WITHIN THE SANTA ANA REGION

AREA-WIDE URBAN STORM WATER RUNOFF MANAGEMENT PROGRAM

Tentative

The following Dischargers (Table 1) are subject to waste discharge requirements as set forth in this Order:

Table 1. Municipal Permittees

Principal Permittee	San Bernardino County Flood Control District (SBCFCD)	
Co-Permittees	1. County of San Bernardino	9. City of Loma Linda
	2. City of Big Bear Lake	10. City of Montclair
	3. City of Chino	11. City of Ontario
	4. City of Chino Hills	12. City of Rancho Cucamonga
	5. City of Colton	13. City of Redlands
	6. City of Fontana	14. City of Rialto
	7. City of Grand Terrace	15. City of San Bernardino
	8. City of Highland	16. City of Upland
	17. City of Yucaipa	

The Principal Permittee and the Co-Permittees are collectively referred to as the Permittees or the Dischargers.

Table 2. Administrative Information

This Order was adopted by the Regional Water Quality Control Board on:	XXXX, 2009
This Order shall become effective on:	XXXX, 2009
This Order shall expire on:	XXXX, 2014
The U.S. Environmental Protection Agency (USEPA) and the Regional Water Board have classified this discharge as a major discharge.	
The Discharger shall file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, as application for issuance of new waste discharge requirements no later than 180 days in advance of the Order expiration date.	

IT IS HEREBY ORDERED, that this Order supersedes Order No. R8-2002-012 except for enforcement purposes, and, in Order to meet the provisions contained in division 7 of the Water Code (commencing with section 13000) and regulations adopted thereunder, and the provisions of the federal Clean Water Act (CWA) and regulations and guidelines adopted thereunder, the Dischargers shall comply with the requirements in this Order.

I, Gerard J. Thibeault, Executive Officer, do hereby certify that this Order with all attachments is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on XXXX, 2009.

Gerard J. Thibeault, Executive Officer

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I. FACILITY INFORMATION

- A. Each of the Permittees listed in Table 1, above, owns and/or operates storm water and urban runoff conveyance systems, including flood control facilities. These conveyance systems are commonly referred to as municipal separate storm sewer systems (MS4s¹) or storm drains, through which storm water and urban runoff are discharged into waters of the United States (waters of the U.S.) that are located within the Santa Ana Region. Some of the natural channels, streambeds and other drainage facilities that are generally considered as waters of the U.S. have been converted to flood control facilities. In such cases, where a natural streambed is modified to convey storm water flows, the conveyance system becomes both an MS4 and a water of the U.S. The primary purpose for which these MS4s were constructed was for flood control to minimize threat to public safety and property damage. The MS4s fall into one or more of the following categories: (1) a medium or large MS4 that services a population of greater than 100,000 or 250,000 respectively; or (2) an MS4 which contributes to a violation of a water quality standard; (3) an MS4 which is a significant contributor of pollutants to waters of the United States; or (4) an MS4 owned and/or operated by a small municipality that is interrelated to a medium or large municipality. Urban and storm water runoff from these MS4 systems must be regulated under a National Pollutant Discharge Elimination System (NPDES) permit as per Section 402(p) of the federal Clean Water Act (CWA).
- B. This Order regulates the discharge of pollutants (as defined in Attachment 4, Glossary) in storm water and urban runoff from anthropogenic (generated from non-agricultural human activities) sources from the MS4s that are under the jurisdiction of and/or maintenance responsibility or approval authority of the Permittees. Urban and storm water runoff includes those discharges from residential, commercial, industrial and construction areas within the permitted area and excludes discharges from feedlots, dairies, and farms. The Permittees have jurisdiction over and/or maintenance responsibility for storm water conveyance systems within San Bernardino County. The Permittees lack legal jurisdiction over storm water discharges into their systems from State and federal facilities, e.g., schools and hospitals, utilities and special districts, Native American tribal lands, wastewater management agencies and other point and non-point source discharges otherwise permitted by the Regional Board. The Regional Board recognizes that the Permittees should not be held responsible for such facilities and/or discharges.
- C. Certain activities that generate pollutants present in storm water runoff may be beyond the ability of Permittees to prevent or eliminate. Examples of these include, but are not limited to: emissions from internal combustion engines, brake pad and tire wear, atmospheric deposition, bacteria from wildlife (including feral dogs and cats) and leaching of naturally occurring nutrients and minerals from local soils. This Order is not intended to address background or naturally occurring pollutants or flows.

¹ A MS4 (municipal separate storm sewer system) system is any conveyance or a system of conveyances designed to collect and transport storm water which is not part of a Publicly Owned Treatment Works (i.e., not a combined sewer).

- D. The Permittees serve a population of approximately 1.5 million² (75% of the County population), occupying an area of approximately 620 square miles³. The permitted area is shown on Attachment 1. The Permittees have jurisdiction over and/or maintenance responsibility for storm water conveyance systems within the permitted area.
- E. The Permittees' MS4 systems include an estimated 378 miles of above-ground channels and 485 miles of underground storm drain channels, for a total of 863 miles within the permitted area. Approximately seven percent (7%) of the San Bernardino County area drains into water bodies within this Regional Board's jurisdiction. This Order regulates urban and storm water runoff from areas within the Santa Ana Regional Board's jurisdiction. Approximately 50% of the remaining San Bernardino County drainage areas are within the jurisdiction of the Lahontan Regional Board. Urban and storm water runoff from those areas is regulated by the Lahontan Regional Board. The other 43% is within the jurisdiction of the Colorado River Basin Regional Board. The Colorado River Basin Regional Board regulates urban and storm water runoff from those areas. As indicated above, most of the urbanized areas of San Bernardino County are located within the Santa Ana Regional Board's jurisdiction.

II. FINDINGS

The California Regional Water Quality Control Board, Santa Ana Region (hereinafter the Regional Board) finds that:

A. Background

1. The discharge of storm water and urban runoff from the San Bernardino County areas within the Santa Ana Region are currently regulated under Order No. R8-2002-0012, National Pollutant Discharge Elimination System (NPDES) Permit No. CAS 618036. Order No. R8-2002-0012 expired on April 27, 2007 and was administratively extended in accordance with Title 23, Division 3, Chapter 9, §2235.4 of the California Code of Regulations.
2. The Permittees jointly submitted a Report of Waste Discharge (ROWD) on October 26, 2006, to renew their NPDES permit. To effectively carry out the requirements of this Order, the Permittees have agreed that the San Bernardino County Flood Control District (SBCFCD) will continue as the Principal Permittee and the County and the incorporated cities will continue as the Co-Permittees.
3. The permit renewal application consisted of the ROWD, a proposed revisions to the Municipal Storm Water Management Plan (MSWMP) that includes performance commitments for each program element, letters of intent from each of the eighteen Permittees listed in Table 1, and proposed activities to be conducted during the fourth term permit. The MSWMP incorporated a number of other documents by reference. The ROWD, the letters of intent, the MSWMP and the documents referenced therein are hereby made enforceable elements of this Order. The ROWD included: (a) a summary of accomplishments; (2) discharge characterization;

² Per 2006 Report of Waste Discharge (ROWD).

³ Per ROWD.

(3) program effectiveness analysis; and (4) recommendations for program improvements.

4. This Order, Order No. R8-2009-0036 (hereinafter the Order or the Permit), renews NPDES Permit No. CAS618036 that was first issued on October 19, 1990 (Order No. 90-136, first term permit) and renewed on March 8, 1996 (Order No. 96-32, second term permit) and October 25, 2002 (Order No. R8-2002-0012, third term permit). Order No. R8-2009-0036 is the fourth term permit. The fourth term permit outlines additional steps for an effective, risk-based, storm water management program and specifies requirements to meet applicable water quality standards. This Order requires the Permittees to investigate sources of pollutants in storm water runoff where activities that the Permittees conduct, approve, regulate or authorize through their licensing and permitting processes, have a reasonable potential to exceed water quality standards.

B. Regulatory Basis/Legal Authorities

1. This Order is issued pursuant to CWA Section 402(p) (USC §1342(p)) and implementing regulations adopted by the United States Environmental Protection Agency (USEPA) as codified in Code of Federal Regulations, Title 40, Parts 122, 123, and 124 (40 CFR 122, 123 & 124); the Porter Cologne Water Quality Control Act (Division 7 of the Water Code, commencing with Section 13000); all applicable provisions of statewide Water Quality Control Plans and Policies adopted by the State Water Resources Control Board (State Board); the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan); the California Toxics Rule (CTR); and the California Toxics Rule Implementation Plan. The Basin Plan also incorporates all state water quality control plans and policies. This Order also serves as Waste Discharge requirements (WDRs) pursuant to Article 4, Chapter 4, Division 7 of the Water Code (commencing with Section 13260).
2. This Order is consistent with the following precedential Orders adopted by the State Water Resources Control Board (State Board) addressing municipal storm water NPDES permits: Order 99-05-DWQ (Petition of Environmental Health Coalition/Receiving Water Limitation Language for Municipal Storm Water Permits); Order WQ-2000-11 (Petitions of Bellflower, City of Arcadia, Western States Petroleum Association/Review of RWQCB and Its Executive Officer Pursuant to Order 96-054, Permit for Municipal Storm Water and Urban Run-Off Discharges within Los Angeles County); Order WQ 2001-15 (In the Matter of the Petitions of Building Industry Association of San Diego County and Western States Petroleum Association); and Order WQO 2002-0014 (Petitions of Aliso Viejo, et al/Order to stay provision F.5.f of the permit and part of last sentence of Finding 26 (permit issued by San Diego Regional Board).
3. The requirements contained in this Order are necessary to protect water quality standards⁴ of the receiving waters and to implement the plans and policies described in Finding 1, above. These plans and policies contain numeric and

⁴ Under the Clean Water Act, the beneficial uses and the water quality objectives to protect those beneficial uses are collectively referred to as water quality standards.

narrative water quality standards for the waterbodies in this Region. In accordance with Section 402(p)(2)(B)(iii) of the CWA and its implementing regulations (40 CFR Parts 122, 123, & 124), this Order requires the Permittees to develop and implement programs and policies necessary to reduce the discharge of pollutants in urban and storm water runoff to waters of the U.S. to the maximum extent practicable (MEP)⁵. The legislative history and the preamble to the federal storm water regulations (40 CFR Parts 122, 123 and 124) indicate that the Congress and the USEPA were aware of the difficulties in regulating urban and storm water runoff solely through traditional end-of-pipe treatment. Consistent with the CWA, it is the Regional Board's intent that this Order require the implementation of best management practices (BMPs)⁶ to reduce, consistent with the MEP standard, the discharge of pollutants in urban storm water from the MS4s in order to support attainment of water quality standards.

4. On June 17, 1999, the State Board adopted Water Quality Order No. 99-05. This is a precedential Order that incorporates the receiving water limitations language recommended by USEPA. Consistent with the State Board's Order, this Order requires the Permittees to comply with the applicable water quality standards, which is to be achieved through an iterative approach requiring the implementation of BMPs that are designed to meet water quality standards. Most municipal storm water permits issued in California specify certain minimum control measures and incorporates an iterative process that requires increasingly more effective control measures if the water quality standards are not met.
5. This Order is also consistent with the recent court decisions related to storm water permitting, including the San Bernardino County Superior Court decision regarding the City of Rancho Cucamonga's appeal of the 2002 San Bernardino County MS4 Permit, Order No. R8-2002-0012.
6. This Order does not constitute an unfunded mandate subject to subvention under Article XIII.B, Section (6) of the California Constitution for several reasons, including the following:

⁵ Maximum Extent Practicable (MEP) – The technology-based standard established by Congress in CWA section 402(p)(3)(B)(iii) that operators of MS4s must meet. Technology-based standards establish the level of pollutant reductions that dischargers must achieve, typically by treatment or by a combination of source control and treatment control BMPs. MEP generally emphasizes pollution prevention and source control BMPs primarily (as the first line of defense) in combination with treatment methods serving as a backup (additional line of defense). MEP considers economics and is generally, but not necessarily, less stringent than BAT. A definition for MEP is not provided either in the statute or in the regulations. Instead the definition of MEP is dynamic and will be defined by the following process over time: municipalities propose their definition of MEP by way of their urban runoff management programs. Their total collective and individual activities conducted pursuant to the urban runoff management programs becomes their proposal for MEP as it applies both to their overall effort, as well as to specific activities (e.g., MEP for street sweeping, or MEP for MS4 maintenance). In the absence of a proposal acceptable to the Regional Board, the Regional Board defines MEP. See Attachment 4, Glossary for complete definition.

⁶ Best Management Practices (BMPs) are programs, policies and practices, including structural and engineering controls, to control the discharge of pollutants that are maximized in efficiency. Also see BMP definition under Glossary.

- a. This Order implements federally mandated requirements under Clean Water Act Section 402(p)(3)(B). (33 USC §1342(p)(3)(B)).
- b. The Permittees' obligation 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.
- c. The Permittees have the authority to levy service charges, fees, or assessments to pay for compliance with this Order. Certain assessments may require voter approval⁷.
- d. The Permittees 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 USC §1311(a)).

C. Rationale for Requirements

1. The Regional Board developed the requirements in this Order based on information submitted as part of the ROWD, the MSWMP, monitoring and reporting data, program audits, and other available information and consistent with the federal and state laws and regulations. The Fact Sheet (Attachment 6) contains additional regulatory background information and rationale for requirements in this Order. The Fact Sheet is hereby incorporated into this Order and constitutes part of the Findings for this Order. Attachments 1 through 5 are also incorporated into this Order.
2. The ROWD included a program effectiveness analysis and recommended a shift in the San Bernardino County MS4 program from programmatic/administrative tasks to compliance based on water quality standards and on tasks identified in the implementation plans for total maximum daily loads (TMDLs). The MSWMP includes risk-based, outcome-oriented and compliance-focused programs and performance commitments. The MSWMP is a dynamic document that implements programs and policies to control the discharge of pollutants in urban and storm water runoff consistent with the MEP standard. If the control measures proposed and implemented as per the MSWMP and other requirements included in this Order are not effective in meeting water quality standards, the Permittees are required to revise the MSWMP with more effective control measures.
3. The MSWMP includes the Permittees' performance commitments for each of the major program elements and those performance commitments are incorporated into this Order.
4. Regional Board staff evaluated each of the Permittees' storm water programs and determined that one of the major deficiencies in the programs was a lack of a written procedure on how to implement various elements of the MSWMP. This Order requires each of the Permittees to develop and implement its own Local Implementation Plan (LIP). The LIP should document internal procedures for implementation of the program elements described in the MSWMP.

⁷ For example, the City of Santa Cruz voted to raise property taxes to fund the storm water program at the November 4, 2008 election (see: http://www.santacruzsentinel.com/localnews/ci_10904561).

5. This Order requires the Permittees to revise the MSWMP and associated documents, as needed, to incorporate any requirements in this Order, any TMDLs adopted by the Regional Board and approved by the State Board, Office of Administrative Law and the USEPA, and to incorporate any additional BMPs needed to meet water quality standards. All documents submitted in accordance with this Order for approval by the Executive Officer or the Regional Board will be publicly noticed prior to approval by the Executive Officer or the Regional Board⁸.

D. California Environmental Quality Act (CEQA)

Under Water Code Section 13389, this action to adopt an NPDES permit is exempt from the provisions of CEQA, Public Resources Code Sections 21100 et seq. (*County of Los Angeles v. California State Water Resources Control Board* (2006) 142 Cal.App.4th 985, mod. (Nov 6, 2006, B184034) 50 Cal. Rptr.3d 619, 632-636.) This action also involves the re-issuance of waste discharge requirements for existing MS4s that discharge storm water and urban runoff and as such, is exempt from the provisions of California Environmental Quality Act (commencing with Section 21100) in that the activity is exempt pursuant to Title 14 of the California Code of Regulations Section 15301.

E. Discharge Characteristics/Risk-Based Storm Water Management

1. This Order regulates the discharge of pollutants from anthropogenic (generated from human activities, excluding agricultural activities) sources and/or activities in urban and storm water runoff, and certain types of de-minimus discharges specifically authorized under Section V of this Order, from areas under the jurisdiction of the Permittees. The term storm water as used in this Order includes storm water runoff, snowmelt runoff, and surface runoff and drainage. Storm water discharges consist of surface runoff generated from various land uses in all the hydrologic drainage areas that discharge into waters of the U.S. The quality of these discharges varies considerably and is affected by land use activities, basin hydrology and geology, season, the frequency and duration of storm events, and the presence of illicit disposal practices and illegal connections.
2. Studies conducted by the USEPA, the states, counties, cities, flood control districts and other political entities dealing with urban and "storm water" runoff indicate the following major sources of urban runoff "pollution" nationwide⁹:
 - a. Industrial sites where appropriate pollution prevention and best management practices (BMPs) are not implemented;
 - b. Construction sites where erosion and siltation controls and other BMPs are not implemented; and,

⁸ The Executive Officer shall provide members of the public with notice and at least a 30-day comment opportunity for all documents submitted in accordance with this Order. If the Executive Officer, after considering timely submitted comments, concludes that the document is adequate or adequate with specified changes, the Executive Officer may approve the document or present it to the Board for its consideration at a regularly scheduled and noticed meeting. If there are significant issues that cannot be resolved by the Executive Officer, the document will be presented to the Board for its consideration at a regularly scheduled meeting.

⁹ See Attachment 4-Glossary, for definition of "storm water", and "pollution".

- c. Runoff from urbanized areas; and
 - d. Natural background, including leaching of naturally-occurring nutrients and minerals from local soils.
3. A number of permits have been adopted to address pollution from the sources identified in Finding 2, above. The State Board issued three statewide general NPDES permits: one for storm water runoff from industrial activities (NPDES No. CAS000001, General Industrial Activities Storm Water Permit), a second permit for storm water runoff from construction activities (NPDES No. CAS000002, General Construction Activity Storm Water Permit) and a third permit for Storm Water Runoff Associated with Small Linear Underground/Overhead Construction Projects (CAS000005). Industrial activities (as identified in 40 CFR 122.26(b)(14)) and construction sites of one acre or more, are required to obtain coverage under these statewide general permits. The permittees have developed project conditions of approval requiring coverage under the State's General Permits for new developments to be implemented at the time of grading or building permit issuance for construction sites on one acre or more and at the time of local permit issuance for industrial facilities.
 4. The State Board also adopted NPDES No. CAS000003 for storm water runoff from facilities (including freeways and highways) owned and/or operated by California Department of Transportation (Caltrans) and NPDES No. CAS000004, for Storm Water Discharges from Small Municipal Separate Storm Sewer Systems. The Regional Board adopted Order No. R8-2007-0001, NPDES No. CAG018001, for concentrated animal feeding operations, including dairies. The Regional Board also issues individual storm water permits for certain industrial facilities within the Region. Currently there are two facilities located within San Bernardino County. Additionally, for a number of facilities that discharge process wastewater and storm water, storm water discharge requirements are included with the facilities' NPDES permit for process wastewater.
 5. In most cases, the industries and construction sites covered under the Statewide General Industrial and Construction Permits discharge into storm drains and/or flood control facilities owned and operated by the Permittees. The Permittees have enacted a system of local ordinances, building permits and business licensing practices to further regulate residential, industrial and construction sites within their jurisdiction for the purpose of reducing storm water pollution to be consistent with the maximum extent practicable standard.
 6. The Regional Board administers compliance with the State's General Industrial and Construction Activities Storm Water Permits. A coordinated effort between the Permittees and the Regional Board staff is critical to avoid duplicative effort when overseeing the compliance of dischargers covered under these General Permits. As part of this coordination, the Permittees have been notifying Regional Board staff when, during their routine activities, they observe conditions that pose a potential threat to water quality or when they discover an industrial facility or construction activity that failed to obtain coverage under the appropriate general storm water permit.

7. The Permittees have conducted storm water and receiving water monitoring as required under the first, second and third term permits. These monitoring data and data from other sources have confirmed that urban and storm water may contain waste, as defined in CWC § 13050, and pollutants that adversely affect the quality of the waters of the U.S. The discharge of urban runoff from an MS4 is a "discharge of pollutants from a point source" into waters of the U.S. as defined in the CWA.
8. Urban and storm water runoff may contain elevated levels of pathogens (bacteria, protozoa, viruses), sediment, trash, fertilizers (nutrients: nitrogen and phosphorus compounds), pesticides (DDT, chlordane, diazinon, chlorpyrifos, etc.), heavy metals (cadmium, chromium, copper, lead, zinc, etc.), and petroleum products (oil, grease, petroleum hydrocarbons, polycyclic aromatic hydrocarbons, etc.). Storm water can carry these pollutants to rivers, streams, lakes, bays and the ocean (receiving waters).
9. These pollutants can impact the beneficial uses of the receiving waters and can cause or threaten to cause a condition of pollution or nuisance.
10. Pathogens (from sanitary sewer overflows, septic system leaks, and spills and leaks from portable toilets, pets, wildlife, and human activities) can impact water contact recreation and non-contact water recreation. Runoff from San Bernardino County areas is tributary to the Santa Ana River which discharges into the Pacific Ocean in Orange County. In Orange County, microbial contamination of the beaches from urban runoff and other sources has resulted in beach closures and health advisories. In the middle Santa Ana River basin areas the bacterial levels exceed the Basin Plan objectives (see Finding F, below).
11. Oil and grease (from automobiles, industrial sites, etc.) can coat birds and aquatic organisms, adversely affecting respiration and/or thermoregulation. Other petroleum hydrocarbon components may cause toxicity to aquatic organisms and may impact human health.
12. Suspended and settleable solids (from construction sites, other sediment sources, trash, and industrial activities) may be deleterious to benthic organisms and may cause anaerobic conditions to form. Sediments and other suspended particulates can cause turbidity, clog fish gills and interfere with respiration in aquatic fauna. They may also screen out light, hindering photosynthesis and normal aquatic plant growth and development.
13. Toxic substances (from pesticides, petroleum products, metals, and industrial wastes) can cause acute and/or chronic toxicity, and can bioaccumulate in organisms to levels that may be harmful to human health.
14. Nutrients (from fertilizer use, fire fighting chemicals, decaying plants, confined animal facilities, pets, and wildlife) can cause excessive algal blooms. These blooms may lead to problems with taste, odor, color and increased turbidity, and may depress the dissolved oxygen content, leading to fish kills.
15. Trash and debris, in particular plastics, have long been recognized as both aesthetic nuisances and as threats to freshwater and marine environments. Plastic debris, in the form of plastic nurdles, harms hundreds of wildlife species through ingestion,

- entanglements and entrapment. These plastic nurdles have the capability of absorbing pollutants, such as PCBs, and when ingested by wildlife, expose those animals to pollutant concentration that are Orders of magnitude higher than the surrounding water. Water Code Section 13367 requires the State Board and the regional boards to implement a program to control discharges of pre-production plastic from point and nonpoint sources. "Floatables" (from trash and debris) are an aesthetic nuisance and can be a substrate for algae and insect vectors. This Order requires the Permittees to control the discharge of trash and debris, including plastic nurdles, from the MS4s to waters of the U.S.
16. Management of dry weather discharges resulting from urbanization provides an opportunity to promote water conservation as well as address water quality. This Order requires the Permittees to promote and implement best management practices for water conservation, and thereby, minimize nuisance flows into and from the MS4s.
 17. In Order to characterize storm water discharges, to identify problem areas, to determine the impact of urban runoff on receiving waters, and to determine the effectiveness of the various BMPs, an effective monitoring program is critical. The Principal Permittee administers the monitoring program for the Permittees. This program includes storm drain outfall monitoring, receiving water monitoring, and dry weather monitoring. The ROWD compared the monitoring results to: (a) water quality objectives in the Basin Plan; (b) CTR objectives; and (c) USEPA storm water benchmarks contained in the USEPA Multi-Sector Industrial Storm Water Permit. In Order to ascertain overall water quality conditions in the permitted area, the Permittees also evaluated monitoring data from other sources such as: (a) National Water Quality Assessment conducted by the USGS¹⁰ (NAWQA); and (b) Santa Ana Regional Water Quality Board's Water Quality Assessment per Section 305(b) of the CWA (RWQCB 305(b) Assessment).
 18. The Permittees' water quality monitoring data submitted to date document a number of exceedances of water quality objectives specified in the Basin Plan, CTR criteria and/or USEPA's storm water bench mark for fecal coliform bacteria, total suspended solids, nutrients, COD and metals. Toxicity has also been observed at some of the monitoring locations. These findings indicate that urban and storm water runoff is causing or contributing to water quality impairments.
 19. Comparison of wet weather water quality monitoring data for 2000-2006¹¹ with that from 1994-1999¹² shows that the median concentrations for most constituents have not changed significantly. Furthermore, monitoring data for the period 1994-2006 indicate that median concentrations of wet weather composite samples at monitoring

¹⁰ Belitz, K., Hamlin, S.N., Burton, C.A., Kent, R., Fay, R.G., and Johnson, T., 2004. *Water Quality in the Santa Ana Basin, California, 1999-2001*. Circular 1238. U. S. Geological Survey. (This is only one of several USGS reports.)

¹¹ 2006 ROWD

¹² 2002 ROWD

stations¹³ 2, 3, and 8 exceeded the USEPA benchmarks for TSS, COD, NO₃-N, and metals. With the exception of Site 10 (Santa Ana River upstream of Seven Oaks Dam, tributary to mostly undeveloped areas), coliform bacteria concentrations were far above the Basin Plan water quality objectives. These data support the need for continued monitoring and additional control measures to control the discharge of pollutants from the MS4s.

20. A limited number of constituents were monitored during dry weather at representative urban runoff locations and some of these constituents also exceeded the Basin Plan objectives. These findings indicate that additional surveillance and controls may be needed to minimize and/or eliminate dry weather flows into and from the MS4s.
21. The Principal Permittee conducted an analysis of the receiving water monitoring data collected during the last 15 years for a number of monitoring sites (Sites 2, 3, 8¹⁴, and 10¹⁵). This analysis indicates that the most significant water quality problem associated with urban and storm water runoff is bacterial contamination. It also showed that Basin Plan objectives for metals such as lead, copper, and zinc¹⁶ are exceeded more frequently than USEPA benchmarks. The Permittees monitoring data were then compared to monitoring data available from other sources (NAWQA, RWQCB 305(b) Assessment) to determine beneficial use impacts and pollutants causing the impacts. This analysis was then used to prioritize problem areas and to propose a risk-based approach to address these problems.
22. Based on the evaluation of monitoring data described above, the ROWD prioritized the pollutants of concern with regards to storm water management as follow:
 - a. High Priority: Coliform bacteria
 - b. Medium Priority: Zinc, copper, lead
 - c. Low Priority: Nutrients, COD, TSS

F. CWA Section 303(d) Listed Waterbodies and TMDLS

1. Considerable sampling data have been collected to characterize ambient receiving water quality in the Region. Water quality assessments conducted by the Regional Board have identified a number of beneficial use impairments, due in part, to urban runoff. Section 305(b) of the CWA requires each of the regional boards to routinely monitor and assess the quality of waters of the region. If this assessment indicates

¹³ Drainage at Site 2 (Cucamonga Creek @ Hwy 60) is predominantly urban, influenced by commercial and industrial land uses with some contribution from open space/rural and residential land uses. The predominant land use at Site 3 (Cucamonga Creek @ Hellman) is agricultural, but there is contribution from open space/rural, and discharge from a municipal wastewater treatment plant between Sites 2 and 3. Monitoring site 5 (Hunts Lane n/o Hospitality Lane) is within a constructed storm drain system and flow is mostly from commercial and light industrial land uses with some urban contribution.

¹⁴ Site 8 station is located in the Santa Ana River (SAR) at Hamner Avenue, runoff is mostly from urban land uses.

¹⁵ Site 10 station is located at SAR, upstream of Seven Oaks Dam, runoff is mostly from open/rural areas.

¹⁶ There is no Basin Plan objective for zinc, USEPA benchmark is 0.117 mg/l.

that beneficial uses are not met, then that waterbody must be listed under Section 303(d) of the CWA as an impaired waterbody.

2. The Regional Board's 2006 water quality assessment listed a number of water bodies within the permitted area under Section 303(d) as impaired water bodies (see Table 3)¹⁷.
3. Federal regulations require that a total maximum daily load (TMDL) be established for each 303(d) listed waterbody for each of the pollutants causing impairment. The TMDL is the total amount of the problem pollutant that can be discharged while water quality standards in the receiving water are attained, i.e., water quality objectives are met and the beneficial uses are protected. A TMDL is the sum of the individual wasteload allocations (WLA) for point source inputs, load allocations (LA) for non-point source inputs and natural background, with a margin of safety. The TMDLs are one of the bases for limitations established in waste discharge requirements.
4. For 303(d) listed waterbodies without a TMDL, the Permittees are required to provide special protections through implementation of specific tasks that are deemed necessary, including any additional monitoring and participation in the development and implementation of TMDLs. If a TMDL has been developed and an implementation plan is yet to be developed, the Permittees are required to develop constituent specific source control measures, conduct additional monitoring and/or cooperate with the development of an implementation plan.

¹⁷ On April 24, 2009, the Regional Board adopted the 2008 Integrated Report of Federal Clean Water Act Section 305(b) and Section 305(d) List of Water Quality Limited Segments, Resolution No. R8-2009-0032.

Table 3. CWA Section 303(d) List of Water Quality Limited Segments, Santa Ana Region {Waterbodies Requiring a TMDL in San Bernardino County¹}

Water Body Name	Pollutant / Stressor	Potential Sources	Proposed TMDL Completion
Big Bear Lake	Copper	Resource extraction	2007
	Mercury	Resource extraction ¹⁸	2007
	Metals ³	Resource extraction	2007
	Noxious aquatic plants	Construction/Land development, Unknown point source	2006
	Nutrients	Construction/Land development, Snow skiing activities	2006
	PCBs (Polychlorinated biphenyls)	Source unknown	2019
	Sedimentation/Siltation ⁴	Construction/Land development, Snow skiing activities, Unknown nonpoint source	2006
Summit Creek	Nutrients	Construction/Land development	2008 ²
Knickerbocker Creek	Metals	Unknown Nonpoint Source	2007
	Pathogens	Unknown nonpoint source	2005
Grout Creek	Metals	Unknown nonpoint source	2007
	Nutrients	Unknown nonpoint source	2008 ²
Rathbone (Rathbun) Creek	Nutrient	Unknown nonpoint source, Snow skiing activities	2008 ²
	Sedimentation/Siltation	Unknown nonpoint source, Snow skiing activities	2006
Mountain Home Creek	Pathogens	Unknown nonpoint source	2019
Mountain Home Creek, East Fork	Pathogens	Unknown nonpoint source	2019
Lytle Creek	Pathogens	Unknown nonpoint source	2019
Mill Creek (Prado Area)	Nutrients, Suspended Solids	Agriculture, dairies	2019
		Dairies	2019
Prado Park Lake	Nutrients	Nonpoint source	2019
Chino Creek Reach 1 ¹	Nutrients	Agriculture, dairies	2019
Mill Creek Reach 1 ¹	Pathogens	Unknown nonpoint source	2019
Mill Creek Reach 2 ²	Pathogens	Unknown nonpoint source	2019
Santa Ana River, Reach 4	Pathogens	Nonpoint Source	2019

¹⁸ Resource extraction was removed as a potential source for Mercury in Big Bear Lake and replaced with atmospheric deposition in the Proposed 2008 303(d)-305(b) Integrated Report

¹ Based on STATE BOARD 2006 CWA Section 303(d) List of Water Quality Limited Segments, Santa Ana Regional Water Quality Control Board, USEPA Approved June 28, 2007 (http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/r8_06_303d_req_tmdls.pdf)

² These waterbodies are being incorporated into the nutrient TMDL under development for Big Bear Lake.

³ Big Bear Lake is recommended for delisting for copper in the Proposed 2008 303(d)-305(b) Integrated Report

⁴ Big Bear Lake is recommended for delisting for sedimentation/siltation in the Proposed 2008 303(d)-305(b) Integrated Report

5. Big Bear Lake is included under the 2006 CWA Section 303(d) list for mercury. Historical and recent monitoring results conducted by Regional Board staff and other entities confirm that the Office of Environmental Health Hazard Assessment's (OEHHA) mercury fish tissue screening level of 0.3 mg/kg has been exceeded. This finding is likely to impact REC1 (fishing) uses of Big Bear Lake. Recent monitoring efforts and technical support documents (Tetra Tech, 2008)¹⁹ to determine the source of mercury and to develop TMDLs, indicate that though majority of the watershed load originates from atmospheric deposition, delivery is dependent on runoff and sediment transport to the lake. However, there is insufficient data to draw conclusions about the effect of urbanization on mercury input to the Lake.
- a. It has been demonstrated that mercury loadings are proportional to fine sediment loads and sediment loads are directly proportional to increases in flow rates. The 2008 Tetra Tech report states that the watershed sediment-associated mercury load is one of two components to the "external" loading of mercury. The report makes the arguments that:
- The amount of sediment moving through the major streams is equivalent (as a long-term average) to the rate of sediment loading to those streams, as estimated by a sediment load model.
 - The concentration of mercury in sediment moving through the system is equivalent to the concentration measured in stream sediment samples.
- b. Urbanization generally increases impermeable surfaces and that results in increased flow rates which in turn could increase mercury loadings to Big Bear Lake.
- c. The Big Bear Lake Mercury TMDL is expected to be completed and approved within this permit cycle. This Order may be reopened to include any additional requirements from the Mercury TMDL Implementation Plan.
- d. Pending adoption of the Big Bear Lake Mercury TMDL, this Order requires the stakeholders to participate in the preparation and implementation of a Watershed Action Plan that includes control measures to minimize the impact of urbanization on water quality and hydrologic regime.

¹⁹ Big Bear Lake Technical Support Document for Mercury TMDL, September 2008, Prepared by Tetrtech for U.S EPA Region 9 and Santa Ana Regional Water Quality Board

6. Knickerbocker Creek Sole Source Pathogen Investigation and Control:

- a. Knickerbocker Creek is one of Big Bear Lake's tributaries. It is engineered and constructed of concrete through the Big Bear Village area to carry 100-year flows, but is natural within the upper boundaries of the City and the Forest Service area. The Creek is an ephemeral stream that flows largely in response to storm events or during the spring when runoff is comprised largely of snowmelt.
- b. The Basin Plan designates municipal and domestic water supply (MUN), water contact recreation (REC1) and non-water contact recreation (REC2) as beneficial uses of Knickerbocker Creek.
- c. To protect MUN beneficial use, the Basin Plan specifies a numeric water quality objective for total coliform of less than 100 organisms/100 mL. To protect REC1 beneficial use, the Basin Plan specifies numeric water quality objectives for fecal coliform indicator bacteria of log mean less than 200 organisms/100 mL based on five or more samples/30 day period and not more than 10% of the samples shall exceed 400 organisms/100 ml for any 30-day period.
- d. In 1994, Regional Board issued a report titled "The Investigation of Toxics and Nutrients in Big Bear Lake" which included test results for Big Bear Lake and many of its tributaries for bacterial indicators.
- e. The test results indicated that Knickerbocker Creek had bacteria indicator levels that exceeded the MUN and REC1 Basin Plan objectives for total coliform and fecal coliform. In 1994, Knickerbocker Creek was placed on the Clean Water Act Section 303(d) List as impaired for pathogens.
- f. As a result of the 303(d) listing, the Regional Board needed to develop a regulatory strategy to address the elevated bacterial levels. Typically, this is the development and implementation of TMDLs.
- g. In 2000, Regional Board staff initiated development of TMDLs in the Big Bear Lake watershed, including the Knickerbocker Creek bacteria indicator TMDL. A sampling program was conducted from June 2002 through April 2003, on five sites along the Creek, to identify potential sources of elevated bacteria levels, if any.
- h. The results of the sampling program indicated that at times, bacterial indicators exceeded the Basin Plan total and fecal coliform objectives at the sampling sites located within city boundaries. Data from the station representing drainage from the forested area indicated that bacterial indicator concentrations complied with the Basin Plan objectives.
- i. The monitoring results indicated that although bacteria were also detected outside of city boundaries, the concentrations were not high enough to cause water quality objectives to be exceeded in Knickerbocker Creek.
- j. The sampling program identified the runoff from the City as the sole source of bacteria contamination in Knickerbocker Creek. Regional Board staff determined

that the bacteria problems in Knickerbocker Creek could be addressed through the MS4 permit without developing a detailed TMDL.

- k. Since most of the inlets to Knickerbocker Creek are from a conduit or other channelized systems from the City, the City was required to address this bacterial problem.
 - l. Pursuant to Provision IV, Receiving Water Limitations, Order No. R8-2002-0012 (third term permit), the Executive Officer directed the City of Big Bear Lake to submit by September 30, 2005: (i) a plan and a schedule for identification and investigation of the sources of bacteria; (ii) a list of the BMPs that are currently being implemented and additional BMPs that must be implemented to address the exceedance of bacteria in Knickerbocker Creek; (iii) a plan and a schedule for implementation of additional control measures (including BMPs) to reduce or eliminate the exceedances; and (iv) a plan and a schedule for implementation of a monitoring program to evaluate the efficacy of any control measures implemented²⁰.
 - m. In compliance with the above, the City of Big Bear Lake submitted a plan and a schedule and conducted a source identification study and Phase 1 of the water quality monitoring program in 2006. The City investigated the entire sewer and septic systems located near Knickerbocker Creek and found no sanitary sewer leaks or septic system problems in the area.
 - n. Molecular DNA analysis confirmed that the bacteria contamination was not from human sources, but more likely from canine sources (domestic dogs).
 - o. In December 2007, the City purchased and installed several pet waste stations in the Knickerbocker Creek catchment areas, and installed portable toilets near parks and other recreation areas to reduce the potential for bacteria contamination in the Creek. The City believes that these control measures should address the bacteria problems in the Creek.
 - p. The City is currently implementing Phase 2 of the water quality monitoring program²¹ to assess the effectiveness of these control measures. Three sampling locations in the Creek within City boundaries were selected based on increased frequency of high bacteria levels and availability of sustained flows.
 - q. This Order requires the City to continue monitoring and assessment of the effectiveness of its control measures.
7. Within the permitted area, there are two approved TMDLS: (a) the Middle Santa Ana River Bacterial Indicator TMDL (MSAR TMDL); and (b) Big Bear Lake Nutrient TMDL for Dry Hydrological Conditions. The Basin Plan amendment incorporating the MSAR TMDL was approved by the Regional Board on August 26, 2005 (Resolution No. R8-2005-0001), by the State Board on May 15, 2006, by the state's

²⁰ Santa Ana Regional Water Quality Control Board, Letter from Gerard J. Thibeault, July 31, 2005, "Determination of Water Quality Standards Exceedance in Knickerbocker Creek Being Caused by MS4 Discharges in the City of Big Bear Lake".

²¹ City of Big Bear Lake, January 2008, "Bacteria Monitoring Plan for Knickerbocker Creek Phase 2.

Office of Administrative Law on September 1, 2006, and by the USEPA on May 16, 2007.

8. The purpose of the MSAR TMDL is to assure that water quality objectives for fecal coliform indicator bacteria and beneficial uses are met for the following impaired waterbodies: Santa Ana River (Reach 3), Chino Creek (Reaches 1 and 2), Prado Park Lake, Mill Creek (Prado Area), and Cucamonga Creek (Reach 1). The waste load allocations apply to Middle Santa Ana River Watershed Urban Dischargers as a group.
9. The MSAR TMDL Implementation Plan assigns responsibilities to specific MS4 dischargers to identify sources of impairment, to propose BMPs to address those sources, and to monitor, evaluate, and revise BMPs as needed, based on the effectiveness of the BMP implementation program. Specific Implementation Plan tasks are described in Chapter 5 of the Basin Plan and are assigned to one or more of the Permittees. Requirements of the TMDL Implementation Plan tasks are incorporated into this Order. A number of these Implementation Plan tasks are also jointly assigned to non-Permittee stakeholders. The stakeholders have established TMDL task forces to jointly implement and coordinate the TMDL Implementation Plan tasks.
10. The MSAR TMDL Task Force members are listed in Table 4:

Table 4. Middle Santa Ana River Bacterial Indicator TMDL Task Force

MS4 Permittees	Non-MS4 Permittees
San Bernardino County Flood Control District (as Principal Permittee and on behalf of the Co-Permittees named in the TMDL)	Santa Ana Watershed Project Authority (SAWPA)
	RWQCB, Santa Ana Region
Corona, City of (Riverside County MS4 Permittee)	US Department of Agriculture
Norco, City of (Riverside County MS4 Permittee)	US Department of Forest Service
Riverside, City of (Riverside County MS4 Permittee)	Milk Producers Council
Riverside, County of (Riverside County MS4 Permittee)	Chino Watermaster Agricultural Pool
Riverside County Flood Control and Water Conservation District (Riverside County MS4 Principal Permittee)	Region 4 MS4 Permittees: Cities of Claremont and Pomona

11. Some of the requirements in the MSAR TMDL implementation plan are described below:
 - a. The Implementation Plan for the MSAR TMDLs includes WLAs for urban discharges and for CAFOs, and LAs for agriculture and natural sources (open space and undeveloped forest land) during wet and dry weather conditions.
 - b. The Implementation Plan for the MSAR TMDLs also specifies a number of tasks and numeric targets for fecal coliform and *E. coli*. Some of these tasks have been completed.

- c. Pursuant to Task 3, the MSAR TMDL Task Force submitted a monitoring program which was approved by the Regional Board on June 29, 2007 (Resolution No. R8-2007-0046).
 - d. Pursuant to Task 4, the MSAR TMDL Task Force submitted an Urban Source Evaluation Plan that was approved by the Regional Board on April 18, 2008 (Resolution No. R8-2008-0044). The Task Force has also conducted the required urban source monitoring and is evaluating the results to determine sources of pathogens.
 - e. Consistent with Task 4.2, this Order requires the Permittees to revise the MSWMP to address the results of the USEP and/or other studies, propose BMPs to be implemented and initiate a Waste Load Allocation (WLA) pre-compliance evaluation monitoring²² to evaluate the effectiveness of BMPs implemented in the MSAR watershed in reducing bacterial indicators in urban runoff by the compliance date.
12. Stakeholders in the Santa Ana Region have formed the Storm Water Quality Standards Task Force (SWQSTF) to evaluate USEPA's bacterial indicator recommendations and appropriate recreational beneficial use designations for waterbodies throughout the Region. The SWQSTF is expected to make recommendations for the adoption of alternative bacterial indicators such as *E.coli*, based on USEPA's "Ambient Water Quality Criteria for Bacteria - 1986". These and other recommendations of the SWQSTF for revisions to recreational beneficial use designations will be considered through the Basin Planning process. When and if the Basin Plan is amended to incorporate new beneficial use designations and/or bacterial standards, the MSAR TMDLs will be revised, as appropriate.
 13. On April 21, 2006, the Regional Board adopted the Big Bear Lake Nutrient TMDL for Dry Hydrological Conditions (Resolution R8-2006-0023); the State Board approved the Basin Plan Amendment on April 3, 2007 and the Office of Administrative Law approved the Basin Plan Amendment on August 21, 2007. USEPA approved the TMDL on September 25, 2007. There were insufficient watershed and in-lake nutrient data to allow development of TMDLs, load allocations, and wasteload allocations for average and/or wet hydrologic conditions; therefore the TMDL is specific to dry hydrological conditions. This Order requires the Permittees to implement the tasks identified in the implementation plan for the Big Bear Lake Nutrient TMDL.
 14. Some of the details of the implementation plan for the Bear Lake Nutrient TMDL for Dry Hydrological Conditions are described below.
 - a. The Big Bear Lake Nutrient TMDL includes an urban WLA for total phosphorus for dry hydrologic conditions. Phosphorus is generally considered as the controlling nutrient causing impairment in Big Bear Lake.

²² Pre-compliance evaluation monitoring is monitoring conducted prior to the TMDL compliance date to assess the effectiveness of BMPs implemented in reducing pollutant(s) of concern by the compliance date.

- b. Nutrient discharges to the Lake have promoted the proliferation of nuisance aquatic plants which have impacted the Lake's beneficial uses and dissolved oxygen levels.
- c. The Big Bear Lake Nutrient TMDL specifies response numeric targets for chlorophyll a, macrophyte coverage and percentage of nuisance aquatic vascular plant species for Big Bear Lake. These response numeric targets provide a method to track improvements in water quality resulting from reductions in phosphorus loading.
- d. The numeric targets apply to all hydrological conditions. Compliance with these targets are to be achieved as soon as possible but no later than 2015 (dry hydrological conditions), 2020 (all other hydrological conditions).
- e. This Order requires the County, County Flood Control District and the City of Big Bear Lake (MS4 Permittees in the watershed) to comply with the urban WLA and to monitor for compliance.
- f. The Nutrient TMDL Implementation Plan requires the collection and evaluation of nitrogen data to determine compliance with the existing total inorganic nitrogen (TIN) objective for Big Bear Lake.
- g. The TMDL for Dry Hydrological Conditions does not specify nutrient reductions from external watershed sources, which include urban discharges (WLA), resorts and open space/forested lands (LAs). Instead, the TMDL for Dry Hydrological Conditions specifies a reduction in phosphorus from internal nutrient sources, which are lake sediment and macrophytes. External load dischargers are responsible for reducing their contributions to the internal nutrient loads.
- h. On December 6, 2006, the City of Big Bear Lake and Snow Summit, Inc., signed a Memorandum of Understanding (MOU) regarding Snow Summit's storm water discharges into the City's MS4 system. The City of Big Bear Lake and Snow Summit agreed that the City has the authority to regulate storm water discharges from properties, including Snow Summit's facilities, to the extent such storm water discharges enter lands within the boundaries of the City, any waters within the jurisdiction of the City, or the City's MS4 facilities. This provides the City an additional tool to control nutrient discharges to the Lake. Responsible agencies and dischargers in the Big Bear Lake watershed have formed a Big Bear Lake TMDL Taskforce. The Taskforce members are working jointly to implement requirements of the Big Bear Lake Nutrient TMDL.
- i. On May 4, 2009, the Big Bear Lake Nutrient Taskforce submitted a revised monitoring plan. At the May 22, 2009 board meeting, the Regional Board approved the Big Bear Lake Watershed-wide Nutrient Monitoring Plan by adopting Resolution No. R8-2009-0043. This watershed-wide monitoring plan, together with the in-lake monitoring plan (Resolution No. R8-2008-0070) approved by the Regional Board on July 18, 2008 are designed to determine the sources of phosphorus; develop TMDLs applicable to other hydrologic conditions; and evaluate compliance with numeric targets specified in the TMDLs.

- j. The Big Bear Lake Nutrient TMDL Taskforce has also submitted a lake management plan that is currently under review.

15. As indicated in Table 3, above, bacteria, metals and nutrients are the pollutants of concern for a majority of the waterbodies within the permitted area. One of the major sources of bacteria and nutrients is concentrated animal feeding operations. Dairy facilities within the region are regulated under the Regional Board's Concentrated Animal Feeding Operations (CAFO) Permit. The Regional Board enforces the CAFO Permit. The Permittees are required to identify and control other sources of bacteria, nutrients and other pollutants.

G. New Development/Significant Redevelopment – WQMP/LID

1. Significant numbers of development projects have taken place in San Bernardino County in the last decade. These developments have resulted in the urbanization of many areas. Urbanization generally increases storm water runoff volume, velocity and the amount of pollutants in the runoff. As development occurs, natural vegetated pervious ground cover is converted to impervious surfaces such as paved highways, streets, rooftops and parking lots. Natural vegetated soil can both absorb rainwater and remove pollutants providing an effective natural purification process. In contrast, impervious surfaces (e.g., concrete surface) can neither absorb water nor remove pollutants, and the natural purification characteristics are lost. Additionally, urban development significantly increases pollutant loads as the increased population density causes proportionately higher levels of vehicle emissions, vehicle maintenance wastes, municipal sewage wastes, pesticides, household hazardous wastes, lawn fertilizers, pet wastes, trash, and other anthropogenic pollutants.
2. Urbanization especially threatens environmentally sensitive areas as well as stream habitat and structure. Such areas have much less capacity to withstand pollution loads. In essence, development that is ordinarily insignificant in its impact on the environment may become significant in a sensitive environment. These State designated environmentally sensitive areas (ESAs) include those areas designated in the Basin Plan as supporting the following beneficial uses: (1) "Rare, Threatened, or Endangered Species (RARE)"; (2) "Wildlife Habitat (WILD)"; (3) "Spawning, Reproduction, and Development (SPWN)"; and (4) "Preservation of Biological Habitats of Special Significance (BIOL)".
3. The high volumes and velocities of storm water discharges from MS4s into natural watercourses can adversely impact aquatic ecosystems and stream habitat and cause stream bank erosion and physical modifications. These changes are collectively termed hydromodification. For the permitted area, hydromodification could especially impact those natural streams in the mountains and in lightly urbanized or undeveloped portions of the watershed. These areas are also sources of high quality water in the region.
4. On October 5, 2000, the State Board adopted Order No. WQ-2000-11, which is a precedential Order. Order No. WQ-2000-11 required that urban runoff generated by

85th percentile storm events from specific types of development categories (priority projects) be infiltrated, filtered or treated. The essential elements of this precedential Order were incorporated into the third term permit. In accordance with the requirements specified in the third term permit, the Permittees developed a model Water Quality Management Plan (WQMP) Guidance and Template and are currently implementing the essential elements of the approved model WQMP.

5. Recent studies have indicated that low impact development²³ (LID) BMPs are effective storm water management tools that minimize adverse impacts on storm water runoff quality and quantity resulting from urban developments. The Southern California Monitoring Coalition (SMC), including the project lead agency (the San Bernardino County Flood Control District), in collaboration with SMC member Southern California Coastal Water Research Project (SCCWRP) and the California Storm Water Quality Association (CASQA), with funding from the State Water Resources Control Board and CASQA is developing a Low Impact Development Manual for Southern California. This manual will be incorporated into the CASQA BMP Handbooks. The Permittees are encouraged to utilize the manual as a resource to implement LID techniques.
6. This Order requires the project proponents to first consider preventative and conservation techniques (e.g., preserve and protect natural features to the maximum extent practicable) prior to considering mitigative techniques (structural treatment, such as infiltration systems). The mitigative measures should be prioritized with the highest priority for BMPs that remove storm water pollutants and reduce runoff volume, such as infiltration, then other BMPs, such as harvesting and re-use, evapotranspiration and bio-treatment²⁴ should be considered. To the maximum extent practicable, these LID BMPs must be implemented at the project site. The Regional Board recognizes that site conditions, including site soils, contaminant plumes, high groundwater levels, etc., could limit the applicability of infiltration and other LID BMPs at certain project sites. Where LID BMPs are not feasible at the project site, more traditional²⁵, but equally effective control measures should be implemented. This Order provides for alternatives and in-lieu programs where LID BMPs are infeasible.
7. The USEPA has determined that LID/green infrastructure can be a cost-effective and environmentally preferable approach for the control of storm water pollution and to minimize downstream impacts by limiting the effective impervious area of a development. LID and the reduction of impervious areas, may achieve multiple environmental and economic benefits in addition to enhanced water quality and supply, stream and habitat protection, cleaner air, reduced urban temperature, increased energy efficiency and other community benefits such as aesthetics

²³ Low impact development is an approach to land development (or re-development) that works with nature to manage storm water as close to its source as possible by using structural and non-structural best management practices to reduce environmental impacts.

²⁴ In general, these types of BMPs utilize vegetation that promote pollutant uptake and evapotranspiration and/or natural or soil type media filtration with volume retention capacity and ability to reduce pollutant concentration.

²⁵ Typical engineered and/or proprietary treatment devices that capture/filter pollutants but do not contribute to maintenance of pre-development site hydrology. Examples are vortex separators, catch basin filters.

recreation, and wildlife areas. USEPA has reviewed studies²⁶ that have evaluated relationships between the percentage of effective impervious area (EIA) and physical degradation of stream channels (also see the SCCWRP study²⁷). The limited study conducted by Dr. Richard Horner concluded that a 3% EIA standard for development is feasible in Ventura County. USEPA believes that EIA is a reasonable metric for incorporating LID principles into storm water permits and EPA supports equally effective metrics for compliance determination. This Order incorporates a volume capture metric based on the design volume specified in the WQMP and the EIA metrics.

8. It is recognized that low impact development principles are universal concepts, however, their applicability is dependent on site-specific factors such as: soil conditions including soil compaction and permeability, groundwater levels, soil contaminants (brown field development), space restrictions (in-fill projects, redevelopment projects, high density development, transit-oriented developments), etc. In the event that low impact development techniques are not feasible at a site, alternatives and in-lieu programs are included that will address water quality/quantity concerns.
9. The model WQMP Guidance and Template provide a framework to incorporate some of the watershed protection principles into the Permittees' planning, construction and post-construction phases of priority projects. The model WQMP requires site design (including LID principles), source control and treatment control elements to reduce the discharge of pollutants in urban runoff. On April 30, 2004, the Regional Board approved the model WQMP Guidance and Template. The Permittees are requiring project proponents to develop and implement site-specific WQMPs. This Order requires the Permittees to verify functionality prior to issuance of certificate of occupancy and to track and ensure long term operation and maintenance of post-construction BMPs in approved WQMPs.
10. An audit of each of the Permittees' storm water management programs during the third term permit indicated no clear nexus between the watershed protection principles, including LID techniques, specified in the WQMP and the Permittees' General Plan or related documents such as Development Standards, Zoning Codes, Conditions of Approval, Project Development Guidance, etc. It appears that many of the existing procedures, Development Standards, Ordinances and Municipal Codes may be barriers for implementation of LID techniques. This Order requires the Permittees to review and revise the Permittees' CEQA documentation, General Plan, Comprehensive or Master Plan, Municipal Codes, Subdivision Ordinances, Project Development Standards, Conditions of Approval or related documents to

²⁶ See Southern California Coastal Water Research Project, "Managing Runoff to Protect Natural Streams: The Latest Developments on Investigation and Management of Hydromodification in California", dated December 30, 2005, Eric Stein and Susan Zaleski and the analysis prepared by Dr. Richard Horner entitled, "Investigation of the Feasibility and Benefits of Low-Impact Site Design Practices ("LID") for Ventura County" submitted to Los Angeles Regional Board by NRDC

²⁷ Studies conducted by Southern California Coastal Water Research Project (SCCWRP) and others indicate that environmental impacts from developments could be minimized by limiting the effective impervious area.

remove any barriers for implementation of LID techniques and other requirements of this Order.

11. This Order also requires the Permittees to review and enforce Covenants, Conditions and Restrictions (CC&R) or other mechanisms to ensure proper long term operation and maintenance of post-construction BMPs.
12. In addition to addressing post-development water quality, the WQMP includes requirements to protect environmentally sensitive areas and to address potential hydromodification issues at each project site. Section 2.3 of the WQMP requires identification of hydrologic conditions of concern (HCOC). An HCOC exists when a site's hydrologic regime is altered and there are significant²⁸ impacts on downstream channels and aquatic habitats, alone or in conjunction with impacts of other projects. Currently, new development and significant re-development projects are required to perform this assessment and incorporate appropriate BMPs to ensure existing hydrologic conditions are maintained. This Order requires the Permittees to implement LID techniques to minimize HCOC.
13. Management of the impacts of urbanization on water quality, stream stability and aquatic habitats is more effective if the techniques are implemented at the project site, within the neighborhood and within each municipality based on an overall watershed plan. During the third term permit, the Permittees initiated a watershed mapping project to develop a GIS-based map of the permitted area with the goal of identifying and developing specific action plans for protecting those segments of streams and channels that are vulnerable to impacts from urbanization.
14. The Regional Board and the Permittees recognize the importance of watershed management initiatives and regional planning and coordination in the development and implementation of programs and policies related to water quality protection. A number of such efforts are underway where the Permittees are active participants, including the Stormwater Quality Standards Task Force and the Middle Santa Ana River Bacteria TMDL Workgroup. This Order encourages continued participation in such programs. Furthermore, this Order recognizes that some of these planning efforts may result in significant changes to the Basin Plan. This Order may be reopened to address such changes. The Executive Officer is authorized to approve, after proper public notification, any request for reallocation of monitoring funds from lower priority local programs to regional monitoring programs.
15. This Order also requires the Permittees to develop a Watershed Action Plan to address cumulative impacts of development on vulnerable streams, preserve or restore to the maximum extent practicable the structure and function of streams in the permitted area, and protect surface water quality and groundwater recharge areas. The Watershed Action Plan should integrate hydromodification and water quality management strategies with land use planning policies, ordinances, and plans within each jurisdiction.

²⁸ It is expected that the current HCOC mapping effort and stream/risk characterization effort will define what should be considered as significant impact or stream vulnerability to hydromodification on a watershed basis.

16. Pending completion of a Watershed Action Plan, the Permittees are required to address the impacts of urbanization as required under the approved model WQMP by requiring project proponents to develop and implement project-specific WQMPs.
17. If not properly designed and maintained, the structural treatment control BMPs could create a nuisance and/or habitat for vectors²⁹ (e.g., mosquitoes and rodents). Third term permit required the Permittees to closely collaborate with the local vector control agencies during the development and implementation of such treatment systems. The Permittees should continue these collaborative efforts with the vector control agencies to ensure that treatment control systems do not become a nuisance or a potential source of pollutants. The requirements specified in this Order include identification of responsible agencies for maintaining the systems and for providing funding for operation and maintenance.
18. If not properly designed and maintained, groundwater infiltration systems could also adversely impact groundwater quality. Restrictions placed on urban runoff infiltration in this Order (Section XI.D.11) are based on recommendations provided by the USEPA Risk Reduction Laboratory. The Permittees should work closely with the water districts and water conservation districts to insure groundwater protection.

H. Municipal Inspection Programs

1. The Permittees are required to conduct inspections of construction sites, industrial facilities, and commercial establishments. An evaluation of the Permittees' inspection programs during the third term permit indicated a wide range of compliance and non-compliance with the inspection requirements. In many instances, the facilities' return to compliance was not properly documented. This Order includes requirements for a more effective inspection program and includes a performance measure, time to return to compliance, as a metric for program effectiveness.
2. During the third term, the Permittees initiated development of a risk-based prioritization scheme to prioritize facilities for inspections. In the absence of an approved risk-based prioritization scheme, the Permittees are required to use the prioritization methodology specified in the 3rd term permit. Upon approval of the risk-based prioritization scheme, the Permittees are required to utilize that system to prioritize their inspections.

I. Illegal Discharges/Illicit Connections

Illegal discharges to the storm drains could contribute to storm water and other surface water contamination. During the second term permit, the Permittees completed a reconnaissance survey of their open channels and underground storm drains to detect and eliminate any illicit connections (undocumented or unpermitted connections to the

²⁹ Managing Mosquitoes in Stormwater Treatment Devices, Marco E. Metzger, University of California Davis, Division of Agriculture and Natural Resources, Publication 8125.

MS4s). The Permittees have trained their staff on illegal discharge surveillance/cleanup procedures. Audits conducted during the third term permit indicated that this program element is generally carried out passively through complaint response. This Order requires each Permittee to revise this program element based on the Center for Watershed Protection's Illegal Discharge Detection and Elimination: A Guidance Manual for Program Development and Technical Assessments.

J. Technology-Based Effluent Limitations (Not Applicable)

K. Non-storm Water/De-Minimus Discharges

The MS4s generally convey non-storm water flows such as irrigation runoff, runoff from non-commercial car washes, runoff from miscellaneous washing and cleaning operations, and other nuisance flows generally referred to as de-minimus discharges. Federal regulations, 40 CFR Part 122.26(d)(2)(i)(B), prohibit the discharge of non-storm water containing pollutants into the MS4s and to waters of the U.S. unless they are regulated under a separate NPDES permit or are exempt as indicated in Effluent Limitations and Discharge Specifications, Section V.A of this Order. On March 24, 2009, the Regional Board adopted Order No. R8-2009-0003, to address de-minimus types of discharges. The Permittees need not get coverage under the de-minimus permit for the types of discharges listed under Section V.B, as long as they are in compliance with the conditions specified in this Order and the substantive requirements of Order No. R8-2009-0003.

L. Water Quality-Based Effluent Limitations (WQBELs) / Numeric Effluent Limits (NELs)

1. 40 CFR 122.44(d) requires that permits include WQBELs to attain and maintain applicable numeric and narrative water quality criteria to protect the beneficial uses of the receiving waters. Where numeric water quality criteria have not been established, 40 CFR 122.44(d) specifies that WQBELs may be established using USEPA criteria guidance under CWA section 304(a), proposed state criteria or a state policy interpreting narrative criteria supplemented with other relevant information, or an indicator parameter. In *Defenders of Wildlife, et al v. Browner*, No. 98-71080 (9th Cir., October 1999). The Court held that the CWA does not require "strict compliance" with State water quality standards for MS4 permits under section 301(b)(1)(C), but that at the same time, the CWA does give EPA discretion to incorporate appropriate water quality-based effluent limitations under another provision, CWA section 402(p)(3)(B)(iii). 40 CFR 122.44(k)(3) allows the use of BMPs to control or abate the discharge of pollutants when numeric effluent limitations are infeasible or when practices are reasonably necessary to achieve effluent limitations and standards or to carry out the purposes and intent of the CWA. The legislative history and the preamble to the federal storm water regulations indicated that the Congress and the USEPA were aware of the difficulties in regulating urban and storm water runoff solely through traditional end-of-pipe treatment. It is the Regional Board's intent to require the Permittees to implement best management practices consistent with the MEP standard in order to support

attainment of water quality standards. This Order includes receiving water limitations based on water quality objectives, it prohibits the creation of nuisance and requires the reduction of water quality impairment in receiving waters. The Permit includes a procedure for determining whether storm water discharges are causing or contributing to exceedances of receiving water limitations and for evaluating whether MSWMP must be revised to meet water quality standards. The Order establishes an iterative process to determine compliance with the receiving water limitations.

2. To support attainment of water quality standards, consistent with the maximum extent practicable standard, this Order requires the Permittees to implement a number of management practices and an iterative process to ensure that water quality standards are achieved. The Permittees are required to:
 - a. Implement BMPs at all its facilities and activities,
 - b. Require BMPs, including LID techniques, to be implemented at new and re-development project sites prior to accepting discharge into their conveyance systems,
 - c. Implement and annually evaluate the area-wide MSWMP and each Permittee's LIP for effectiveness in reducing pollutants in urban and storm water runoff, and
 - d. Perform monitoring and reporting to determine adequacy of BMPs within the permitted area.
3. This Order includes effluent limits for those constituents for which the Regional Board has already established TMDLs/WLAs. This Order requires Permittees to comply with established TMDL wasteload allocations specified for urban runoff and/or storm water by implementing the necessary BMPs. NPDES regulations at 40 CFR 122.44(d)(vii)(B) require that permits be consistent with wasteload allocations approved by U. S. EPA. This order requires the Permittees to comply with the urban runoff/storm water wasteload allocations. Consistent with the federal storm water laws and regulations (see Attachment 6, Fact Sheet), the Order does not include numeric effluent limits for other potential pollutants. Federal Clean Water Act requires the Permittees to have appropriate controls to reduce the discharge of pollutants to the maximum extent practicable (MEP), including management practices, control techniques and systems, design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants (33 USC 1342(p)(3)(B)). MEP is a dynamic performance standard and it evolves as our knowledge of urban runoff control measures increases. The WLAs are expressed as effluent limits³⁰. Since some of the compliance dates for the TMDLs are outside this permit term, the Permittees are required to monitor and report effectiveness of their BMPs with respect to pollutant reduction goal(s) as one measure of progress towards attainment of WLAs in accordance with the compliance schedules specified in the TMDL implementation plans.

³⁰ USEPA Nov. 22, 2002 Memorandum, Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on those WLAs.

4. Numeric effluent limits are included for de-minimus types of discharges from Permittee owned and/or operated facilities and activities and for total dissolved solids and total inorganic nitrogen for dry weather discharges.

M. Water Quality Control Plan (Basin Plan)

1. The Regional Board adopted a revised Water Quality Control Plan for the Santa Ana River Basin (hereinafter Basin Plan) that became effective on January 24, 1995. The Basin Plan designates beneficial uses, establishes water quality objectives, and contains implementation programs and policies to achieve those objectives for all waters in the Santa Ana Region addressed through the Plan.
2. More recently, the Basin Plan was amended significantly to incorporate revised boundaries for groundwater sub-basins, now termed "management zones", new nitrate-nitrogen and TDS objectives for the new management zones, and new nitrogen and TDS management strategies applicable to both surface and ground waters. This Basin Plan Amendment was adopted by the Regional Water Board on January 22, 2004. The State Water Resources Control Board (State Water Board) and Office of Administrative Law (OAL) approved the Amendment on September 30, 2004 and December 23, 2004, respectively. The U.S. Environmental Protection Agency approved the surface water standard and related provisions of the amendment on June 20, 2007. This Order includes TDS/TIN limits for direct dry weather discharges into surface waters within the permitted area based on the objectives specified in Table 4-1 of the Basin Plan, as amended. Storm water was considered to be an insignificant source for nitrogen/TDS in groundwater. These amendments were all incorporated into and updated in a single revised basin plan in February 2008.
3. In addition, the Basin Plan implements State Water Resources Control Board (State Water Board) Resolution No. 88-63, which established state policy that all waters, with certain exceptions, should be considered suitable or potentially suitable for municipal or domestic water supply. Beneficial uses recognized in the Basin Plan for surface waters in the permitted area are as follows:
 - a. Municipal and Domestic Supply,
 - b. Agricultural Supply,
 - c. Industrial Service Supply,
 - d. Industrial Process Supply,
 - e. Groundwater Recharge,
 - f. Hydropower Generation,
 - g. Water Contact Recreation,
 - h. Non-contact Water Recreation,
 - i. Warm Freshwater Habitat,
 - j. Limited Warm Freshwater Habitat,
 - k. Cold Freshwater Habitat,
 - l. Preservation of Biological Habitats of Special Significance,
 - m. Wildlife Habitat,
 - n. Rare, Threatened or Endangered Species, and

o. Spawning, Reproduction, and Development

The existing and potential beneficial uses of groundwater that could be impacted by the discharge of urban and storm water runoff within the permitted area include the following:

- a. Municipal and Domestic Supply,
 - b. Agricultural Supply,
 - c. Industrial Service Supply, and
 - d. Industrial Process Supply
4. The Basin Plan also incorporates by reference all State Board water quality control plans and policies including the 1990 Water Quality Control Plan for Ocean Waters of California (Ocean Plan) and the 1974 Water Quality Control Policy for Enclosed Bays and Estuaries of California (Enclosed Bays and Estuaries Plan). This Order implements the Basin Plan and other statewide plans and policies incorporated into the Basin Plan.

N. National Toxics Rule (NTR) and California Toxics Rule (CTR)

Regional Board believes that compliance with water quality standards through implementation of best management practices is appropriate for regulating urban and storm water runoff. . EPA articulated this position on the use of BMPs in storm water permits in the policy memorandum entitled, "Interim Permitting Approach for Water Quality-Based Effluent Limitations In Storm Water Permits" (61 FR 43761, August 9, 1996).³¹ NTR and CTR are blanket water quality criteria that apply to all surface water discharges. Water quality objectives specified in the Basin Plan are local numeric and narrative objectives that may be more stringent than the national or statewide water quality criteria.

O. State Implementation Policy (SIP) (Not Applicable)

See Section N., above.

P. Compliance Schedules and Interim Requirements

The Basin Plan contains schedules for achieving compliance with wasteload allocations for MSAR TMDLs and the Big Bear Lake Nutrient TMDLs. This Order requires the Permittees within these watersheds to comply with those time schedules for various deliverables as specified in the approved implementation plans. Additionally, since the final TMDL compliance dates are outside the term of this permit, this Order also requires the Permittees to monitor and report the effectiveness of BMPs implemented to evaluate progress towards attainment of TMDL WLAs by the time schedules specified in the implementation plans.

³¹ See discussions on Wet Weather Flows in the Federal Register/Vol. 65, No. 97/Thursday, May 18, 2000/Rules and Regulations

Q. Antidegradation Policy

40 CFR 131.12 requires that State water quality standards include an antidegradation policy consistent with the federal policy. The STATE BOARD established California's antidegradation policy in State Board Resolution No. 68-16. Resolution No. 68-16 incorporates the federal antidegradation policy where the federal policy applies under federal law. Resolution No. 68-16 requires that existing quality of waters be maintained unless degradation is justified based on specific findings. The Regional 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 permitted discharges are consistent with the antidegradation provisions of 40 CFR 131.12 and State Board Resolution No. 68-16.

R. Anti-Backsliding

Sections 402(o)(2) and 303(d)(4) of the CWA and federal regulations of 40 CFR 122.44(f) prohibit backsliding in NPDES permits. These anti-backsliding provisions require effluent limitations in a reissued permit to be as stringent as those in the previous permit, with some exceptions where limitations may be relaxed. All effluent limitations in this Order are at least as stringent as the effluent limitations in the previous Order. Therefore this Order conforms with the anti-backsliding requirements of the CWA.

S. Public Education/Participation

1. Public participation during the development of urban runoff management programs and implementation plans is necessary to ensure that all stakeholder interests and all applicable control measures are considered. In addition, the storm water regulations require public participation in the development and implementation of the storm water management program. As such, the Permittees are required to solicit and consider all comments received from the public and submit copies of the comments to the Executive Officer of the Regional Board with the annual reports. In response to public comments, the Permittees may modify reports, plans, or schedules prior to submittal to the Executive Officer.
2. Urban runoff contains pollutants from privately owned and operated facilities such as residences, businesses and commercial establishments and public and private institutions. A successful storm water management program should include the participation and cooperation of public entities, private businesses, and public and private institutions. The MSWMP recognizes public education as a critical element. As the population increases in the permitted area, it will be even more important to continue to educate the public regarding the impact of human activities on the quality of urban runoff.
3. In addition to the Regional Board, a number of other stakeholders are involved in the management of the water resources of the Region. These include, but are not limited to, the incorporated cities in the Region, Publicly Owned Treatment Works, the three counties, and the Santa Ana Watershed Project Authority and its member agencies. The entities listed in Appendix 2 are considered as potential dischargers

of urban runoff in the permitted area. It is expected that these entities will also work cooperatively with the Permittees to manage urban runoff. The Regional Board, pursuant to 40 CFR 122.26(a), has the discretion and authority to require non-cooperating entities to participate in this Order or to issue individual storm water permits.

4. Cooperation and coordination among the stakeholders (regulators, Permittees, the public, and other entities) are critical to optimize the use of finite public resources and to ensure economical management of water quality in the Region. Recognizing this fact, this Order focuses on watershed management and seeks to integrate the programs of the stakeholders, especially the holders of the three MS4 permits within the Region.
5. Public education is an important aspect of every effective urban runoff management program and the basis for changes in behavior at a societal level. Education of municipal planning, inspection, and maintenance department staffs is especially critical to ensure that municipal employees understand how their activities impact water quality, how to accomplish their jobs while protecting water quality, and their specific roles and responsibilities for compliance with this Order. Public education, designed to target various urban land users and other audiences, is also essential to inform the public of how individual actions affect receiving water quality and how adverse effects can be minimized.
6. Some urban runoff issues, such as general education and training, can be effectively addressed on a regional basis. Regional approaches to urban runoff management can improve program consistency and promote sharing of resources, which can result in implementation of more efficient programs. In particular, the counties of San Bernardino, Riverside and Orange and the municipalities within these counties are encouraged to cooperatively work together and generate a unified education and training program.

T. Monitoring and Reporting

1. 40 CFR 122.48 requires that all NPDES permits specify requirements for recording and reporting monitoring results. Sections 13267 and 13383 of the CWC authorize the Regional Board to require technical and monitoring reports. The Monitoring and Reporting Program establishes monitoring and reporting requirements to implement federal and State requirements.
2. An effective monitoring program characterizes urban runoff, identifies problem areas, and determines the impact of urban runoff on receiving waters and the effectiveness of BMPs. The Principal Permittee administers and conducts the storm water monitoring program for the Permittees. At present, this includes only wet weather monitoring of MS4 outfalls and receiving waters at designated locations in San Bernardino County.
3. The Regional Board and the Permittees recognize the importance of watershed management initiatives and regional planning and coordination in the development and implementation of programs and policies related to water quality protection, including urban runoff and TMDL programs. A number of such efforts are underway

where the Permittees are active participants, including the Storm Water Quality Standards Task Force and the Santa Ana River Reach 3 Bacteria TMDL Workgroup. This Order encourages continued participation in such programs. Furthermore, this Order recognizes that some of these planning efforts may result in significant changes to the Basin Plan. If this occurs, the Regional Board may reopen the permit to modify applicable terms and conditions through a public hearing process. In addition, the Regional Board also recognizes that in certain cases it may be necessary and appropriate to fund regional water quality monitoring programs by reallocating funds from lower priority local monitoring programs. The Executive Officer is authorized to approve, after public notification and consideration of all comments received, changes to the watershed management initiatives, regional planning and coordination activities and regional monitoring programs. If the Executive Officer receives any significant comments during the public notification process that cannot be resolved, it shall be scheduled for a public hearing during a regularly scheduled Board meeting. In light of adopted TMDLs and TMDLs that are expected to be adopted in the near future, this Order requires the Permittees to develop an Integrated Watershed Monitoring Plan that would show the nexus between various urban run-off related monitoring programs, TMDLs and program effectiveness assessments. The Monitoring and Reporting Program is provided in Attachment 5.

4. Under the auspices of the Stormwater Monitoring Coalition, Southern California Coastal Water Research Project prepared "Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California", August 2004 Technical Report No. 419. This report indicated that "...the lack of mass emissions stations in the inland counties hampers their ability to estimate the proportional contribution of these inland areas to cumulative loads downstream." The coalition consists of representatives from the Counties of Ventura, Los Angeles, Orange, San Bernardino, Riverside, and San Diego and the City of Long Beach. An integrated Watershed Monitoring Plan should address any shortcomings in the overall monitoring programs and avoid duplicative efforts within the same watershed.
5. Under the Storm Water Monitoring Coalition, the Southern California Coastal Water Research Project is coordinating a watershed monitoring effort. This Order requires the Permittees to continue their participation in this regional effort.

U. Standard and Special Provisions

Standard Provisions, reporting requirements, and notifications which apply to all NPDES permits in accordance with Federal NPDES Regulation 40 CFR 122.41, and additional conditions applicable to specified categories of permits in accordance with 40 CFR 122.42, are provided in Attachment 8. The discharger must comply with all standard provisions and with those additional conditions that are applicable under 40 CFR 122.42.

V. Notification of Interested Parties

The Regional Board has notified the dischargers and interested agencies and persons of its intent to prescribe Waste Discharge Requirements for the discharge and has provided them with an opportunity to submit their written comments and recommendations. Details of notification are provided in the Fact Sheet of this Order.

W. Consideration of Public Comment

The Regional Board has notified the Permittees, all known interested parties, and the public of its intent to issue waste discharge requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations. The Regional Board, in a public meeting, heard and considered all comments pertaining to the discharge and the requirements of this Order.

X. Alaska Rule

On March 30, 2000, USEPA revised its regulation that specifies when new and revised State and Tribal water quality standards (WQS) become effective for CWA purposes (40 CFR 131.21, 65 FR 24641, April 27, 2000). Under the revised regulation (also known as the Alaska rule), USEPA must approve new and revised standards submitted to USEPA after May 30, 2000 before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000 may be used for CWA purposes, whether or not approved by USEPA.

Y. Compliance with CZARA

The Coastal Zone Act Reauthorization Amendments of 1990 (CZARA), Section 6217(g), requires coastal states with approved coastal zone management programs to address non-point source pollution impacting or threatening coastal water quality. CZARA addresses five sources of non-point pollution: agriculture, silviculture, urban, marinas, and hydromodification. This Order addresses the management measures required for the urban category, with the exception of septic systems. Compliance with requirements specified in this Order relieves the Permittees of developing a non-point source plan, for the urban category, under CZARA. The Regional Board addresses septic systems through the administration of other programs.

Z. Stringency Requirements for Individual Pollutants (Not Applicable)

PERMIT REQUIREMENTS:

IT IS HEREBY ORDERED that the Permittees, in Order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Clean Water Act, as amended, and the regulations and guidelines adopted thereunder, shall comply with the following:

III. PERMITTEE RESPONSIBILITIES

A. Responsibilities of the Principal Permittee:

1. The Principal Permittee shall be responsible for managing the overall storm water program and shall:
 - a. Conduct chemical, biological, bacteriological water quality and other monitoring as required by this Order and any additional monitoring directed by the Executive Officer.
 - b. Prepare and submit to the Executive Officer of the Regional Board, unified reports, plans, and programs necessary to comply with this Order.
 - c. Coordinate and conduct Management Committee meetings as specified in the MSWMP.
 - d. Coordinate permit activities and participate in any subcommittees formed as necessary, to coordinate compliance activities with this Order.
 - e. Provide technical and administrative support and inform the Co-Permittees of the progress of other pertinent municipal programs, pilot projects, research studies, and other information to facilitate implementation of Co-Permittees' storm water program.
 - f. Coordinate the implementation of area-wide storm water quality management activities such as monitoring program, public education, pollution prevention, etc.
 - g. Gather and disseminate information on the progress of statewide municipal storm water programs and evaluate the information for potential use in the execution of this Order.
 - h. Monitor the implementation of the plans and programs required by this Order and determine their effectiveness in attaining water quality standards.
 - i. Coordinate with the Regional Board on activities pertaining to implementation of this Order, including the submittal of all reports, plans, and programs as required under this Order.
 - j. Develop and implement mechanisms, performance standards, design standards, etc., and assist in the consistent implementation of BMPs to the maximum extent practicable among the Permittees.
 - k. Cooperate in watershed management programs and regional and/or statewide monitoring programs.
 - l. Solicit and coordinate public input for any proposed major changes to areawide storm water management programs (MSWMP) and implementation plans.
 - m. In collaboration with the Co-Permittees, develop guidelines for defining expertise and competencies of storm water program managers and inspectors and develop and submit for approval a training program for various positions in accordance with these guidelines

- n. Within 6 months of permit adoption, the Principal Permittee shall coordinate a review of areawide documents with the Co-Permittees to determine the need for update or revisions and establish a schedule for those revisions. These documents include but are not limited to the Enforcement Consistency Guide, the Municipal Activities Pollution Prevention Strategy, Water Quality Management Plan Guidance and Template, BMP brochures and other areawide documents.
2. In addition, the activities of the Principal Permittee shall include but not be limited to the following for MS4 systems owned or operated by the Principal Permittee:
 - a. Within 12 months of adoption of this Order, the Principal Permittee shall develop and implement a Local Implementation Plan (LIP). A copy of the LIP, signed by the County Supervisor, shall be submitted to the Executive Officer within 12 months of adoption of this Order. The Plan should describe each program element per the MSWMP; the departments and personnel responsible for its implementation; applicable standard operating procedures, plans, policies, checklists, and drainage area maps; and tools and resources needed for its implementation. The LIP should also establish internal and external reporting and notification requirements to ensure accountability and consistency.
 - b. Take appropriate enforcement actions necessary to ensure compliance with Water Quality Management Plans, ordinances, implementation plans, and other applicable plans and policies.
 - c. Review and approve Water Quality Management Plans or other post-construction management plans prior to accepting discharges into its MS4 systems.
 - d. Conduct inspections, clean, and maintain the MS4 systems within its jurisdiction.
 - e. Review and revise, if necessary, policies and ordinances necessary to establish and maintain adequate legal authority, as required by the federal storm water laws and regulations.
 - f. Respond to or arrange for responding to emergency situations such as accidental spills, leaks, illicit connections/illegal discharges, etc., to prevent or to reduce the discharge of pollutants to storm drain systems and waters of the U.S.
 - g. Track, monitor, and keep training records of all personnel involved in the implementation of the Principal Permittee's LIP.
 - h. Implement management programs, monitoring programs, and related plans as required by this Order.
 - i. Solicit and coordinate public input for any proposed major changes to its local storm water management program and implementation plans.

B. Responsibilities of the Co-Permittees

1. Within 12 months of adoption of this Order, each Permittee shall develop and implement an LIP for its jurisdiction. The LIP shall describe the Permittee's legal authority, its ordinances, policies and standard operating procedures; identify departments and personnel for each task and needed tools and resources. The LIP

- shall establish internal departmental coordination and reporting requirements to ensure accountability and consistency. The LIP shall have the approval of the Permittee's City Manager or County Supervisor prior to its implementation and shall be updated on an as needed basis.
2. Each Co-Permittee shall be responsible for managing the storm water program within its jurisdiction and shall:
 - a. Implement all applicable program elements including but not limited to the management programs, monitoring programs, implementation plans and appropriate BMPs outlined in the MSWMP and the LIP within each respective jurisdiction, and take such other actions as may be necessary to meet the maximum extent practicable (MEP) standard.
 - b. Review and revise policies and ordinances necessary to establish and maintain adequate legal authority as stated in Section VI.1 of this Order and as required by the federal storm water regulations, 40CFR, Part 122.26(d)(2)(i)(A-F).
 - c. Obtain public input for any proposed major changes to its storm water management program and implementation plans.
 - d. Conduct storm drain system inspections and maintenance in accordance with the uniform criteria developed by the Management Committee.
 - e. Maintain up-to-date GIS-based MS4 facility maps. Annually review these maps and if necessary submit revised maps to the Principal Permittee for integration with the HCOC mapping and with the information required for preparation of the Annual Report.
 - f. Prepare and submit to the Principal Permittee in a timely manner all required information necessary to develop a unified Annual Report for submittal to the Executive Officer of the Regional Board.
 3. The Co-Permittees' activities shall include, but not be limited to, the following:
 - b. Designate at least one representative to the Management Committee and attend at least 7 out of the 8 Management Committee meetings per year. The Principal Permittee shall be notified immediately, in writing of any changes to the designated representative to the Management Committee.
 - c. Conduct and/or coordinate with the Principal Permittee any surveys and characterizations needed to identify pollutant sources from specific drainage areas.
 - d. Review and comment on all plans, strategies, management programs, monitoring programs, as developed by the Management Committee, the Principal Permittee or any subcommittee to comply with this Order.
 - e. Participate in committees or subcommittees formed to address storm water related issues to comply with this Order.
 - f. Respond to or arrange for responding to emergency situations such as accidental spills, leaks, illegal discharges/illicit connections, etc. to prevent or reduce the discharge of pollutants to storm drain systems and waters of the U.S.

- g. Pursue enforcement actions as necessary within its jurisdiction for violations of storm water ordinances, prohibitions on illicit connections and illegal discharges, and other elements of its storm water management program.
- h. Track, monitor, and keep training records of all personnel involved in the implementation of its LIP.
- i. Track and monitor operation and maintenance of post-construction BMPs installed in areas within each Permittee's jurisdiction.

C. Implementation Agreement

As needed, the Permittees shall evaluate the storm water management structure and the Implementation Agreement and determine the need for any revision. The annual report shall include the finding of any such review and provide a schedule if revisions are planned. The Implementation Agreement shall be reviewed and revised, if necessary, to include any cities that were not signatories to this agreement or other non-traditional entities that own or operate conveyance systems within the permitted area. If the Implementation Agreement is revised, a copy of the signature page and any revisions to the Agreement shall be included in the annual report.

IV. DISCHARGE PROHIBITIONS

- A. In accordance with the requirements of 40 CFR 122.26(d)(2)(i)B) and 40 CFR 122.26(d)(2)(i)(F), the Permittees shall prohibit illegal connections and illicit discharges (non-storm water) from entering municipal separate storm sewer systems unless such discharges are either authorized by a NPDES permit, or not prohibited in accordance with Section V, below.
- B. The discharge of urban runoff from Permittees' municipal separate storm sewer systems to waters of the U. S. containing pollutants, including trash and debris, that have not been reduced to the maximum extent practicable is prohibited.
- C. The Permittees shall effectively prohibit the discharge of non-storm water into the MS4s unless authorized by a separate NPDES permit, granted a waiver or as otherwise specified in Section V, below.
- D. Non-storm water discharges from public agency activities into waters of the U.S. are prohibited unless the non-storm water discharges are permitted by a NPDES permit, granted a waiver, or are as otherwise specified in Section V, below.
- E. Discharges from the MS4s shall be in compliance with the discharge prohibitions contained in Chapter 5 of the Basin Plan.
- F. Discharges into and from the MS4s in a manner causing, or threatening to cause a condition of pollution, contamination, or nuisance, as that term is defined in Section 13050 of the Water Code, into waters of the State are prohibited.
- G. The discharge of any substances in concentrations toxic to animal or plant life is prohibited.

- H. The discharge of any radiological, chemical, or biological warfare agent or high level radiological waste is prohibited.
- I. The disposal of pollutants³² onto public or private land is prohibited.

V. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS

For purposes of this Order, a discharge may include storm water or other types of discharges identified below.

A. Authorized Discharges:

The discharges identified below need not be prohibited by the Permittees except if identified by the Permittees or the Executive Officer as a significant source of pollutants or as a significant vehicle that may cause pollutants to migrate to waters of the U.S. The MSWMP shall include public education and outreach activities directed at reducing these discharges even if they are not substantial contributors of pollutants to the MS4s and/or the receiving waters.

1. Discharges composed entirely of storm water;
2. Air conditioning condensate;
3. Irrigation water (See Section C., Nonpoint Source Discharges, below);
4. Passive foundation drains³³;
5. Passive footing drains³⁴;
6. Water from crawl space pumps³⁵;
7. Non-commercial vehicle washing, e.g. residential car washing (excluding engine degreasing) and car washing for fundraisers by non-profit organizations³⁶;
8. Dechlorinated swimming pool discharges (cleaning wastewater and filter backwash shall not be discharged into the MS4s or to waters of the U.S.)
9. Diverted stream flows³⁷;
10. Rising ground waters and natural springs³⁸;

³² Examples are illegal dumping of wastes containing pollutants to private or public land that could impact the quality of runoff from the area.

³³ The discharge is allowed only if the source water drained from the foundation is stormwater or uncontaminated groundwater. Discharges from contaminated groundwater may require coverage under the General Groundwater Cleanup Permit (Order No. R8-2007-0008, NPDES Permit No CAG918001) or its latest version.

³⁴ Only uncontaminated discharge is allowed. Otherwise, coverage under Order No. R8-2007-0008 may be required.

³⁵ The discharge is allowed only if it is uncontaminated; otherwise permit coverage under the General Permit for Discharges from Utility Vaults and Underground Structures, Water Quality Order No. 2006-0008-DWQ (NPDES No. CAG990002) may be required.

³⁶ Charity car washes should be limited to bona-fide 501 agencies.

³⁷ Diversion of stream flows that encroach into waters of the U.S. requires a 404 permit from the U.S. Army Corps of Engineers and a 401 Water Quality Certification from the Regional Board. Stream diversion that requires active pumping may also require coverage under the De Minimus Permit, Order No. R8-2009-0003.

11. Uncontaminated ground water infiltration as defined in 40 CFR 35.2005 (20) and uncontaminated pumped groundwater,
12. Flows from riparian habitats and wetlands;
13. Emergency fire fighting flows (i.e., flows necessary for the protection of life and property do not require BMPs and need not be prohibited. However, appropriate BMPs to reduce the discharge of pollutants consistent with the MEP standard must be implemented when they do not interfere with health and safety issues.
14. Waters not otherwise containing wastes as defined in California Water Code Section 13050 (d), and
15. Other types of discharges identified and recommended by the Permittees and approved by the Regional Board.
16. When types of discharges listed above are identified as a significant source of pollutants or a significant vehicle that may cause pollutants to migrate to the receiving waters, a Permittee must either: prohibit the discharge category from entering the MS4 or ensure that "Source Control BMPs" and Treatment Control are implemented to reduce or eliminate pollutants resulting from the discharge. The Permittees must evaluate the authorized discharges, as listed above to determine if any are a significant source of pollutants to the MS4 and notify the Executive Officer if any are a significant source of pollutants to the MS4.

B. Discharge Specifications/De-Minimus Discharges from Permittee Owned and/or Operated Facilities/Activities:

The Permittees shall prohibit the following categories of non-storm water discharges (de minimus discharges) into waters of the U.S. from Permittee-owned and/or operated facilities/activities unless the stated conditions are met. The de minimus types of discharges listed in the General De Minimus Permit shall be in compliance with the Regional Board's General De Minimus Permit for Discharges to Surface Waters, Order No. R8-2009-0003, NPDES No. CAG 998001:

1. Discharges from potable water sources, including water line flushing, superchlorinated water line flushing; discharges resulting from the maintenance of potable water supply pipelines, tanks, reservoirs, etc.; discharges from potable water supply systems resulting from initial system startup, routine startup, sampling activities, system failures, pressure release, etc.; fire hydrant system testing or flushing; and hydrostatic test water: Planned discharges shall be dechlorinated to a concentration of 0.1 ppm³⁹ or less, pH adjusted if necessary, and volumetrically and velocity controlled to prevent hydrologic conditions of concern in receiving waters.

³⁸ Discharge of rising ground water and natural springs into surface water is only allowed if the groundwater is uncontaminated. Otherwise, coverage under Order No. R8-2007-0008 may be required.

³⁹ Total residual chlorine = 0.1 mg/l or parts per million (ppm) or less; compliance determination shall be at a point before the discharge mixes with any receiving water.

2. Discharges from lawn, greenbelt and median watering and other irrigation runoff⁴⁰ from non-agricultural operations: These discharges shall be minimized through public education and water conservation efforts. Also see Section X.E, Residential Program.
3. Dechlorinated swimming pool discharges: Dechlorinated to a concentration of 0.1 ppm⁴¹ or less, pH adjusted and reoxygenated if necessary, and volumetrically and velocity controlled to prevent hydrologic condition of concern in receiving waters. Swimming pool cleaning wastewater and filter backwash shall not be discharged to the MS4s or to waters of the U.S.
4. Construction dewatering wastes⁴²: The following limits shall be met at approved monitoring locations. The maximum daily concentration limit for total suspended solids shall not exceed 75 mg/l, sulfides 0.4 mg/l, oil and grease 15 mg/l, total petroleum hydrocarbons 0.1 mg/l; the pH of the discharge shall be within 6.5 to 8.5 pH units and there shall be no visible oil and grease in the discharge.
5. Discharges from facilities that extract, treat and discharge water diverted from waters of the U.S.: These discharges shall meet the following conditions: (1) The discharges to waters of the U.S. must not contain pollutants added by the treatment processes or pollutants in greater concentration than the influent; (2) The discharge must not cause or contribute to a condition of erosion; (3) The extraction and treatment must be in compliance with Section 404 of the Clean Water Act; and (4) Conduct monitoring in accordance with Monitoring and Reporting Program attached to this Order.
6. Table 4-1 of the Basin Plan incorporates TDS/TIN⁴³ limits for direct discharges into surface waters in specified management zones within the Santa Ana Region. Permittees discharging to those receiving waters shall comply with the following for dry weather conditions.
 - a. For discharges to surface waters, where groundwater will not be affected by the discharge, the maximum daily concentration (in mg/L) for TDS and/or TIN of the discharge shall not exceed the water quality objectives for the receiving surface water where the effluent is discharged, as specified in Table 4-1 of the Basin Plan.
 - b. For discharges to surface waters, where the groundwater will be affected by the discharge, the TDS and/or TIN concentrations of the effluent shall not exceed the water quality objectives for the surface water where the effluent is discharged and the affected groundwater management zone, as specified in Table 4-1 of the Basin Plan. The more restrictive water quality objectives shall govern. However, treated effluent exceeding the groundwater management zone water quality objectives may be returned to the same management zone from which it was

⁴⁰ Non-agricultural irrigation using recycled water must comply with the statewide permit for Landscape Irrigation Using Recycled Water and the State Department Health guidelines.

⁴¹ See footnote 25.

⁴² These are typically construction dewatering involving contaminated groundwater that may or may not be commingled with stormwater. Requirements for construction dewatering of stormwater are covered under the General Permit for Stormwater Discharges Associated with Construction Activity Order No. 99-08-DWQ. Where pollutants other than tss, sulfides, oil and grease, TPH and pH are a concern in the groundwater, coverage under Order No. R8-2007-0008 may be required.

⁴³ TDS/TIN=Total dissolved solids/total inorganic nitrogen.

extracted without reduction of the TDS or TIN concentrations so long as the concentrations of those constituents are no greater than when the groundwater was first extracted. Incidental increases in the TDS and TIN concentrations (such as may occur during air stripping) of treated effluent will not be considered as increases for the purposes of determining compliance with this discharge specification.

7. The Regional Board may add categories of non-storm water discharges that are not significant sources of pollutants or remove categories of non-storm water discharges listed above based upon a finding that the discharges are a significant source of pollutants.
8. See Section XV for additional requirements for de-minimus types of discharges.

C. Non-point Source (NPS) Discharges:

Consistent with the State Water Resources Control Board's 2004 "Policy for the Implementation and Enforcement of the Nonpoint Source Pollution Control Program," the Regional Board may issue Waste Discharge Requirements for non-point source (NPS) pollutant discharges, such as agricultural irrigation runoff or return flows that are not subject to NPDES requirements, if identified as a significant source of pollutants. In addition, if the water quality significance of NPS discharges is not clearly understood, the Regional Board may issue conditional waivers of Waste Discharge Requirements to NPS dischargers, and require monitoring to gather the information necessary to effectively manage these discharges.

D. Water Quality Based Effluent Limitations - Total Maximum Daily Loads (TMDLs)

1. Middle Santa River (MSAR) Watershed Bacteria Indicator TMDL

- a. **Waste Load allocations:** The MS4 Permittees in the MSAR watershed (County, Chino, Chino Hills, Fontana, Montclair, Ontario, Rancho Cucamonga, and Rialto) shall comply with the following MSAR Watershed Bacterial Indicator TMDL waste load allocation (WLA):
- b. **Dry Weather Conditions** (April 1 through October 31): Compliance shall be achieved as soon as possible, but no later than December 31, 2015⁴⁴.
 - i. *Fecal Coliform WLA*⁴⁵

5-sample/30-day logarithmic mean less than 180 organisms/100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30-day period.
 - ii. *E. Coli WLA*

⁴⁴ Since the TMDL compliance date is outside the term of this permit, monitoring and reporting pollution reduction at waste load allocation monitoring locations in conjunction with the iterative BMP approach is appropriate to demonstrate adequate program effectiveness and progress towards compliance with the TMDL/WLA by the compliance date.

⁴⁵ The fecal coliform WLA becomes ineffective upon the replacement of the REC1 fecal coliform objectives in the Basin Plan by approved REC1 objectives based on E. Coli.

5-sample/30-day logarithmic mean less than 113 organisms/100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.

- c. **Wet Weather Conditions** (November 1 through March 31): Compliance shall be achieved as soon as possible, but no later than December 31, 2025⁴⁶.

i. *Fecal Coliform WLA*⁴⁷

5-sample/30-day Logarithmic Mean less than 180 organisms/ 100mL, and not more than 10% of the samples exceed 360 organisms/100mL for any 30-day period.

ii. *E. Coli WLA*

5-sample/30-day logarithmic mean less than 113 organisms/ 100mL, and not more than 10% of the samples exceed 212 organisms/100mL for any 30-day period.

- d. **MSAR TMDL Urban Source Evaluation Program and Waste Load Allocation Monitoring and Reporting:**

- i. On June 14, 2007, the TMDL taskforce members submitted a source evaluation and a monitoring plan. The Regional Board approved these plans on June 29, 2007, Resolution No. R8-2007-0046. A revised monitoring plan and an urban bacterial indicator source evaluation plan were approved by the Regional Board on April 18, 2008, Resolution No. R8-2008-0044. The MS4 Permittees within the MSAR watershed shall continue to conduct monitoring and source evaluations in accordance with the approved plans and report the findings in accordance with the schedules specified in the approved plans.
- ii. By February 15, 2010, the Permittees shall revise the MSWMP to incorporate a plan and a schedule to achieve necessary triennial bacterial source reduction for meeting the bacterial indicator WLAs based on the schedule established in the TMDLs. The plan shall at a minimum be based on actual or literature documentation of estimated effectiveness of BMPs to address identified or potential urban bacterial sources in the watershed. The plan shall include workplans or actions proposed by each Permittee within the MSAR⁴⁸ to be implemented within its jurisdiction to attain necessary pollution reductions.
- iii. The MS4 Permittees within the MSAR watershed shall track and annually report their progress towards compliance (pre-compliance evaluation

⁴⁶ Since the final TMDL compliance date is outside the term of this permit, monitoring and reporting pollution reduction at waste load allocation monitoring locations in conjunction with the iterative BMP approach is appropriate to demonstrate adequate program effectiveness and progress towards compliance with the TMDL/WLA by the compliance date.

⁴⁷ The fecal coliform WLA becomes ineffective upon the replacement of the REC1 fecal coliform objectives in the Basin Plan by approved REC1 objectives based on E. Coli.

⁴⁸ The TMDL Taskforce may propose a consolidated workplan to address the problem, in lieu of individual workplans and actions.

monitoring) with the WLAs at the locations specified in the MSAR Bacterial Indicator TMDL or other appropriate urban source monitoring locations.

- iv. If triennial bacterial source reduction goals at the specified monitoring locations are not met, the Permittees within the affected drainage areas shall comply with the following procedure:
 - a) Each Permittee (or the TMDL taskforce) upstream of the urban source monitoring points shall evaluate and characterize discharges from its significant (36 inches or larger in diameter) outfall locations.
 - b) Each Permittee (or the TMDL taskforce) shall submit a report to the Executive Officer with proposed actions 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 failure to attain bacterial source reduction goals.
 - c) The report may be incorporated in the annual report unless the Executive Officer directs a different submittal date. In the annual report due beginning November 15, 2010 and every triennial review year thereafter, the Permittees in the MSAR watershed shall report any revisions to the MSWMP, LIP or WQMP in response to TMDL requirements. Future workplans or actions to reduce bacterial sources shall consider the impact of projected population growth in the watershed and within each jurisdiction. Effectiveness evaluations shall be based on actual population change.
- e. **Watershed-wide Monitoring Program:** The Permittees shall continue to participate in the watershed-wide monitoring program until the TMDL numeric targets identified in Section D.1, above are achieved⁴⁹.

2. Big Bear Lake Nutrient TMDL for Dry Hydrological Conditions

- a. The City of Big Bear Lake, the County of San Bernardino and San Bernardino County Flood Control District shall meet the following urban WLA for phosphorus during dry hydrological conditions⁵⁰ as soon as possible, but no later than December 31, 2015.

Total Phosphorus (lbs/yr)⁵¹ = 475
- b. The TMDL for Dry Hydrological Conditions does not require nutrient reductions from external watershed sources, hence, the City of Big Bear and the County of

⁴⁹ See Monitoring And Reporting Program Section.

⁵⁰ The City of Big Bear and the County of San Bernardino are required to comply with the phosphorus TMDL by complying with the WLA for Dry Hydrological Conditions as soon as possible, but no later than December 31, 2015. However, since the TMDL for Dry Hydrological Conditions does not specify nutrient reductions from external watershed sources, including urban discharges (WLA), resorts and open space/forested lands (LAs), these external load dischargers are still responsible for reducing their contributions to the internal nutrient loads, which are lake sediment and macrophytes..

⁵¹ Specified as an annual average for dry hydrological conditions.

San Bernardino are required to implement BMPs in the watershed so as not to exceed the urban WLA for phosphorus.

- c. The Permittees in the Big Bear Lake watershed, in collaboration with the Big Bear Lake Nutrient TMDL Taskforce, shall implement the approved (Regional Board Resolution No. R8-2008-0070) Big Bear Lake In-lake Nutrient Monitoring Plan dated November 30, 2007.
- d. The Permittees in the Big Bear Lake watershed, in collaboration with the Big Bear Lake Nutrient TMDL Taskforce, shall implement the approved (Regional Board Resolution No. R8-2009-0043) Big Bear Lake Watershed-wide Nutrient Monitoring Plan (May 2009) in accordance with the schedules specified in Resolution No. R8-2009-0043.
- e. The Permittees in the Big Bear Lake watershed, in collaboration with the Big Bear Lake Nutrient TMDL Taskforce, shall implement the lake management plan upon approval by the Regional Board.
- f. The Permittees are currently meeting the calculated Waste Load Allocation (WLA) for Total Phosphorus. No reduction from external sources is required in the TMDL for dry weather conditions. This Order requires the County and the City of Big Bear Lake to monitor continued compliance with the WLA so as not to exceed this level of loading into the Lake.
- g. An iterative approach is appropriate to demonstrate compliance with the phosphorus WLA in drainage areas tributary to Big Bear Lake.
- h. Compliance with the phosphorus WLA will be evaluated through the use of a watershed model. The Permittees in the Big Bear Lake watershed or the Big Bear Lake Nutrient TMDL Taskforce, shall provide the results of the first model update by February 15, 2011, and every three years thereafter.
- i. If watershed monitoring shows exceedances of the phosphorus WLA, despite implementation of the lake management plan and the MSWMP and other requirements of this Order, the Permittees within the affected drainage areas shall comply with the following procedure:
 - i. Each Permittee⁵² upstream of the WLA monitoring points shall evaluate and characterize discharges from its significant outfall locations.
 - ii. The Permittees⁵³ shall submit a report with proposed actions 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 exceedances of the WLA.
 - iii. The report may be incorporated into the storm water annual report.

⁵² This task may be completed by the Big Bear Lake Nutrient TMDL Taskforce.

⁵³ This task may be completed by the Big Bear Lake Nutrient TMDL Taskforce.

- h. The City of Big Bear Lake, County of San Bernardino and San Bernardino Flood Control District shall participate in the stakeholder effort to achieve the following Big Bear Lake Nutrient TMDL numeric targets:

Table 5. Big Bear Lake Nutrient TMDL Numeric Targets

Indicator	Target Value ^a
Total P concentration	Annual average ^b no greater than 35 µg/L; to be attained no later than 2015 (dry hydrological conditions), 2020 (all other times) ^c
Macrophyte Coverage	30-40% on a total lake area basis; To be attained by 2015 (dry hydrological conditions), 2020 (all other times) ^{c,d}
Percentage of Nuisance Aquatic Vascular Plant Species	95% eradication on a total area basis of Eurasian Watermilfoil and any other invasive aquatic plant species; to be attained no later than 2015 (dry hydrological conditions), 2020 (all other times) ^{c,d}
Chlorophyll a concentration	Growing season ^e average no greater than 14 µg/L; to be attained no later than 2015 (dry hydrological conditions), 2020 (all other times) ^c

a Compliance with the in-lake targets to be achieved as soon as possible, but no later than the dates specified

b Annual average determined by the following methodology: the nutrient data from both the photic composite and discrete bottom samples are averaged by station number and month; a calendar year average is obtained for each sampling location by averaging the average of each month; and finally, the separate annual averages for each location are averaged to determine the lake-wide average. The in-lake open-water sampling locations used to determine the annual average are MWDL1, MWDL2, MWDL6, and MWDL9 (see 1.B.4. Implementation Task 4.2, Table 5-9a-i).

c Compliance date for wet and/or average hydrological conditions may change in response to approved TMDLs for wet/average hydrological conditions.

d Calculated as a 5-yr running average based on measurements taken at peak macrophyte growth as determined in the Aquatic Plant Management Plan (see 1.B.4. Implementation, Task 6C)

e Growing season is the period from May 1 through October 31 of each year. The open-water sampling locations used to determine the growing season average are MWDL1, MWDL2, MWDL6, MWDL9 (see 1.B.4. Implementation Task 4.2, Table 5-9a-i). The chlorophyll a data from the photic samples are average by station number and month; a growing season average is obtained for each sampling location by averaging the average of each month; and finally, the separate growing season averages for each location are averaged to determine the lake-wide average.

- i. **Storm Water Program Modification:** The City of Big Bear Lake, County of San Bernardino, and San Bernardino Flood Control District shall revise their LIP, as needed, to incorporate the findings from TMDL implementation activities. These revisions shall include: (1) the results of the nutrient monitoring programs; (2) an evaluation of the effectiveness of the control measures in meeting the phosphorus WLAs; (3) any additional control measures proposed to be implemented if the WLA or numeric targets are exceeded, including control

measures for controlling nutrient inputs from new developments and/or new sources; and (4) a progress report evaluating progress towards meeting the WLAs (pre-compliance evaluation monitoring⁵⁴).

- j. Table 5 lists the Big Bear Lake Nutrient TMDL Implementation Plan/Schedule Report Due dates and tasks. The City of Big Bear and the County of San Bernardino shall participate and comply with the TMDL Implementation Plan and the schedules.

Table 6. Big Bear Lake Nutrient TMDL Implementation Plan/Schedule Report Due Dates

Task / TMDL Phase 1	Description	Compliance Date-As soon As Possible but No Later Than
Task 4	Nutrient Water Quality Monitoring Program 4.1 Watershed-wide Nutrient Monitoring Plan(s) 4.2 Big Bear Lake Nutrient Monitoring Plan(s) ⁵⁵	Plan/schedule due November 30, 2007 Annual reports due February 15
Task 6 ³	Big Bear Lake – Lake Management Plan, including: 6A. Big Bear Lake and Watershed Model Updates 6B. Big Bear Lake In-Lake Sediment Nutrient Reduction Plan 6C. Big Bear Lake Aquatic Plant Management Plan	Plan/schedule due August 31, 2008 ⁵⁶ Annual reports due February 15

3. Knickerbocker Creek Sole Source Pathogen Investigation and Control

- a. The City of Big Bear Lake shall continue to participate in and implement the January 2008 Phase 2 Monitoring and Reporting Program in accordance with the agreed sampling locations, parameters, schedule, and protocol.
- b. At the completion of the Phase 2 monitoring program, the City of Big Bear Lake shall review results of the pathogen investigation and submit a final report to the Executive Officer summarizing the data including an evaluation of the efficacy of the control measures implemented in reducing bacteria in Knickerbocker Creek.
- c. The City of Big Bear Lake shall annually review and revise, if necessary, the control measures implemented and undertake an iterative approach until water quality objectives within Knickerbocker Creek are attained, unless it can be demonstrated that the pathogen sources are from uncontrollable sources.
- d. The City of Big Bear Lake shall continue to work with Regional Board staff and the Storm Water Quality Standards Task Force to review and update designated

⁵⁴ Pre-compliance evaluation monitoring is monitoring conducted prior to the compliance date to evaluate effectiveness of pollution reduction efforts.

⁵⁵ Tasks 4.1 and 4.2 have been completed.

⁵⁶ A Lake Management Plan has been submitted and is currently being refined.

uses and related water quality objectives for Knickerbocker Creek. This may result in different water quality objectives for bacteria.

4. Big Bear Lake Mercury TMDL

- a. Pending adoption of the Mercury TMDL, the City of Big Bear Lake shall participate in the development and implementation of monitoring programs and control measures, including any BMPs that the City is currently implementing or proposing to implement. The City shall classify as high priority sites all construction sites that are adjacent to (within 200 feet) or discharging directly to Big Bear Lake. The same classification should apply to construction sites that are tributary to tributary surface waterbodies listed for sediments or turbidity. These high priority sites shall specify low impact development techniques, source control, site design, pollution prevention and structural treatment control BMPs to control sediment discharges to the Lake and its tributaries.
- b. The City of Big Bear Lake shall undertake the BMP iterative approach until a TMDL waste load allocation for urban runoff is adopted for mercury and the City has met its mercury WLAs.

VI. RECEIVING WATER LIMITATIONS

- A. Discharges from the MS4s shall not cause or contribute to exceedances of receiving water quality standards (designated beneficial uses and water quality objectives) contained in Chapter 4 of the Basin Plan, and amendments thereto, for surface or groundwater.
- B. The MSWMP and its components, including LIPs shall be designed to achieve compliance with receiving water limitations consistent with the MEP standard. It is expected that compliance with receiving water limitations will be achieved through an iterative process and the application of increasingly more effective BMPs.
- C. The Permittees shall comply with Section VI.A of this Order through timely implementation of control measures and other actions to reduce pollutants in urban and storm water runoff in accordance with the MSWMP and its components and other requirements of this Order, including any modifications thereto.
- D. Upon a determination by either the Permittees or the Executive Officer that the discharges from the MS4 systems are causing or contributing to an exceedance of an applicable water quality standard, the Permittees shall promptly notify either by phone or by e-mail and, thereafter submit a report within 30 days (or if approved by the Executive Officer, this report may be incorporated into the annual report) to the Executive Officer for review and approval. At a minimum, the report shall:
 - a. Describe BMPs that are currently being implemented and additional BMPs that will be implemented to prevent or reduce those pollutants that are causing or contributing to the exceedance of water quality standards.
 - b. Address the cause of the impairment or exceedance, and the technical and economic feasibility of control actions available to the Permittees to reduce or eliminate the impairment or exceedance consistent with the MEP standard.

- c. Include an implementation schedule.
 - d. Contain a comparative analysis of monitoring data to the USEPA Multi-Sector Permit Parameter Benchmark Values and applicable water quality objectives for inland surface streams as specified in Chapter 4 of the Basin Plan.
 - e. A status report on the effectiveness of the pollution source investigation and control plan implementation to address exceedance of water quality objectives or elevated pollutant levels above benchmark values may be incorporated in the annual report unless the Executive Officer directs a different submittal date. The transmittal letter shall indicate that the annual report contains a description of additional BMPs proposed, pollution investigation report, and/or pollution source investigation and control plan.
- E. The Executive Officer may require modifications to the plan and/or report. The Permittees shall submit any modifications required by the Executive Officer within 30 calendar days of notification;
 - F. Within 60 calendar days following the Executive Officer's approval of the plan and/or report described above, the Permittees shall revise the storm water management programs (MSWMP and LIP) and monitoring program to incorporate the additional BMPs that will be implemented, the implementation schedule, and any additional monitoring required;
 - G. Permittees must implement the revised the MSWMP, the LIP and the monitoring and reporting programs in accordance with the schedule approved by the Executive Officer.
 - H. So long as the Permittees have complied with the procedures set forth above and are implementing the revised storm water management programs, the Permittees do not have to repeat the same procedure for continuing or recurring exceedances of the same receiving water limitations unless the Executive Officer determines it is necessary to develop additional BMPs.
 - I. Nothing in Section VI.H must prevent the Regional Board from enforcing any provision of this Order while the Permittee prepares and implements the above programs.

VII. LEGAL AUTHORITY/ENFORCEMENT

- A. The Permittees shall maintain adequate legal authority to control the discharge of pollutants to their MS4s through ordinance, statute, permit, contract or similar means and enforce these authorities. This legal authority must, at a minimum, include and authorize the Permittees to:
 1. Carry out all inspections, surveillance, and monitoring necessary to determine compliance and noncompliance with local ordinances and permits. The Permittee must have authority to enter, sample, monitor, inspect, take measurements, photographs, videos, review and copy records, and require reports from industrial, commercial, and construction sites discharging into their MS4s;
 2. Recover its cost to correct a discharger's significant non-compliance or to respond to immediate and serious threat to water quality violations through various mechanisms, such as forfeiture of permit deposits, trust funds/bonds or other short-

term funding sources to allow Permittees to immediately address and remedy serious water quality violations at construction, industrial, or commercial sites.

3. Require the use of BMPs to prevent or reduce the discharge of pollutants into MS4s;
 4. Require documentation on the effectiveness of BMPs implemented to reduce the discharge of pollutants to the MS4s;
 5. The Permittees' storm water ordinances or other local regulatory mechanisms shall include sanctions to ensure compliance. Sanctions shall include but are not limited to: verbal and/or written warnings, notice of violation or non-compliance, monetary penalties, non-monetary penalties, bonding requirements, stop work or cease and desist Orders and/or permit denials/revocations/stays for non-compliance, civil or criminal prosecution. These sanctions shall be issued in a decisive manner within a predetermined timeframe, from the time of the violation's occurrence and/or follow-up inspection.
- B. The Permittees shall document progressive and decisive enforcement actions against violators of their storm water codes and ordinances in accordance with the formalized enforcement procedures developed by the Management Committee.
 - C. The Permittees shall use the most effective tool(s) at their disposal (such as Stop Work Orders and suspended inspections) to achieve immediate compliance. Permittees must have the ability to enforce any violations of the Stop Work Order through either an automatic fine or other effective means.
 - D. Within three (3) years of adoption of this Order, the Permittees shall implement fully adopted ordinances that would specify control measures for known pathogen or bacterial sources such as animal wastes if those types of sources are present within their jurisdiction.
 - E. The Permittees shall continue to provide notification to Regional Board staff of storm water related information obtained during site inspections of industrial and construction sites regulated by the Statewide General Storm Water Permits or sites which should be regulated under the State's General Permits. The notification should include any observed violations of the General Permits or local requirements, prior history of violations, any enforcement actions taken and will be taken by the Permittees, and any other relevant information.
 - F. The Permittees shall specify in the LIP the requirements to be implemented through interagency agreements, other mechanisms or procedures to control the contribution of pollutants into their MS4s prior to accepting connections from owners of other MS4 systems outside the Permittees' jurisdiction.
 - G. The Permittees shall annually review their water quality ordinances and evaluate their effectiveness in prohibiting the following types of discharges to the MS4s (the Permittees may propose appropriate control measures in lieu of prohibiting these discharges, where the Permittees are responsible for ensuring that dischargers adequately maintain those control measures):

1. Sewage (also prohibited under the Statewide SSO Order⁵⁷);
 2. Wash water resulting from the hosing or cleaning of gas stations, auto repair garages, and other types of automobile service stations;
 3. Discharges resulting from the cleaning, repair, or maintenance of any type of equipment, machinery, or facility, including motor vehicles, concrete mixing equipment, portable toilet servicing, etc.;
 4. Wash water from mobile auto detailing and washing, steam and pressure cleaning, carpet/upholstery cleaning, pool cleaning and other such mobile commercial and industrial activities;
 5. Water from cleaning of municipal, industrial, and commercial sites, including parking lots, streets, sidewalks, driveways, patios, plazas, work yards and outdoor eating or drinking areas, etc.;
 6. Runoff from material storage areas or uncovered receptacles that contain chemicals, fuels, grease, oil, or other hazardous materials⁵⁸;
 7. Discharges of runoff from the washing of toxic materials⁵⁹ from paved or unpaved areas;
 8. Discharges of pool or fountain water containing chlorine, biocides, or other chemicals; pool filter backwash containing debris and chlorine;
 9. Pet waste, yard waste, litter, debris, sediment, etc.; and,
 10. Restaurant or food processing facility wastes such as grease, floor mat and trash bin wash water, food waste, etc.
- H. The Permittees shall include in the Local Implementation Plan (LIP) their legal authorities and mechanisms to implement the various program elements required by this Order to properly manage, reduce and mitigate potential pollutant sources within each Permittee's jurisdiction. The LIP shall include citations of appropriate local ordinances, identification of departmental jurisdictions and key personnel in the implementation and enforcement of these ordinances. The LIP shall include procedures, tools and timeframes for progressive enforcement actions and procedures for tracking compliance.
- I. The Permittees shall enforce their ordinances and permits at all construction sites, industrial facilities and commercial facilities as necessary to maintain compliance with this Order. Sanctions for non-compliance shall include: monetary penalties, bonding requirements and/or permit denial or revocation.
- J. Within one year of the adoption of this Order, each Permittee shall submit a certification statement in its annual report, signed by legal counsel, that the Permittee has obtained all

⁵⁷ State Board WQO No. 2006-0003.

⁵⁸ Hazardous material is defined as any substance that poses a threat to human health or the environment due to its toxicity, corrosiveness, ignitability, explosive nature or chemical reactivity. These also include materials named by EPA to be reported if a designed quantity of the material is spilled into the waters of the United States or emitted into the environment.

⁵⁹ Toxic material is a chemical or a mixture that may present an unreasonable risk of injury to health or the environment.

necessary legal authority in accordance with 40 CFR 122.26(d)(2)(i)(A-F) and to comply with this Order through adoption of ordinances and/or municipal code modifications. A copy of the certification shall also be placed in the LIP. Those Permittees who have already complied with this requirement during the third term permit need not submit additional certification statements.

- K. Annually thereafter, Permittees shall review adequacy of their ordinances, implementation and enforcement response procedures with respect to the above items. The findings of the reviews, along with supporting details and recommended corrective actions and schedules shall be submitted as part of the annual report for the corresponding reporting period. The LIP shall be updated accordingly.

VIII. ILLICIT DISCHARGES (ID)/ILLEGAL CONNECTIONS (IC); LITTER, DEBRIS AND TRASH CONTROL

- A. The Permittees shall continue to prohibit all illegal connections to the MS4s through their ordinances, inspections, monitoring programs, and enforcement actions. The Permittees shall develop a pro-active IC/ID or illicit discharge detection and elimination program (IDDE) using the Guidance Manual for Illicit Discharge, Detection, and Elimination by the Center for Watershed Protection⁶⁰ or any other equivalent program. If routine inspections, IDDE program or dry weather screening and/or monitoring indicates any illegal connections, they shall be investigated and eliminated or permitted within 120 days of discovery and identification.
- B. The Permittees' IDDE program shall specify a plan for each jurisdiction to conduct focused, systematic field investigations, outfall reconnaissance survey, indicator monitoring, and tracking of discharges to their sources⁶¹. The IDDE programs shall be linked to urban watershed protection efforts including: a) the use of GIS maps of the Permittees' conveyance systems to track sources ; b) aerial photography to detect IC/IDs; b) municipal inspection programs of construction, industrial, commercial, storm drain systems, municipal facilities, etc.; c) analysis of watershed monitoring and other indicator data; d) watershed education to educate the public about illegal discharges; e) pollution prevention for generating sites; f) stream restoration efforts/opportunities; and g) rapid assessment of stream corridors to identify dry weather flows and illegal dumping.
- C. The LIP shall identify the staff positions responsible for different components of the IDDE program.
- D. The Permittees shall maintain a database of permitted and unpermitted connections, routine inspections and dry weather monitoring. This information shall be updated on an ongoing basis and submitted with the annual report.
- E. The Permittees shall control, consistent with the maximum extent practicable standard, the discharge of spills, leaks, or dumping of any materials other than storm water and

⁶⁰ USEPA (Illicit Discharge Detection and Elimination - A Guidance Manual for Program Development and Technical Assessments) by the Center for Watershed Protection and Robert Pitt, University of Alabama, October 2004, updated 2005).

⁶¹ Table 2: Land uses, Generating Sites and Activities that Produce Indirect Discharges from IDDE, A Guidance Manual for Program Development and Technical Assessments, October 2004 CWP.

authorized non-storm water per Section V, above, into the MS4s. All reports of spills, leaks, and/or illegal dumping shall be promptly investigated and reported as specified under Section XVI (Notification Requirements).

- F. The Permittees shall continue to characterize trash, determine its main source(s) and develop and implement appropriate BMPs and control measures to reduce and/or to eliminate the discharge of trash and debris to waters of the U.S. to the maximum extent practicable. These control measures and their effectiveness in reducing trash shall be reported in the annual report.

IX. SEWAGE SPILLS, INFILTRATION INTO MS4 SYSTEMS FROM LEAKING SANITARY SEWER LINES, SEPTIC SYSTEM FAILURES, AND PORTABLE TOILET DISCHARGES

- A. The Permittees shall provide local sanitation districts 24-hour access to the MS4s to address sewage spills and shall provide updated contact information to enable such access. The Permittees shall work cooperatively with the local sewerage agencies to determine and control the impact of infiltration from leaking sanitary sewer systems on storm water quality. Each Permittee shall implement control measures necessary to minimize infiltration of seepage from sanitary sewers to the storm drain systems through routine preventive maintenance of the storm drain system.
- B. Permittees who are regulated under the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ, (SSO Order), shall continue to comply with that Order to control sanitary system overflows.
- C. The Principal Permittee shall collaborate with the local sewerage agencies to review and revise, as needed, the Sanitary Sewer Overflow Unified Response Plan to ensure its consistency with the SSO Order.
- D. The interagency or interdepartmental sewer spill response coordination and responsibility within each Permittee's jurisdiction shall be described in the LIP.
- E. The Permittees shall implement management measures and procedures to prevent, respond to, contain and clean up all sewage and other spills that may be discharged into their MS4s. Management and/or preventative measures shall also be implemented for sources including portable toilets and failing septic systems that are causing or contributing to urban and storm water runoff pollution problems in their jurisdictions.
- F. Within 2 years of adoption of this Order, Permittees with septic systems in their jurisdiction shall develop an inventory of septic systems within its jurisdiction and establish a program to ensure that failure rates are minimized pending adoption of regulations as per Assembly Bill 885⁶² regarding onsite waste water treatment systems.

X. MUNICIPAL INSPECTION PROGRAMS

A. GENERAL REQUIREMENTS

- 1. The Permittees shall continue to maintain and update the inventory of all

⁶² http://www.waterboards.ca.gov/water_issues/programs/septic_tanks/

construction, industrial and commercial facilities within their jurisdiction that have a reasonable potential to discharge pollutants to the MS4 regardless of whether the sites are subject to the California Statewide General NPDES Permit for Storm Water Discharges Associated with Construction Activities or the California Statewide General NPDES Permit for Storm Water Discharges Associated with Industrial Activities or other individual NPDES permit or Waste Discharge Requirements. The Permittees may use the MS4 Solutions or equivalent database for this purpose (see X.A.2., below).

2. The Permittees shall conduct regular inspections of construction sites, industrial and commercial facilities to evaluate compliance with applicable municipal ordinances, local permits, Storm Water Management Plans, and Water Quality Management Plans (see Sections B, C, and D, below for frequency of inspections). Inspections shall review pollution control practices, implementation and maintenance of pollution control measures, material handling and waste disposal practices, spill prevention and response programs and owner/operator knowledge of environmental laws and regulations, including local ordinances. The Permittees shall enforce their ordinances and permits at all construction, industrial, and commercial facilities in a fair, firm and consistent manner. The municipal inspection inventory shall be maintained in an electronic database. The database system must include relevant information on ownership, Standard Industrial Classification (SIC) codes, General Permit Waste Discharge Identification (WDID) number (if any), size, Geographic Information System (GIS) data in NAD83/WGS84⁶³ compatible formatting with latitude/longitude in decimal degrees, and other pertinent details describing the nature of activities at the site. The information shall be maintained in the MS4 Solutions or equivalent internet accessible database. In addition to the facility information, the inspection information shall include: date of inspection; inspectors and facility personnel present; site conditions, any observed non-compliance; enforcement actions and/or corrective actions required and schedules for corrective actions; and date of full compliance. The database shall be updated at least once each year and an electronic copy provided to the Regional Board with each annual report.
3. Within 18 months of adoption of this Order, the Permittees shall develop a risk-based scoring system to prioritize construction, industrial and commercial facilities and to determine the frequency of inspections. The scoring system shall consider factors including, but not limited to: the hazardous nature of materials used on site; potential for erosion and pollutant discharges, particularly such materials as pre-production plastic (nurdles) or pollutants for which the receiving water is impaired; site size and location including proximity to receiving water, history of spills and leaks; use of pollution control and prevention measures; and compliance history. The risk-based scoring system shall include a criterion to identify the facilities as high, medium or low risk and shall be submitted to the Executive Officer for approval. The electronic database submitted with the annual report (see X.A.2, above) shall include the risk-based scores for each facility. The facility scores must

⁶³ NAD83/WGS84=North American Datum of 1983 and World Geodetic System of 1984 are systems to define three dimensional coordinates of a single physical point.

be reviewed and updated annually, if necessary.

4. Prior to development and implementation of the risk-based scoring system, construction, industrial and commercial sites shall be inspected in accordance with the prioritization scheme set forth in the third term permit and as discussed in Sections B, C, and D, below.
5. Any site found in significant non-compliance with the Statewide General Permits or the MS4 Permit is deemed a high priority site and must be inspected at least once per month until full compliance is achieved.
6. The Permittees shall verify during inspections and prior to local permit issuance whether a site has obtained necessary permit coverage under one or more of the Statewide General Permits, an individual NPDES permit, Waste Discharge Requirements, and/or 401 Certification. Local permits, certificates of occupancy, or other approvals shall not be granted until proof of coverage under the applicable statewide permit is verified.
7. The Permittees shall deem facilities operating without a proper permit to be in significant non-compliance. Appropriate enforcement measures shall be implemented including a time schedule to obtain coverage, or suspension of business license until evidence of permit coverage is provided. Non-filers shall be reported within 14 calendar days to the Regional Board by electronic mail or other written means. The Permittees shall include in their LIP the method for verification of permit coverage and for notification of non-filers to the Regional Board.
8. Permittees shall maintain hard or electronic copies and make available upon request all information related to their inspections, including inspection reports, photographs, videotapes, enforcement actions, notices of correction issued to dischargers and other relevant information. This information shall be linked to the electronic database identified in Section X.A.2 above.
9. The Permittees need not inspect facilities already inspected by Regional Board staff if the inspection was conducted within the specified time period. Regional Board staff inspection information is available at www.ciwqs.ca.gov⁶⁴.
10. Each Permittee shall respond to complaints received from third parties in a timely manner to ensure that the construction, industrial and commercial sites are not a source of pollutants in the MS4s and the receiving waters. Each Permittee shall implement a system of prioritizing the complaints based on threat to the environment (water quality/public health) and an appropriate response time based on this prioritization.
11. Each Permittee shall document, evaluate and annually report the effectiveness of its enforcement procedures in achieving prompt and timely compliance. When timely compliance is not achieved, the Permittee shall take appropriate corrective

⁶⁴ To obtain access to the State database, registration at the following link is necessary: http://www.waterboards.ca.gov/water_issues/programs/ciwqs/chc_npdes.shtml. Contact information is available at http://www.waterboards.ca.gov/water_issues/programs/ciwqs/contactus.shtml.

measures to immediately prevent or abate the discharge of pollutants into its MS4 system.

12. Where storm water related inspections and/or enforcement required by this Order are carried out on behalf of the Permittee by other agencies or departments such as: the County Public Health, county and/or local fire departments, code enforcement, industrial pretreatment, building and safety, etc., the Permittee shall monitor and annually evaluate and report adequacy of such programs in complying with this Order.
13. All inspectors conducting storm water inspection as required in this Order shall be trained in accordance with the training requirements specified in Section XV.

B. CONSTRUCTION SITES

1. Each Permittee shall include in the electronic database identified in Section X.A.2 an inventory of all construction sites within its jurisdiction for which building or grading permits are issued and activities at the site include: soil movement; uncovered storage of materials or wastes, such as dirt, sand or fertilizer; or exterior mixing of cementaceous products, such as concrete, mortar or stucco.
2. Prior to approval of the risk-based scoring and prioritization system, the Permittees shall continue to prioritize construction sites within its jurisdiction as a high, medium or low threat to water quality. This prioritization of construction sites shall be based on factors, which shall include but not be limited to: soil erosion potential, project size, proximity and sensitivity of receiving waters and any other relevant factors. At a minimum, high priority construction sites shall include: sites 50 acres and greater; sites over 1 acre that are tributary to Clean Water Act section 303(d) waters listed for sediment or turbidity impairments; site specific characteristics⁶⁵, and any other relevant factor. At a minimum medium priority construction sites shall include: sites between 10 to less than 50 acres of disturbed soil. Upon approval of the risk-based scoring system, the sites shall be categorized as high, medium or low risk based on the risk-scores.
3. Each Permittee shall conduct construction site inspections for compliance with its ordinances (grading, Water Quality Management Plans, etc.) and local permits (construction, grading, etc.). The Permittees shall develop a checklist for conducting site inspections. Inspections of construction sites shall include, but not be limited to:
 - a. Verification of coverage under the General Construction Permit (Notice of Intent (NOI) or Waste Discharge Identification No.) during the initial inspection. Permit coverage shall also be confirmed in the event of a change in ownership.
 - b. A review of the Erosion and Sediment Control Plans (ESCP) to ensure that the BMPs implemented on-site are consistent with the appropriate phase of construction (Preliminary Stage, Mass Grading Stage, Streets and Utilities Stage, Vertical Construction Stage, and Post-Construction Stage).

⁶⁵ The draft General Construction Permit includes risk-based characterization of construction sites based on site-specific conditions.

- c. Visual observations for non-storm water discharges, potential illicit connections, and potential pollutant sources.
 - d. Determination of compliance with local ordinances, permits, Water Quality Management Plans and other requirements, including the implementation and maintenance of BMPs required under local requirements.
 - e. An assessment of the effectiveness of BMPs implemented at the site and the need for any additional BMPs. In evaluating BMP effectiveness, the Permittees may consider applicable action levels (AL) and/or numeric effluent limits (NEL) promulgated by the State or USEPA.
4. At a minimum, the inspection frequency shall include the following:
- a. During the wet season⁶⁶ (i.e., Oct 1 through May 31 of each year), all high priority (or high risk) sites are to be inspected, in their entirety, once a month. All medium priority (or medium risk) sites are to be inspected at least twice during the wet season. All low priority (or low risk) sites are to be inspected at least once during the wet season. When BMPs or BMP maintenance is deemed inadequate or out of compliance, an inspection frequency of once every week shall be maintained until BMPs and BMP maintenance are brought into compliance.
 - b. During the dry season (i.e., June 1 through September 30 of each year), all construction sites shall be inspected at a frequency sufficient to ensure that sediment and other pollutants are properly controlled and that unauthorized, non-storm water discharges are prevented.
5. The Permittees' implementation of their construction storm water program shall be consistent with the latest version of the statewide General Construction Permit and all applicable provisions of the federal effluent limitations guidelines.

C. INDUSTRIAL FACILITIES

1. Prior to approval of the risk-based scoring and prioritization system, the Permittees shall continue to prioritize industrial facilities within its jurisdiction as a high, medium or low threat to water quality. The prioritization of these facilities should be based on such factors as type of industrial activities (SIC codes)⁶⁷, materials or wastes used or stored outside, pollutant discharge potential, compliance history, facility size, proximity and sensitivity of receiving waters and any other relevant factors. At a minimum, a high priority shall be assigned to: facilities subject to section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA); facilities that handle or generate pollutants for which the receiving water is impaired, facilities that have a demonstrated or significant potential to release pre-production plastic or nurdles into the environment, and facilities with a high potential for or history of

⁶⁶ Wet and dry season for TMDL compliance evaluation will be the months as defined in the TMDL development documents and implementation plans. See Glossary, Attachment 4.

⁶⁷Industrial Facilities, as defined at 40 CFR § 122.26(b)(14), including those subject to the General Industrial Permit or other individual NPDES permit;

unauthorized, non-storm water discharges. Upon approval of the risk-based scoring system, the facilities shall be categorized as high, medium or low risk.

2. Each Permittee shall conduct industrial facility inspections for compliance with its ordinances, permits and this Order. Industrial inspections shall include a review of the site's material and waste handling and storage practices, written documentation of pollutant control BMP implementation and maintenance procedures, digital photographic documentation of water quality violations, as well as evidence of past or present unauthorized, non-storm water discharges and enforcement actions issued at the time of inspection. A summary of inspections shall be included in the annual report and shall document the rationale for downgrading or upgrading the priority ranking of industrial facilities.
3. All high priority (or high risk) industrial facilities are to be inspected at least once a year; all medium priority (or medium risk) sites are to be inspected at least once every two years; and all low priority (or low risk) sites are to be inspected at least once per permit cycle. In the event that inappropriate material or waste handling or storage practices are observed, or there is evidence of past or present unauthorized, non-storm water discharges, appropriate enforcement actions shall be taken and a re-inspection frequency adequate to bring the site into full compliance must be maintained.
4. Each Permittee shall require industrial facilities to implement source control and pollution prevention measures consistent with the BMP Fact Sheets developed by the Permittees.

D. COMMERCIAL FACILITIES

1. All of the following types of commercial facilities are deemed to have a reasonable potential to discharge pollutants to the MS4s. These types of facilities shall be included in the database identified in Section X.A.2. Commercial facilities may include, but may not be limited to⁶⁸:
 - a. Transport, storage or transfer of pre-production plastic pellets;
 - b. Automobile mechanical repair, maintenance, fueling or cleaning;
 - c. Automobile and other vehicle body repair or painting;
 - d. Automobile impound and storage services;
 - e. Airplane repair, maintenance, fueling or cleaning;
 - f. Marinas and boat repair, maintenance, fueling or cleaning;
 - g. Equipment repair, maintenance, fueling or cleaning;
 - h. Pest control service facilities;
 - i. Eating or drinking establishments, including food markets and restaurants;
 - j. Cement mixing, concrete cutting, masonry facilities;
 - k. Building materials retailers and storage facilities;
 - l. Portable sanitary service facilities;
 - m. Painting and coating;
 - n. Animal facilities such as petting zoos and boarding and training facilities;

⁶⁸Mobile cleaning services are addressed in X.D.6 and 7, below.

- o. Nurseries, greenhouses, botanical or zoological gardens;
 - p. Landscape and hardscape installation;
 - q. Pool, lake and fountain cleaning; and
 - r. Golf courses, parks and other recreational areas/facilities;
2. The Permittees shall continue to develop BMPs applicable for each of the commercial operations described above.
 3. Prior to approval of the risk-based scoring system, each Permittee shall conduct inspections of its commercial facilities within its jurisdiction based on the following criteria: 10% of commercial facilities (not including restaurants/food markets) must be ranked 'high' and these represent the greatest threat to water quality⁶⁹; 40% of commercial facilities (not including restaurants/food markets) must be ranked 'medium'; and, the remainder may be ranked 'low'.
 4. All high priority (or high risk) facilities shall be inspected at least once per year; all medium priority (or medium risk) facilities shall be inspected at least every two years; and all low priority (or low risk) facilities shall be inspected at least once per permit cycle. At a minimum, each facility shall be required to implement source control and pollution prevention measures consistent with the BMP Fact Sheets developed by the Permittees.
 5. In the event that inappropriate material or waste handling or storage practices are observed, or there is evidence of past or present unauthorized, non-storm water discharges, appropriate enforcement action shall be taken and documented to bring the site into compliance.
 6. Within 12 months of adoption of this Order, the Principal Permittee shall notify all mobile businesses operating within the County regarding the minimum source control and pollution prevention measures that they must develop and implement. For purposes of this Order, mobile businesses include: mobile auto washing/detailing; equipment washing/cleaning; carpet, drape, furniture cleaning; and mobile high pressure or steam cleaning. The mobile businesses shall be required to implement appropriate control measures within 3 months of being notified by the Permittees.
 7. Within 12 months of adoption of this Order, the Principal Permittee shall develop an enforcement strategy to address mobile businesses. Each Permittee shall also distribute the BMP Fact Sheets for the mobile businesses that has been developed by the Permittees. At a minimum, the mobile business Fact Sheets/training program should include: laws and regulations dealing with urban runoff and discharges to storm drains; appropriate BMPs and proper procedure for disposing of wastes generated from each mobile business.
 8. The Principal Permittee shall continue to maintain a restaurant inspection program, or coordinate and collaborate with the San Bernardino County Public Health Agency's restaurant inspection program. The restaurant inspection program shall, at a minimum, address:

⁶⁹ Where there are less than 100 commercial sites within a municipality, at least 10 sites must be ranked 'High'.

- a. Oil and grease disposal to verify that these wastes are not poured into a trash bin, storm sewers, parking lot, street or adjacent catch basin;
 - b. Trash bin areas to verify that these areas are clean, the bin lids are closed, and the bins are not used for disposing of liquid wastes;
 - c. Parking lot, alley, sidewalk and street areas to verify that floor mats, filters and garbage containers are not washed in those areas and that no wash water is disposed of into those areas;
 - d. Parking lots to verify that they are cleaned by sweeping, not by hosing down, and that the facility operator uses dry methods for spill cleanup; and,
 - e. Inspection of existing devices designed to separate grease from wastewater (e.g., grease traps or interceptors) to ensure adequate capacity and proper maintenance is currently performed under the Fats, Oils and Grease (FOG) program (the FOG inspections conducted under the Statewide SSO Order [Water Quality Order No. 2006-0003] could be substituted for this inspection).
9. All violations of the Water Quality Ordinance shall be enforced by the Permittees and all violations of the Health and Safety Code should be enforced by the Public Health Agency.

E. RESIDENTIAL PROGRAM

1. Within 18 months of adoption of this Order, each Permittee shall develop and implement a residential program to reduce the discharge of pollutants from residential facilities to the MS4s consistent with the maximum extent practicable standard so as to prevent discharges from the MS4s from causing or contributing to a violation of water quality standards in the receiving waters.
2. The Permittees shall identify residential areas and activities that are potential sources of pollutants and develop Fact Sheets/BMPs. At a minimum, this should include: residential auto washing and maintenance activities; use and disposal of pesticides, herbicides, fertilizers and household cleaners; and collection and disposal of pet wastes. The Permittees shall encourage residents to implement pollution prevention measures. The Permittees should work with sub-watershed groups to disseminate latest research information from organizations such as the Inland Empire Resource Conservation District⁷⁰, The Land Trust Alliance, The USDA Natural Resources Conservation Service, USDA's Backyard Conservation Program⁷¹, etc.
3. Each Permittee shall document its residential program in the LIP.
4. The Permittees shall continue to, collectively or individually, facilitate the proper collection and management of used oil, toxic and hazardous materials, and other

⁷⁰ The District provides gardening and horticulture information appropriate for the area including native plant selection, backyard management, alternatives to pesticide, irrigation scheduling and composting.

⁷¹ Backyard Conservation, Bringing Conservation from the Countryside to Your Backyard, USDA Natural Resources Conservation Service, National Association of Conservation Districts, Wildlife Habitat Council and National Audubon Society.

household wastes. Such facilitation shall include educational activities, public information activities, and establishment of curbside or special collection sites managed by the Permittees or private entities, such as solid waste haulers. Each Permittee shall continue and periodically evaluate the effectiveness of these related programs in reducing discharges of pollutants into the MS4s.

5. The Permittees shall develop and implement control measures for common interest areas and areas managed by homeowner associations or management companies. This may include development and promotion of public education materials identifying BMPs for these common interest areas or HOA areas. The Permittees should evaluate the applicability of programs such as the Landscape Performance Certification Program⁷² to encourage efficient water use and to minimize runoff⁷³.
6. The Permittees shall enforce their Water Quality Ordinance for all residential areas and activities. The Permittees should encourage new developments to use weather-based evapotranspiration (ET) irrigation controllers⁷⁴.
7. Each Permittee shall include an evaluation of its Residential Program in the annual report starting with the first annual report after adoption of this Order.

XI. NEW DEVELOPMENT (INCLUDING SIGNIFICANT RE-DEVELOPMENT)

A. General Requirements:

1. Each Permittee shall continue to ensure (prior to issuance of any local permits or other approvals) that all construction sites that are one acre or greater, and sites less than one acre if part of a common plan of development have filed with the State Board a Notice of Intent for coverage under the State's General Construction Permit and have been issued a valid Waste Discharge Identification (WDID) number. Each Permittee shall describe its General Permit coverage verification procedures in its LIP.
2. Each Permittee shall ensure that the erosion and sediment control plans it approves include appropriate erosion and sediment control BMPs (e.g., erosion control measures for sloped or hill-side developments, ingress/egress controls, perimeter controls, run-on diversion, etc.) such that an effective combination of BMPs consistent with site risk is implemented through all phases of construction.
3. Each Permittee shall utilize the BMP studies conducted during the previous permit terms to determine the most appropriate erosion and sediment control BMPs. The conditions of approval should specify appropriate BMPs.
4. Each Permittee shall ensure that runoff from development projects it approves, or runoff from its MS4s does not cause erosion or nuisance to adjacent or downstream

⁷² For example, see the Metropolitan Water District of Orange County's Evaluation of the Landscape Performance Certification Program, January 2004.

⁷³ The Residential Runoff Reduction Study, Municipal Water District of Orange County, Irvine Ranch Water District and Metropolitan Water District of Southern California, July 2004.

⁷⁴ Westpark Study, Municipal Water District of Orange County, Irvine Ranch Water District and Metropolitan Water District of Southern California, 2001.

properties and stream channels or allowed to flow onto private property unless appropriate easements and maintenance agreements have been approved.

5. Each Permittee shall ensure, consistent with the maximum extent practicable standard, that runoff from development projects not regulated under this Order but is allowed to be discharged into MS4s regulated under this Order is consistent with the model WQMP for the permitted area.
6. Each Permittee shall ensure that appropriate control measures to reduce erosion and maintain natural stream geomorphology are included in the design for replacement of existing culverts or construction of new culverts and/or bridge crossings.
7. Each Permittee shall minimize the short and long-term adverse impacts on receiving water quality from public and private new development and significant re-development projects, as required in Section XI.D (Water Quality Management Plan), below, by continuing to review, approve, and verify implementation of project-specific WQMPs, emphasizing implementation of LID principles and addressing hydrologic conditions of concern, and long term operation and maintenance mechanisms prior to project closure or issuance of certificates of occupancy.
8. Each Permittee shall participate in the development of a Watershed Action Plan, described in Section B below, to integrate water quality, stream protection and stormwater management and re-use within the permitted area with land use planning policies, ordinances, and plans.

B. Watershed Action Plan

1. An integrated watershed management approach is essential to integrate planning and approval processes with water quality and quantity control measures. Management of the impacts of urbanization on water quality and stream stability can be more effectively managed on a per site, sub-regional or regional basis through a Watershed Action Plan. Pending completion of a Watershed Action Plan, management of the impacts of urbanization shall be accomplished on a per project basis.
2. Within 12 months of adoption of this Order, the Principal Permittee shall facilitate the formation of a technical advisory committee (TAC) consisting of the Community Development/Planning Department directors and City/County Engineers of the Permittees to develop a Watershed Action Plan and to address other issues related to urban and storm water runoff management and planning and approval processes within each jurisdiction.
3. Within eighteen (18) months of adoption of this Order, Principal Permittee, in collaboration with the Co-Permittees and the TAC, shall develop a Watershed Action Plan. At a minimum, the Watershed Action Plan shall include the following:
 - a. Integrate water quality, stream protection, storm water management, water conservation and re-use, and flood protection with land use planning policies, ordinances.

- b. Delineate existing unarmored or soft-armored drainages in the permitted area that are vulnerable to geomorphological changes due to hydromodification and those channels and streams that are hardened and engineered.
- c. Incorporate a watershed re-development plan and identify implementation tools for highly urbanized areas to prevent further degradation and to restore functionality of hardened and engineered streams and channels, consistent with the maximum extent practicable standard.
- d. Address sediment yield and balance on a watershed, subwatershed, and regional basis to ensure that sediment supply is appropriate for post-development flow.
- e. Identify impaired waters [CWA § 303(d) listed] with and without approved TMDLs, pollutants causing impairment, monitoring programs for these pollutants, control measures, including any BMPs that the Permittees are currently implementing, and any BMPs the Permittees are proposing to implement. In addition, if a TMDL has been developed and an implementation plan is yet to be developed, the Watershed Action Plan shall specify that the responsible Permittees should develop constituent specific source control measures, conduct additional monitoring and/or cooperate with the development of an implementation plan.
- f. Facilitate integrated planning for water quality/quantity that includes urban and storm water runoff management and stream channel and hydromodification controls by utilizing an overlay GIS map of the impaired waters [CWA § 303(d) listed], potential storm water recharge areas and/or reservoirs, vulnerable streams and hardened and engineered MS4s.
- g. Incorporate low impact development techniques, Smart Growth principles⁷⁵, New Urbanism⁷⁶, urban runoff capture, treatment, and re-use, water conservation principles in landscape choices and design, preservation of existing unarmored or soft-armored drainages and flood plains into new development and redevelopment plans.
- h. Include development strategies that provide incentives for redevelopment, brownfield development, high density, vertical density, mixed use and transit-oriented development, and water conservation and re-use projects.
- i. Specify monitoring requirements for hydromodification and water quality to evaluate the effectiveness of the control measures contained in the Watershed Action Plan.
- j. Invite participation and comments from resource conservation districts, water and utility agencies, state and federal agencies, non-governmental agencies and other interested parties in the development of this watershed strategy.

⁷⁵ Smart Growth refers to the use of creative strategies to develop ways that preserve natural lands and critical environmental areas, protect water and air quality, and reuse already-developed land.

⁷⁶ New Urbanism is somewhat similar to Smart Growth and is based on principles of planning and architecture that work together to create human-scale, walkable communities that preserve natural resources.

4. Within three years of adoption of this Order, each Permittee shall review the watershed protection principles and policies in its General Plan or related documents (such as Development Standards, Zoning Codes, Conditions of Approval, Development Project Guidance) to determine consistency with the Watershed Action Plan. Each Permittee shall report the findings in the annual report along with a schedule for any necessary revision.

C. Consideration of Watershed Protection Principles in California Environmental Quality Act (CEQA) and Planning Processes:

1. Within twelve months of adoption of this Order, each Permittee shall review the watershed protection principles and policies, specifically addressing urban and storm water runoff, in its planning procedures, including CEQA preparation, review and approval processes; General Plan and related documents including, but not limited to its Development Standards, Zoning Codes, Conditions of Approval, Development Project Guidance; and WQMP development and approval processes.
2. The review required under C.1, shall ensure that urban runoff issues and water quality considerations are properly considered and addressed. The need for 401 certification for a project shall be identified early in the CEQA review to enable coordination with Regional Board 401 staff on the preliminary WQMP prior to City/County approval of the WQMP. The CEQA review and document preparation processes should be revised to consider and mitigate the short and long term impacts of the project and shall specify measures that must be implemented to mitigate those impacts. If the mitigation measures require long term operation and maintenance monitoring, the CEQA document shall so specify or incorporate by reference where the information may be found. The following potential impacts shall be considered during CEQA review:
 - a. Potential impact of project construction on storm water runoff.
 - b. Potential impact of project's post-construction activity on storm water runoff.
 - c. Potential for discharge of storm water pollutants from areas of material storage, vehicle or equipment fueling, vehicle or equipment maintenance (including washing), waste handling, hazardous materials handling or storage, delivery areas or loading docks, or other outdoor work areas.
 - d. Potential for discharge of storm water to affect the beneficial uses of the receiving waters.
 - e. Potential for significant changes in the flow velocity or volume of storm water runoff to cause environmental harm.
 - f. Potential for significant increases in erosion of the project site or surrounding areas.
3. The review specified in C.1 & 2, above, shall identify and recommend solutions to eliminate barriers to implement watershed protection principles and policies, including but not limited to the low impact development (LID) principles and management of hydrologic conditions of concerns (see Section E, below). The Principal Permittee shall collaborate with the TAC and the Co-Permittees to resolve

any impediments to implementing watershed protection principles during the planning and development processes. The Principal Permittee shall collaborate with the Co-Permittees and the TAC to develop common development standards, zoning codes, conditions of approval and other principles and policies necessary for water quality protection. Any changes to the project approval procedures shall be reflected in the LIP. The watershed protection principles and policies should include the following:

- a. Limit disturbance of natural water bodies and drainage systems; conserve natural areas; protect slopes and channels; minimize impacts from storm water and urban runoff on the biological integrity of natural drainage systems and water bodies;
 - b. Minimize changes in hydrology and pollutant loading; require incorporation of controls including structural and non-structural BMPs to mitigate any projected increases in pollutant loads and flows; ensure that post-development runoff rates and velocities from a site do not adversely impact downstream erosion, stream habitat; minimize the quantity of storm water directed to impermeable surfaces and the MS4s; maximize the percentage of permeable surfaces to allow more percolation of storm water into the ground;
 - c. Preserve wetlands, riparian corridors, and buffer zones; establish reasonable limits on the clearing of vegetation from the project site;
 - d. Use properly designed and well maintained water quality wetlands, biofiltration swales, watershed-scale retrofits, etc., where such measures are likely to be effective and technically and economically feasible;
 - e. Provide for appropriate permanent measures to reduce storm water pollutant loads in storm water from the development site; and
 - f. Establish development guidelines for areas particularly susceptible to erosion and sediment loss.
 - g. Consider pollutants of concern (identified in the risk-based analysis provided in the 2006 ROWD, the annual reports and the list of impaired waterbodies (303(d) list)) and propose appropriate control measures.
4. Within a year following the review specified in C.1 &2, above, each Permittee shall incorporate the following information into its LIP and its project approval process:
- a. Each Permittee shall identify and map in GIS format the natural channels, wetlands, riparian corridors and buffer zones and identify conservation and maintenance measures for these features. The Watershed Action Plan should include information needed for this effort. This requirement may be met through development of areawide HCOC maps or other joint efforts.
 - b. Each Permittee shall include the ordinances, design standards, procedures and other tools it uses to implement green infrastructure/low impact development principles for public and private development projects.

- c. Each Permittee shall describe development strategies including incentives for redevelopment, brownfield development, high density, vertical density, mixed use and transit-oriented developments, and water conservation and re-use projects.
 - d. For hillside development projects, each Permittee shall consider and facilitate application of landform grading techniques⁷⁷ and revegetation as an alternative to traditional approaches, particularly in areas susceptible to erosion and sediment loss.
5. Each Permittee shall provide Regional Board staff with the draft amendment or revision when a pertinent General Plan element or the General Plan is noticed for comment in accordance with Govt. Code § 65350 et seq.

D. Water Quality Management Plan (WQMP) for Priority Projects⁷⁸:

1. Each Permittee shall continue to require project-specific Water Quality Management Plans (WQMP) for priority projects listed under Section XI.D.4.a to j.
2. Within 12 months of adoption of this Order, the Principal Permittee shall coordinate the revision of the WQMP Guidance and Template to include new elements required under this Order.
3. Each Permittee shall require submittal of a preliminary project-specific WQMP as early as possible during the environmental review or planning phase (land use entitlement). No building or grading permit shall be issued prior to approval of the final project-specific WQMP that is in substantial conformance with the preliminary project-specific WQMP.
4. The combination of site design, source control, LID BMPs, and/or treatment control BMPs, including Regional treatment systems, in project-specific WQMPS shall address all identified pollutants and hydrologic conditions of concern from new development and/or significant re-development projects for the category of projects (priority projects) listed below:
 - a. All significant re-development projects. Significant re-development is defined as the addition or replacement of 5,000 or more square feet of impervious surface on an already developed site. Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of the facility, or emergency redevelopment activity required to protect public health and safety. Where redevelopment results in an increase of less than fifty percent of the impervious surfaces of a previously existing developed site, and the existing development was not subject to WQMP requirements, the numeric sizing criteria discussed below applies only to the addition or replacement, and not to the entire developed site. Where redevelopment results in an increase of more than fifty percent of the impervious surfaces of a previously existing developed site, the numeric sizing criteria applies

⁷⁷<http://www.epa.gov/region3/mntnptop/pdf/Appendixes/Appendix%20D%20Aquatic/Aquatic%20Ecosystem%20Enhanc.%20Symp/Proceedings/Support%20Info/Schor/Landform.pdf>

⁷⁸ Priority projects are those listed under Section XI.D.4.a to j.

to the entire development.

- b. New development projects that create 10,000 square feet or more of impervious surface (collectively over the entire project site) including commercial, industrial, residential housing subdivisions (i.e., detached single family home subdivisions, multi-family attached subdivisions or townhomes, condominiums, apartments, etc.), mixed-use, and public projects. This category includes development projects on public and private land, which fall under the planning and building authority of the Permittees.
 - c. Automotive repair shops (with SIC codes 5013, 5014, 5541, 7532-7534, 7536-7539).
 - d. Restaurants (with SIC code 5812) where the land area of development is 5,000 square feet or more.
 - e. All hillside developments of 5,000 square feet or more which are located on areas with known erosive soil conditions or where the natural slope is twenty-five percent or more.
 - f. Developments of 2,500 square feet of impervious surface or more adjacent to (within 200 feet) or discharging directly⁷⁹ into environmentally sensitive areas (ESAs) such as areas designated in the Ocean Plan as areas of special biological significance or waterbodies listed on the CWA Section 303(d) list of impaired waters.
 - g. Parking lots of 5,000 square feet or more exposed to storm water. Parking lot is defined as land area or facility for the temporary parking or storage of motor vehicles.
 - h. Street, roads, highways, and freeways⁸⁰ of 5,000 square feet or more of paved surface shall incorporate USEPA guidance, "Managing Wet Weather with Green Infrastructure: Green Streets" to the maximum extent practicable. This category includes any paved surface used for the transportation of automobiles, trucks, motorcycles, and other vehicles and excludes any routine road maintenance activities where the footprint is not changed.
 - i. Retail Gasoline Outlets (RGOs) that are either 5,000 sq feet or more, or has a projected average daily traffic of 100 or more vehicles per day.
 - j. Emergency public safety projects in any of the above-listed categories may be excluded if the delay caused due the requirement for a WQMP compromises public safety, public health and/or environmental protection.
4. WQMPs shall include BMPs for source control, pollution prevention, site design, LID implementation (see Section E, below) and structural treatment control BMPs. WQMPs shall include control measures for any listed pollutant⁸¹ to an impaired

⁷⁹ Discharging directly means a drainage or conveyance which carries flows entirely from the subject development and not commingled with any other flows.

⁸⁰ Provide a waiver for high pollution potential areas such as gas stations, convenience stores, industrial sites with significant exposure of materials, equipment and processes.

⁸¹ For a waterbody listed under Section 303(d) of the Clean Water Act, the pollutant that is causing the impairment is the "listed pollutant."

waterbody on the 303(d) list such that the discharge shall not cause or contribute to an exceedance of receiving water quality objectives. The permittees shall require the following source control BMPs for each priority development project, unless formally substantiated as unwarranted in a written submittal to the Permittee:

- a. Minimize contaminated runoff, including irrigation runoff, from entering the MS4s;
 - b. Provide appropriate secondary containment and/or proper covers or lids for materials storage, trash bins, and outdoor processing and work areas;
 - c. Minimize storm water contact with pollutant sources;
 - d. Provide community car wash and equipment wash areas that discharge to sanitary sewers;
 - e. Minimize trash and debris in storm water runoff through regular street sweeping and through litter control ordinances.
 - f. The pollutants in post-development runoff shall be reduced using controls that utilize best management practices, as described in the California Storm Water Quality Handbooks, Caltrans Storm Water Quality Handbook or other reliable sources.
5. Treatment control BMPs shall be in accordance with the approved model WQMP and must be sized to comply with one of the following numeric sizing criteria:

a. VOLUME

Volume-based BMPs shall be designed to infiltrate, harvest and reuse, filter, or treat either:

- i. The volume of runoff produced from a 24-hour, 85th percentile storm event, as determined from the County of San Bernardino's 85th Percentile Precipitation Isopluvial Map; or,
- ii. The volume of annual 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,
- iii. The volume of annual runoff based on unit basin storage volume, to achieve 80 (or more volume treatment by the method recommended in California Stormwater Best Management Practices Handbook – Industrial/Commercial (1993); or,
- iv. The volume of runoff, as determined from the local historical rainfall record, that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile, 24-hour runoff event;

OR

b. FLOW

Flow-based BMPs shall be designed to infiltrate, harvest and reuse, filter, or treat either:

- i. The maximum flow rate of runoff produced from a rainfall intensity of 0.2 inch of rainfall per hour; or,
 - ii. The maximum flow rate of runoff produced by the 85th percentile hourly rainfall intensity, as determined from the local historical rainfall record, multiplied by a factor of two; or,
 - iii. The maximum flow rate of runoff, as determined from the local historical rainfall record that achieves approximately the same reduction in pollutant loads and flows as achieved by mitigation of the 85th percentile hourly rainfall intensity multiplied by a factor of two.
5. The obligation to install structural BMPs at new development is met if, for a common plan of development, BMPs are constructed with the requisite capacity to serve the entire common project, even if certain phases of the common project may not have BMP capacity located on that phase in accordance with the requirements specified above. All treatment control BMPs should be located as close as possible to the pollutant sources, should not be located within waters of the U.S., and pollutant removal should be accomplished prior to discharge to waters of the U.S. Regional treatment control BMPs shall be completed and operational prior to occupation of any of the priority project sites tributary to the regional treatment BMP.
6. Within 24 months of adoption of this Order, the Principal Permittee shall develop recommendations for streamlining regulatory agency approval of regional treatment control BMPs. The recommendations should include information needed to be submitted to Regional Board for consideration of regional treatment control BMPs. At a minimum, it should include: BMP location; type and effectiveness in removing pollutants of concern; projects tributary to the regional treatment system; engineering design details; funding sources for construction, operation and maintenance; and parties responsible for monitoring effectiveness, operation and maintenance. The Permittees are encouraged to collaborate and work with other counties to facilitate and coordinate these recommendations.
7. **Groundwater Protection:**

Treatment Control BMPs utilizing infiltration [exclusive of incidental infiltration and BMPs not designed to primarily function as infiltration devices (such as grassy swales, detention basins, vegetated buffer strips, constructed wetlands, etc.)] must comply with the following: minimum requirements to protect groundwater:

 - a. Use of structural infiltration treatment BMPs shall not cause or contribute to an exceedance of groundwater water quality objectives.
 - b. Source control and pollution prevention control BMPs shall be implemented to protect groundwater quality. The need for sedimentation or filtration should be evaluated prior to infiltration.
 - c. Adequate pretreatment of runoff prior to infiltration shall be required in gas stations and large commercial parking lots.

- d. Structural infiltration treatment BMPs must not be used for areas of industrial or light industrial activity⁸²; areas subject to high vehicular traffic (25,000 or more daily traffic) automotive repair shops; car washes; fleet storage areas; nurseries; or any other high threat to water quality land uses or activities⁸³.
- e. Structural infiltration treatment BMPs shall be located at least 100 feet horizontally from any water supply wells.
- f. The vertical distance from the bottom of any infiltration structural treatment BMP to the historic high groundwater mark shall be at least 10 feet. Where the groundwater basins do not support beneficial uses, this vertical distance criteria may be reduced, provided groundwater quality is maintained.
- g. Structural infiltration treatment BMPs shall not cause a nuisance or pollution as defined in Water Code Section 13050.

E. Low Impact Development (LID) and Hydromodification Management to Minimize Impacts from New Development / Significant Redevelopment

1. The objective of LID is to mimic pre-development site hydrology through technically and economically feasible source control and site design techniques. LID combines hydrologically functional site design with pollution prevention methods to compensate for land development impact on hydrology and water quality.
2. Within 12 months of adoption of this Order, each Permittee shall identify any barriers to implementing LID principles. This shall be done in conjunction with the requirements specified under Sections XI.C.1 & 2. To facilitate implementation of LID BMPs, the Permittees should consider revising their ordinances, codes and building and landscape design standards. The Permittees shall promote green infrastructure/LID BMP implementation including but not limited to the following:
 - a. Require landscape designs that promote water retention and evapotranspiration such as 1 foot depth of compost/top soil in commercial and residential areas on top of 1 foot of decompacted subsoil, concave landscape grading to allow runoff from impervious surfaces, and water conservation by selecting native plants, weather-based irrigation controllers, etc.
 - b. Allow permeable surface designs in low traffic roads and parking lots. This may require land use/building code amendment.
 - c. Allow natural drainage systems for street construction and catchments (with no drainage pipes) and allow grassy swales and ditches where feasible.
 - d. Require parking lots to drain to landscaped areas to provide treatment, retention or infiltration.

⁸² Unless a site assessment pursuant to criteria developed in Section XI.F.2 shows that site operations do not pose a threat to ground water.

⁸³ This restriction applies only to sites that are known to have soil and/or groundwater contamination. Recent studies by the Los Angeles and San Gabriel Watershed Council of Storm Water Recharge has shown that there is no statistically significant degradation of groundwater quality from the infiltration of storm water-borne constituents.

- e. Reduce curb requirements where adequate drainage, conveyance, treatment and storage are available.
 - f. Amend land use/building codes to allow streets with no curbs and parking lots with no stop blocks to allow storm water to drain into landscaped areas.
 - g. Require rainwater harvesting and reuse.
 - h. Build narrow streets, alternatives to minimum parking requirements, etc.
 - i. Consider vegetated landscape as an integral element of streets, parking lots, playground and buildings as a storm water treatment and retention system.
 - j. Consider other site design BMPs identified in the WQMP Guidance and Template and not included above.
3. Each Permittee shall update its landscape ordinance consistent with the requirements of AB 1881. The bill requires the local agencies to adopt the State Model Water Efficient Landscape Ordinance⁸⁴ or prepare one that is "at least as effective" as the State Model by January 2010. The proposed state model ordinance applies to landscape requiring a building or landscape permit, plan check or design review. The Permittees shall annually evaluate and report the effectiveness of their landscape ordinance with respect to water efficiency and conservation goals.
4. To reduce pollutants in urban runoff, address hydromodification, and manage storm water as a resource to the maximum extent practicable, WQMPs shall specify preferential use of site design BMPs that incorporate LID techniques in the following manner (from highest to the lowest priority): (1) Preventative measures (these are mostly non-structural measures, e.g., preservation of natural features to a level consistent with the maximum extent practicable standard; minimization of runoff through clustering, reducing impervious areas, etc.) and (2) Mitigative measures (these are structural measures, such as, infiltration, harvesting and reuse, bio-treatment, etc.). The mitigative or structural site design BMPs shall also be prioritized (from highest to lowest priority): (1) Infiltration BMPs (examples include permeable pavement with infiltration beds, dry wells, infiltration trenches, surface and sub-surface infiltration basins. All infiltration activities should be coordinated with the groundwater management agencies, such as the Inland Empire Utilities Agency, Water Districts, etc.; (2) BMPs that harvest and re-use (e.g., cisterns and rain barrels); and (3) Vegetated BMPs that promote evapotranspiration including bioretention, biofiltration and bio-treatment.
5. The Permittees shall reflect in the Water Quality Management Plan Guidance and Template and require each priority development project to infiltrate, harvest and re-use, evapotranspire, or bio-treat⁸⁵ the 85th percentile storm event ("design capture

⁸⁴ http://www.owue.water.ca.gov/docs/final_reg_text.pdf

⁸⁵ A properly engineered and maintained bio-treatment system may be considered only if infiltration, harvesting and reuse and evapotranspiration cannot be feasibly implemented at a project site (feasibility criteria will be established in the WQMP [Section XI.E.6] and the technically-based feasibility criteria [Section XI.E.6.a.vi]). Specific design, operation and maintenance criteria for bio-treatment systems shall be part of the model WQMP that will be produced by the permittees.

volume”), as specified in Section XI.D.5.1.1, above. Any portion of the design capture volume that is not infiltrated, harvested and re-used, evapotranspired or bio-treated⁸⁶ onsite by LID BMPs shall be treated and discharged in accordance with the requirements set forth in Section XI.E.8 and/or Section XI.F, below.

6. Within twelve months of adoption of this Order, the Permittees shall review and update the Water Quality Management Plan Guidance and Template to incorporate LID principles and to address the impact of urbanization on downstream hydrology. At a minimum, the following elements shall be included during the update:

- a. *Site Design BMPs:*

- i. Review and update the menu of site design BMPs to include any LID BMP that is currently not listed.
- ii. Include as a reference for design and installation of LID BMPs the *LID Guidance Manual for Southern California* developed by the Southern California Coastal Water Research Project upon its completion.
- iii. Techniques or specifications to minimize soil compaction in areas designated for site design BMPs, especially infiltration.
- iv. Review and update design, installation and test specifications for retention BMPs to prevent unwanted ponding.
- v. Develop and utilize a credit system⁸⁷ for using site design BMPs.
- vi. Within 12 months of adoption of this Order the Principal Permittee shall establish a technically-based feasibility criteria for project evaluation to determine the feasibility of implementing LID. Collaboration with Orange County and Riverside County Permittees is encouraged in the development of these criteria.
- vii. Develop in lieu programs for projects seeking a waiver of LID BMPs.

- b. *Source Control BMPs:*

- i. Review and update the menu of source control BMPs.
- ii. Include design and installation standards for each structural source control BMP.

- c. *Treatment Control BMPs:*

- i. Update the list of treatment control BMPs, including an evaluation of their effectiveness based on national, statewide or regional studies.
- ii. Prioritize treatment control BMPs based on their effectiveness in pollutant removal and require project proponents to select the most appropriate BMPs.
- iii. Include design and installation standards for each treatment control BMP.

⁸⁶For all references to bio-treat/bio-treatment, see footnote 85.

⁸⁷ See sample credit calculation in the draft statewide construction permit.

http://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/draft/draftconst_att_f.xls

d. Hydrologic Conditions of Concern (HCOC):

- i. The Permittees shall continue to ensure through their review and approval of project-specific WQMPs that new development and significant re-development projects do not pose a hydrologic condition of concern.
- ii. A development/redevelopment project does not cause a hydrologic condition of concern if it causes no adverse downstream impacts on the physical structure, aquatic, and riparian habitat and any of the following conditions is met:
 - a) The project disturbs less than one acre and is not part of a common plan of development.
 - b) The post-development site hydrology (including runoff volume, velocity, duration, time of concentration⁸⁸,) is not significantly different from pre-development hydrology for a 1, 2, and 5-year return frequency storms.
 - c) All downstream conveyance channels that will receive runoff from the project are engineered, hardened and regularly maintained to ensure design flow capacity, and no sensitive stream habitat areas will be affected. This exemption is only applicable to conveyance channels that have received regulatory approvals prior to June 1, 2004, including CEQA review and approvals by US Army Corps of Engineers, Regional Board, and California Department of Fish and Game.
- iii) Where flow reduction strategies are established as part of TMDL compliance plans, decreases in flow loading from pre-development conditions are allowed and encouraged where necessary to protect water quality standards.
- iv) If a hydrologic condition of concern exists, and a Watershed Action Plan has not been approved, the WQMP shall specify one of the following:
 - a) Verify the project's potential to cause a HCOC by conducting a further evaluation of the projects impact on stream geomorphology and/or aquatic habitat. If this evaluation confirms the project's potential to cause HCOC, then the project shall satisfy items 2 or 3 below. If the evaluation indicates minimal impact on stream channels and habitats, no further action is warranted.
 - b) Require additional onsite or offsite mitigation to address potential erosion or impacts on aquatic habitats by using LID BMPs or other control measures.
 - c) Require in-stream controls⁸⁹ to mitigate the impacts. The project proponent should first consider site design controls and on-site controls prior to proposing in-stream controls; in-stream controls must not adversely impact

⁸⁸ Time of concentration is defined as the time after the beginning of rainfall when all portions of the drainage basin are contributing simultaneously to flow at the outlet.

⁸⁹ In-stream measures involve modifying the receiving stream channel slope and geometry so that the stream can convey the new flow regime without increasing the potential for erosion and aggradation. In-stream measures are intended to improve long-term channel stability and prevent erosion by reducing the erosive forces imposed on the channel boundary.

- beneficial uses or result in sustained degradation of water quality of the receiving waters and shall require all necessary regulatory approval⁹⁰.
- d) Mitigate the HCOC impact by requiring the project to have no more than 3% effective impervious area⁹¹.
 - e) If site conditions do not permit items 2), 3), or 4) above, the alternatives and in-lieu programs discussed under Section F, below, may be considered.
 - v) The WQMP shall specify methods for determining time of concentration.
- e. Integrate Watershed Action Plan and TMDL Implementation Plans into project-specific WQMPs in affected watersheds.
7. Within 12 months of adoption of this Order, a copy of the updated Water Quality Management Plan Guidance and Template shall be submitted for review and approval by the Executive Officer. Within 90 days of approval of the updated Water Quality Management Plan Guidance and Template, the Permittees shall implement LID BMPs for all priority development projects. If the Executive Office has not approved the Water Quality Management Plan Guidance and Template within 18 months of adoption of this Order, either the Permittees shall require implementation of LID BMPs, or determine infeasibility of LID BMPs for each project through a project-specific analysis, each of which shall be submitted to the Executive Officer, at least 30 days prior to Permittee approval. Within 30 days of submittal to the Executive Officer, the Permittee will be notified if the Executive Officer intends to take any action.
8. If site conditions do not permit infiltration, harvesting and re-use, and/or evapotranspiration, and/or bio-treatment of the design capture volume at the project site as close to the source as possible, the alternatives discussed below should be considered and the credits and in-lieu programs discussed under Section F, below, may be considered:
- a. Implement LID principles at the project site. This is the preferred approach. For example, in a single family residential development: connect roof drains to a landscaped area, divert driveway runoff to a vegetated strip and minimize any excess runoff generated from the development. The pervious areas to which the runoff from the impervious areas are connected should have the capacity to infiltrate, harvest, evapotranspire and/or bio-treat and re-use at least the design capture volume.
 - b. Implement as many LID principles as possible at the project site close to the point of storm water generation and infiltrate and/or harvest and re-use at least the design capture volume through designated infiltration/treatment areas elsewhere within the project site. For example, at a condominium development: connect the roof drains to landscaped areas, construct common parking areas with pervious asphalt with a sub-base of rocks or other materials to facilitate percolation of storm

⁹⁰ In-stream control projects require a Streambed Alteration Agreement from the California Department of Fish & Game, a CWA section 404 permit from the U.S. Army Corps of Engineers, and a section 401 certification from the Water Board. Early discussions with these agencies on the acceptability of an in-stream modification are necessary to avoid project delays or redesign.

⁹¹ ftp://ftp.sccwrp.org/pub/download/PDFs/450_peak_flow.pdf

water, direct road runoff to curbsless, vegetated sidewalks. The pervious areas which receive runoff from impervious areas should have the capacity to infiltrate, harvest and re-use, evapotranspire and/or bio-treat at least the design capture volume.

- c. Implement LID on a sub-regional basis. For example, at a 100 unit high density housing unit with a small strip mall and a school: connect all roof drains to vegetated areas (if there are any vegetated areas, otherwise storm water storage and reuse may be considered or else divert to the local storm water conveyance system, to be conveyed to the local treatment system), construct a storm water infiltration gallery below the school playground to infiltrate and/or harvest and re-use the design capture volume. The pervious areas to which the runoff from the impervious areas are connected should have the capacity to infiltrate, harvest and re-use, evapotranspire and/or bio-treat at least the design capture volume.
- d. Implement LID on a regional basis. For example, several developments could propose a regional system to address storm water runoff from all the participating developments. The pervious areas to which the runoff from the impervious areas are connected should have the capacity to infiltrate, harvest and re-use, evapotranspire and/or bio-treat at least the design capture volume from the entire tributary area. (Also see discussion on hydrologic conditions of concern, below.

F. Alternatives and In-Lieu Programs

1. If a particular BMP is not technically feasible, other BMPs should be implemented to achieve the same level of compliance, or if the cost of BMP implementation greatly outweighs the pollution control benefits, the Permittees may grant a waiver of the BMPs. All waivers, along with waiver justification documentation, must be submitted to the Executive Officer at least 30 days prior to Permittee approval. Only those projects that have completed a vigorous feasibility analysis as per the criteria developed by the Permittees (see Section XI.E.6.a.vi) and approved by the Executive Officer shall be considered for alternatives and in-lieu programs.
2. The feasibility analysis shall include a groundwater protection assessment to determine if structural infiltration BMPs are appropriate for the site.
3. The Permittees may collectively or individually propose to establish an urban runoff fund to be used for urban water quality improvement projects within the same watershed that is funded by contributions from developers granted waivers. The contributions should be at least equivalent to the cost savings for waived projects and the urban runoff fund shall be expended for water quality improvement or other related projects approved by the Executive Officer within two years of receipt of the funds. If a waiver is granted and an urban runoff fund is established, the annual report for the year should include the following information with respect to the urban runoff fund:
 - a. Total amount deposited into the funds and the party responsible for managing the urban runoff fund;
 - b. Projects funded or proposed to be funded with monies from the urban runoff fund;

- c. Party or parties responsible for design, construction, operation and maintenance of urban runoff funded projects; and
 - d. Current status and a schedule for project completion.
4. The obligation to install structural site design and/or treatment control BMPs at a new development is met if, for a common plan of development, BMPs are constructed with the requisite capacity to serve the entire common project, even if certain phases of the common project may not have BMP capacity located on that phase in accordance with the requirements specified above. The goal of the WQMP is to develop and implement practicable programs and policies to minimize the effects of urbanization on site hydrology, urban runoff flow rates, velocities, duration and time of concentration and pollutant loads. This goal may be achieved through watershed-based structural treatment controls, in combination with site-specific BMPs. All treatment control BMPs should be located as close as possible to the pollutant sources, should not be located within waters of the U.S., and pollutant removal should be accomplished prior to discharge to waters of the US. Regional treatment control BMPs shall be operational prior to occupation of any of the priority project sites tributary to the regional treatment BMP.
5. The Permittees may establish a water quality credit system for alternatives to LID and hydromodification requirements specified above. A summary of any waivers and any credit given for the types of projects listed below should be included in the annual report. The following types of projects may be considered for the credit system:
- a. Redevelopment projects that reduces the overall impervious area
 - b. Brownfield redevelopment
 - c. High density developments (>7 units per acre)
 - d. Mixed use and transit-oriented development (within ½ mile of transit)
 - e. Dedication of undeveloped portions of the project site to parks, preservation areas and other pervious uses
 - f. Regional treatment systems with a capacity to treat flows from all upstream developments
 - g. Contribution to an urban runoff fund (see F.1.e, above)
 - h. Offsite mitigation within the same watershed (see E.5.d.iii above)
 - i. City Center area
 - j. Historic Districts and Historic Preservation areas
 - k. Live-work developments
 - l. In-fill projects

G. Approval of WQMP

Within 12 months of adoption of this Order, each Permittee shall develop and implement standard procedures and tools, and include in its LIP the following:

1. A WQMP review checklist that incorporates early in the planning process the required elements of the WQMP together with a clear process for consultation with the appropriate departments and sections within the municipal organization. This review process shall involve city or county planners during the preliminary and final WQMP review to adequately incorporate project-specific water quality measures and watershed protection principles in their CEQA analysis.
2. Tools or procedures to incorporate project conditions of approval, including proper funding and maintenance and operation of all structural BMPs. The parties responsible for the long-term maintenance and operation of the facilities upon project close-out and a funding mechanism for operation and maintenance shall be identified prior to approval of the WQMP.
3. A Permittee-specific procedure to ensure that appropriate easements and ownerships are recorded/included in appropriate documents that provides the Permittee the authority for post-construction BMP operation and maintenance (also see J.1, below).
4. A final project close-out procedure and checklist to ensure that post-construction BMPs (site design, structural source control and treatment control BMPs) have been built as per the approved WQMPs or other conditions of approval and are fully functional prior to issuance of certificates of occupancy (also see I.1 and 2, below).
5. A procedure to work cooperatively with the local vector control district to address any vector problems associated with the water quality control systems. If not properly designed and maintained, some of the BMPs implemented to treat urban runoff could create a habitat for vectors (e.g., mosquitoes and rodents) and become a nuisance. The WQMP review, approval, and closure processes shall include consultation and collaboration with the local vector control districts on BMP design, installation, and operation and maintenance to prevent or minimize vector issues. If vector or nuisance problems are identified during inspections, the local vector control district should be notified. Each Permittee should work with the vector control district to remedy any vector problems associated with the vectors.
6. The Permittees shall train those involved with WQMP review and approval in accordance with Section XVI, Training Requirements.

H. Field Verification of BMPs

1. The Permittees' project close-out procedures shall include field verification that site design, source control and treatment control BMPs are designed, constructed and functional in accordance with the approved WQMP. A copy of the verification inspection along with the WDID, information on the type, location and maintenance responsibility of the site design and treatment control BMPs shall be sent to the Regional Board office by regular mail or electronic mail.
2. The Permittees shall verify through visual observation, that the BMPs are properly maintained, operating, and are functional.
3. A follow up inspection of the post-construction BMPs shall be conducted prior to the rainy season within three years and every three years thereafter.

I. Change of Ownership and Recordation

1. The Permittees shall establish a mechanism to track conveyance of change in ownership and responsibility for the operation and maintenance of post-construction BMPs to ensure that they are properly recorded in public records at the County and/or City and the information is conveyed to all appropriate parties when there is a change in project or site ownership.
2. The Permittees shall maintain a database to track all structural treatment control BMPs, including the location of BMPs, parties responsible for construction, funding, operation and maintenance.

J. Operation and Maintenance of Post-Construction BMPs

1. The Permittees shall ensure that all post-construction BMPs continue to operate as designed and implemented with control measures necessary to effectively minimize the creation of nuisance or pollution associated with vectors, such as mosquitoes, rodents, flies, etc. Each Permittee should work with the vector control agency to remedy the problems associated with vectors. WQMPs shall identify the responsible party for maintenance, including vector minimization and control measures, and funding source(s) for operation and maintenance of all site design and structural treatment control systems. Permittees shall, through conditions of approval and during inspections, ensure proper maintenance and operation of all permanent flood control structures and structural post-construction BMPs installed in new developments prior to issuance of certificate of occupancy. Design of these structures shall allow adequate access for maintenance. Each Permittee shall maintain a database to track the operation and maintenance of the post-construction BMPs and annually review the adequacy of the long term operation and maintenance mechanisms it utilizes.
2. The parties responsible for the maintenance and operation of the facilities, and a funding mechanism for operation and maintenance shall be identified prior to issuance of occupancy permits.
3. Within twelve months of adoption of this Order, the Permittees shall develop a database to track operation and maintenance of post-construction BMPs. The database shall include type of BMP design, location of BMPs (latitude and longitude), date of construction, party responsible for maintenance, maintenance frequency, source of funding for operation and maintenance, maintenance verification, and any problems identified during inspection including any vector or nuisance problems. A copy of this database shall be submitted with the annual report.
4. The annual report shall include a list of all structural treatment control BMPs approved, constructed and/or operating within each Permittee's jurisdiction.

K. Pre-Approved Projects

1. The above provisions shall be implemented in a manner consistent with the maximum extent practicable standard for all priority projects 90 days from the date of

approval of the updated Water Quality Management Plan Guidance and Template as per Section XI.E.6.

2. The above provisions for LID and hydrologic conditions of concern are not applicable to projects that have an approved WQMP as of the date of adoption of this Order. The Regional Board recognizes that full implementation may not be feasible for certain projects which have received tentative tract or parcel map or other approvals.

XII. PUBLIC EDUCATION AND OUTREACH

- A. The Permittees shall continue to implement the public education efforts already underway as described in the 2006 ROWD/MSWMP and shall implement the most effective elements of the comprehensive public and business education strategy upon completion of the risk-prioritization strategy to this program element. Each year the Permittees shall review their public education and outreach efforts and revise their activities to adapt to the needs identified in the annual reassessment of program priorities with particular emphasis on addressing the most critical storm water pollution problems. Any changes to the on-going public education program must be described in the annual report.
- B. Consistent with the maximum extent practicable standard, each Permittee shall implement those elements of the public education and outreach program that are to be implemented by the Co-Permittees to measurably increase public knowledge regarding the storm drains and the impacts of urban runoff on receiving water quality.
- C. When feasible, the Permittees shall participate in joint outreach programs with other agencies including, but not limited to, the State of California Storm Water Quality Task Force, Caltrans, and other county and municipal storm water programs to ensure that a consistent message on storm water pollution prevention is disseminated to the public.
- D. The Permittees shall facilitate implementation of BMPs listed in the Storm Water Management Plan and/or the Water Quality Management Plan for restaurants, automotive service centers, gasoline stations and other similar facilities by distributing BMP brochures or other fact sheets to these facilities during inspections and/or through other means.
- E. Within 12 months from the date of adoption of this Order, the Permittees shall develop and maintain BMP guidance for the control of those potentially polluting activities identified during the previous permit cycle, which are not otherwise regulated by any agency, including guidelines for the household use of fertilizers, pesticides, herbicides and other chemicals, and guidance for mobile vehicle maintenance, carpet cleaners, commercial landscape maintenance, and pavement cutting. These guidance documents shall be distributed to the public, trade associations, etc., through participation in community events, trade association meetings and/or by mail.
- F. The Permittees shall ensure that appropriate educational materials, including the BMP brochures, are provided to all new industrial and commercial enterprises in their

jurisdiction at the time building and construction permits (or occupancy permits) are issued and/or at the time business licenses are issued.

- G. The Permittees shall continue to maintain a hotline telephone number and website to allow the public to report illegal dumping from residential, industrial, construction or commercial sites into public streets, storm drains and other waterbodies. The hotline number and website address for reporting storm water pollution problems shall be promoted in an appropriate advertising campaign. The Permittees shall further develop and maintain public education materials to encourage the public to report illegal dumping and unauthorized, non-storm water discharges from residential, industrial, construction and commercial sites into public streets, storm drains and to surface waterbodies and their tributaries; clogged storm drains; faded or missing catch basin stencils and general storm water and BMP information. Hotline and web site information shall be included in the public and business education program and shall be listed in the governmental pages of all regional phone books and on the Permittees' website.

XIII. MUNICIPAL FACILITIES / ACTIVITIES

- A. Each Permittee shall inventory its fixed facilities, field operations and drainage facilities and prioritize them based on threat to water quality or based on the risk-based scoring system. Each Permittee shall conduct inspections of these facilities on an annual basis to ensure that these facilities and activities do not contribute pollutants to receiving waters, consistent with the MEP standard. At a minimum, the following municipal facilities, that are owned and/or operated by the Permittees, shall be inspected. Records of these facilities and inspection findings shall be maintained in a database:
1. Public streets, roads (including rural roads) and highways within its jurisdiction;
 2. Parking facilities;
 3. Fire fighting training facilities;
 4. Flood management projects and flood control structures;
 5. Areas or facilities and activities discharging directly to environmentally sensitive areas such as 303(d) listed waterbodies or those with a RARE beneficial use designation;
 6. Publicly owned treatment works (including water and wastewater treatment plants) and sanitary sewage collection systems;
 7. Solid waste transfer facilities;
 8. Land application sites;
 9. Corporate yards including maintenance and storage yards for materials, waste, equipment and vehicles; and
 10. Household hazardous waste collection facilities.
 11. Municipal airfields.
 12. Parks and recreation facilities.
 13. Special event venues following special events (festivals, sporting events,
 14. Power washing.
 15. Other municipal areas and activities that the Permittee determines to be a potential source of pollutants.

- B. At least 80% of the storm water conveyance systems shall be inspected at least once during each reporting year and cleaned (and if necessary, repaired), with 100% of the facilities included in a two-year period, using the BMP fact sheet developed by the Management Committee. The inspection and cleaning frequency for all or portions of the drainage facilities shall be evaluated annually to determine the need for increasing the inspection and cleaning frequency. This information shall be included in the annual report.
- C. Each Permittee shall clean those drainage facilities where the inspection reveals that the sediment/storage volume is 25% full, or where there is evidence of illegal discharge or if accumulated sediment or debris impairs the hydraulic capacity of the facility.
- D. The Permittees' annual evaluation of the inspection and clean out frequency of drainage facilities, including catch basins referred to in Section B and C, above, shall consider the data generated by the historic and ongoing inspections and clean out of these facilities and IC/ID program. The evaluation shall be based on a prioritized list of drainage facilities considering factors such as: proximity to receiving waters, receiving water beneficial uses and impairments of beneficial uses, historical pollutant types and loads from past inspections/cleanings and the presence of downstream regional facilities that would remove the types of pollutants found in the drainage facility. Using this list, the Permittees shall revise clean out schedules and frequency and provide justification for any proposed clean out frequency that is less than once a year. This information shall be included in the annual report.
- E. Each Permittee shall examine opportunities to retrofit existing storm water conveyance systems and parks and other recreational areas with water quality protection measures. Within 12 months of adoption of this Order, the Principal Permittee shall submit a proposal for additional retrofit studies that incorporates opportunities for addressing any applicable TMDL implementation plans, hydromodification management and/or LID implementation within the permitted area. The Principal Permittee, in collaboration with the Co-Permittees, may conduct a system-wide evaluation in lieu of each Permittee conducting this evaluation⁹².
- F. Each Permittee shall implement control measures necessary to minimize infiltration of seepage from sanitary sewers to the storm drain systems through routine preventive maintenance of the storm drain system. The Permittees who are also owners and/or operators of sewage collection systems shall also implement a routine maintenance program for the sewage collection systems in accordance with the SSO Order. Each Permittee shall cooperate and coordinate with the appropriate sewage collection to swiftly respond to and contain any sewage spills. This control measure and coordination with the sewerage agency shall be documented in the LIP.
- G. The Permittees shall continue to train its employees in integrated pest management, and pesticide and fertilizer applications.
- H. Successful implementation of the provisions in this Order will require the cooperation of many different departments within each Permittee's jurisdiction (e.g., Fire Department, Department of Environmental Health, Planning Department, Transportation Department, Parks and Recreation, Building and Safety, Code Enforcement, etc.) As such, these

⁹² For example, see the 2005 RBF Retrofit Study conducted for Orange County MS4 permittees.

organizations are expected to actively participate in implementing this area-wide storm water program. Other public agency organizations having programs/activities that have an impact on storm water quality are listed in Attachment 3. The Permittees shall be responsible for ensuring that all necessary county and municipal departments within their jurisdiction are involved in the stormwater management program and comply with the local implementation plans (LIPs).

- I. Each Permittee shall annually evaluate the information provided by field staff during their maintenance activities to direct public outreach efforts and determine the need for revision of existing maintenance procedures or schedules. The results of this evaluation shall be provided in the annual report.
- J. Each Permittee shall include its procedures, schedules, and tools necessary to implement the requirements of this section in its LIP. The LIP shall state the positions responsible for performing and reporting completion of each task and the training requirements for that position.

XIV. MUNICIPAL CONSTRUCTION PROJECTS

- A. This Order authorizes the discharge of storm water runoff from construction projects that may result in land disturbance of one (1) acre or more (or less than one acre, if it is part of a larger common plan of development or sale which is one acre or more) that are under ownership and/or direct responsibility of any of the Permittees. All Permittee construction activities shall be in accordance with the ROWD and MSWMP.
- B. Municipal construction projects shall be in compliance with the latest version of the State's General Permit for Stormwater Discharges Associated with Construction Activities except that an NOI need not be filed with the State Board.
- C. Prior to commencement of construction activities, the Permittees shall notify the Executive Officer of the Regional Board of the proposed construction project by submitting a NOI as provided in Attachment 7 and a location map depicting the project location. The filing and annual fees for these NOIs are waived for the Permittees regulated under this Order.
- D. Upon completion of the construction project, the Permittee shall notify the Executive Officer or its designee by submitting a Notice of Termination (NOT), provided in Attachment 7 along with photographs of the completed project, and a location map depicting the project location (latitude and longitude), structural post-construction BMP location, field verification report and long term operation and maintenance responsibility. A database of post-construction BMPs for which the Permittees are responsible for shall be developed and referenced in the LIP.
- E. The Permittees shall develop and implement a WQMP, storm water pollution prevention plan (SWPPP), a monitoring program that is specific for the construction project prior to the commencement of any of the construction activities, and any other reports or plans required under the General Construction Activity Storm Water Permit. The SWPPP and the WQMP shall be kept at the construction site and released to the public and/or Regional Board staff upon request.

- F. The Permittees shall give advance notice to the Executive Officer of the Regional Board of any planned changes in the construction activity, which may result in non-compliance with the latest version of the State's General Construction Activity Storm Water Permit.
- G. Emergency Permittee public works projects required to protect public health and safety are exempted from compliance with the requirements of this subsection until the emergency ends, at which time they need to comply with the requirements of this section.
- H. All other terms and conditions of the latest version of the State's General Construction Activity Storm Water Permit shall be applicable.

XV. MONITORING AND RECORD KEEPING FOR DE MINIMUS TYPES OF DISCHARGES

- A. Within 12 months adoption of this Order, the Permittees shall revise their LIP to include the following information regarding their de minimus discharges, if any:
 - 1. The type of de minimus discharges including potential pollutants and concentration of each constituent from each source.
 - 2. The estimated average and maximum daily flow rates in million gallons per day (mgd), the expected start date of discharge, the frequency and duration of the discharge;
 - 3. The proposed discharge location(s), including latitude and longitude, for each discharge;
 - 4. A description of the BMPs and proposed treatment system (if appropriate);
 - 5. The affected receiving water;
 - 6. A map showing the flow path from the point of initial discharge to the receiving water.
 - 7. A proposed self-monitoring program⁹³ for the proposed discharge. All constituents with concentration limitations shall be monitored at least once per year, beginning with the initial monitoring at the start of the discharge. In general, the monitoring program shall be consistent with Attachment E of Order No. R8-2009-0003. Any variations from these requirements should be with the Executive Officer's approval.
- B. Permittees with de-minimus types of discharges from their facilities and/or operations that are currently regulated under Order No. R8-2009-0003 who wish to discharge under this Order shall continue with the monitoring and reporting program as authorized under Order R8-2009-003 and shall include that monitoring program in the LIP.
- C. Compliance determinations shall be based on available analyses for the time interval associated with the duration of the discharge. Where only one sample analysis is available in a specified time interval (e.g., weekly, monthly, quarterly), that sample shall serve to characterize the discharge for the entire interval.
- D. In the event the Permittee does not comply or will be unable to comply for any reason, with any prohibition, discharge limitation (e.g., maximum daily concentration limit), or

⁹³ For new discharges, the monitoring provision in Attachment E of Order R8-2009-003 may be used as a guide.

receiving water limitation of this Order, the Discharger shall notify the Executive Officer by telephone (951) 782-4130 within 24 hours of having knowledge of such noncompliance that may endanger public health or the environment, and shall confirm this notification in writing within five days, unless the Executive Officer waives the need for written notification. The written notification shall state the nature, time, duration, and cause of noncompliance, and shall describe the measures being taken to remedy the current noncompliance and, prevent recurrence including, where applicable, a schedule for implementation.

- E. Monitoring reports shall be submitted with the annual report and shall include:
1. The results of all chemical analyses,
 2. The daily flow data,
 3. A summary of the monthly activities including a report detailing compliance or noncompliance and the schedules for compliance,
 4. For every item of monitoring data where the requirements are not met, the monitoring report shall include a statement discussing the reasons for noncompliance, and the actions undertaken or proposed which will bring the discharger into full compliance with requirements at the earliest time, and an estimate of the date when the discharger will be in compliance. The discharger shall notify the Executive Officer by letter when compliance with the time schedule has been achieved.
- F. Permittees discharging at a volume equal to or greater than 150,000 gallons per day shall submit semi-annual reports that tabulate all measured flows and measured parameters within the most recent six month period. Where discharges associated with these projects last less than 6 months, a report covering the period of discharges shall be submitted.

XVI. TRAINING PROGRAM FOR STORM WATER MANAGERS, PLANNERS, INSPECTORS AND MUNICIPAL CONTRACTORS

- A. Within 12 months from the date of adoption of this Order, the Principal Permittee, in coordination with the Co-Permittees, shall develop a training program including a training schedule, curriculum content, and defined expertise and competencies for storm water managers, inspectors, maintenance crew, those involved in the review and approval of WQMPs, public works employees, community planners and for those preparing and/or reviewing CEQA documentation and for municipal contractors.
- B. The curriculum content should include: federal, state and local water quality laws and regulations as they apply to construction and grading activities, industrial and commercial activities; the potential effects of construction, industrial and commercial activities and urbanization on water quality; implementation and maintenance of erosion and sediment control BMPs and pollution prevention measures; the proper use and maintenance of erosion and sediment controls; the enforcement protocols and methods established in the Municipal Storm Water Management Program, Local Implementation Plan, Water Quality Management Plan, including Low Impact Development Principles and Hydrologic Conditions of Concern, the Construction Runoff Guidance Manual, Enforcement

Response Guide and Illicit Discharge/Illegal Connection Training Program. The training program should be coordinated with the local vector control district to insure that vector control issues related to storm water pollution control BMPs are incorporated into the training curriculum.

- C. The training modules for each category of trainees (managers, inspectors, planners, engineers, contractors, public works crew, etc.) should define the required competencies, outline the curriculum, a testing procedure at the end of the training program and proof of completion of training (Certificate of Completion).
- D. At least on an annual basis, the Principal Permittee shall provide and document training to applicable public agency staff on the updated Municipal Activities and Pollution Prevention Strategy (MAPPPS). and any other applicable guidance and procedures developed by the Permittees to address municipal activities in fixed facilities as well as field operations, including conveyance system maintenance. Each Permittee shall document training for its staff related to jurisdiction-specific responsibility, procedures and implementation protocols established in the LIP. The field program training should include Model Integrated Pest Management, Pesticide and Fertilizer Guidelines. Appropriate staff from each municipality shall attend at least three of these training sessions during the term of this Order. The training sessions may be conducted in classrooms or using videos, DVDs, or other multimedia with appropriate documentation and a final test to verify that the material has been properly reviewed and understood. In instances where applicable municipal operations are performed by contract staff, each Permittee shall require evidence that contract staff have received a level of training equivalent to that listed above.
- E. The Principal Permittee shall conduct and document public employee training for model environmental review (CEQA review), and on how to conduct public/business education for preparation of environmental documents, that incorporates at a minimum, the requirements in this Order related to new development and significant re-development and 401 certification.
- F. The Principal Permittee shall provide training information to municipal contractors to assist the contractors in training their staff. In instances where applicable municipal operations are performed by contract staff, the Permittees shall require evidence that contract staff have received a level of training equivalent to that listed above.
- G. The Principal Permittee shall notify designated Regional Board staff via e-mail at least 30 days prior to conducting any of these training sessions.
- H. Each Permittee shall have adequately trained its entire staff involved with storm water related projects and the implementation of this Order within six months from being assigned these duties and on an annual basis thereafter, prior to the rainy season.
- I. The LIP shall specify the training requirements for Permittee staff and contractor involved in implementing the requirements of this Order. Each Permittee shall maintain a written record of all training provided to its storm water and related program staff.

XVII. NOTIFICATION REQUIREMENTS

- A. Within 24 hours of discovery, the Permittees shall provide oral or email notification to the Executive Officer of noncompliant sites within its jurisdiction that are determined to

pose a threat to human health or the environment (e.g., an oil spill that could impact wild life, a hazardous substance spill where residents are evacuated, reportable quantities of hazardous substance spills defined in 40 CFR 117 & 302, etc.). Following oral notification, a written report must be submitted to the Executive Officer within 10 days, detailing the nature of the non-compliance, any corrective action taken by the site/facility owner, other relevant information (e.g., past history of non-compliance, environmental damage resulting from the non-compliance, site/facility owner responsiveness) and the type of enforcement action that will be carried out by the Permittee. Further, incidences of noncompliance shall be recorded along with the information noted in the written report and the final outcome/enforcement for the incident in the appropriate database.

- B. Sewage spill notification shall be consistent with the timelines specified in the SSO Order.
- C. All reports submitted by the Permittees as per the requirements in this Order for the approval of the Executive Officer shall be publicly noticed and made available on the Regional Board's website, or through other means, for public review and comments. The Executive Officer shall consider all comments received prior to approval of the reports. Any unresolved issues shall be scheduled for a public hearing at a Regional Board meeting after proper public notice.
- D. As specified in Section X.A.8, the Permittees shall deem facilities operating without a proper permit to be in significant non-compliance. These facilities shall be reported within 14 calendar days to the Regional Board by electronic mail or other written means. Permittees' notifications of facilities' failure to obtain required permits under the Construction Activities Storm Water General Permit (Construction Permit), Industrial Activities Storm Water General Permit (Industrial Permit), including Requirements to file a Notice of Intent or No Exposure Certification, Notice of Non-applicability, and/or 401 Certification must include, at a minimum, the following documentation:
 - 1. Name of the facility;
 - 2. Operator of the facility;
 - 3. Owner of the facility;
 - 4. Construction/Comercial/Industrial activity being conducted at the facility that is subject to the Construction//Industrial General Permit, or 401 Certification; and
 - 5. Records of communication with the facility operator regarding the violation, including an inspection report.

XVIII. PROGRAM MANAGEMENT ASSESSMENT / MSWMP REVIEW

- A. Upon the effective date of this Order, the Permittees shall start implementing the 2007 MSWMP consistent with the requirements of this Order. If major modifications to the 2007 MSWMP not addressed in this Order are determined to be necessary, the Permittees shall prepare and submit MSWMP modifications to the Executive Officer for review and approval. Such modifications may include regional and watershed-specific requirements and/or waste load allocations developed and approved pursuant to the TMDL process.
- B. By October 1 of each year, the Permittees shall evaluate the MSWMP to determine the

need for any revisions in order to reduce pollutants in MS4 discharges to the maximum extent practicable. In addition, the first annual review after adoption of this Order shall include the following:

1. Review of the formal training needs of municipal employees;
 2. Review of coordination meeting/training for the designated NPDES inspectors.; and
 3. Propose any changes to assess program effectiveness on an area-wide and jurisdictional basis. Permittees shall utilize the CASQA Guidance⁹⁴ for developing these assessment measures at the six outcome levels. The assessment measures must target both water quality outcomes and the results of municipal enforcement activities.
- C. The annual report shall include the findings of this review and a schedule to address necessary revisions, or a copy of the amended MSWMP with the proposed changes. Replacement pages are acceptable if modifications are not extensive. Annual reports shall also be submitted in electronic format.
- D. The Management Committee will continue to meet at least 11 times a year to discuss issues related to permit implementation and regional and statewide issues. Each Permittee's designated representative or a designated alternate should attend not less than 9 out of 11 meetings.

XIX. FISCAL RESOURCES

- A. The Permittees shall secure adequate funding for administration, implementation and enforcement of the areawide storm water management program elements and local storm water programs necessary to meet all requirements of this Order.
- B. The Permittees shall prepare and submit a financial summary to the Executive Officer. The financial summary shall be submitted with the annual report each year and shall, at a minimum, include the following:
1. Each Permittee's expenditures for the previous fiscal year,
 2. Each Permittee's budget for the current fiscal year,
 3. A description of the source of funds, and
 4. Each Permittee's estimated budget for the next fiscal year.

XX. PROVISIONS

- A. All reports submitted by the Permittees as per the requirements in this Order for the approval of the Executive Officer shall be publicly noticed and made available on the Regional Board's website, or through other means, for public review and comments. The Executive Officer shall consider all comments received prior to approval of the reports. Any unresolved significant issues shall be scheduled for a public hearing at a Regional Board meeting prior to approval by the Executive Officer.

⁹⁴ CASQA, May 2007. Municipal Stormwater Program Effectiveness Assessment Guidance.

- B. Permittees shall demonstrate compliance with all the requirements in this Order and specifically with Section III. Discharge Limitations, and Section IV. Receiving Water Limitations, through timely implementation of their MSWMP and any modifications, revisions, or amendments developed pursuant to this Order approved by the Executive Officer or determined by the Permittees to be necessary to meet the requirements of this Order. The MSWMP, including any approved amendments thereto is hereby made an enforceable component of this Order.
- C. The Permittees shall, at a minimum, implement all elements of the MSWMP and its components. Where the dates are different from the corresponding dates in this Order, the dates in this Order shall prevail. Any proposed revisions to the MSWMP shall be submitted with the Annual Report to the Executive Officer of the Regional Board for review and approval. All approved revisions to the MSWMP shall be implemented as per the time schedules approved by the Executive Officer. In addition to those specific controls and actions required by: (1) the terms of this Order and (2) the MSWMP and its components, each Permittee shall implement additional controls, if any are necessary, to reduce the discharge of pollutants in storm water to the maximum extent practicable as required by this Order.
- D. Certain BMPs implemented or required by the Permittees for urban runoff management may create habitat for vectors (e.g., mosquitoes and rodents) if not properly designed and maintained. Close collaboration and cooperative effort between the Permittees and local vector control districts and the State Department of Health Services during the development and implementation of urban runoff management programs are necessary to minimize potential vector habitat and public health impacts resulting from vector breeding. Nothing in this permit is intended to prohibit inspection or abatement of vectors by the State or local vector control agencies in accordance with the respective Health and Safety Code.
- E. The Permittees shall comply with Monitoring and Reporting Program No. R8-2009-0036 and any revisions thereto, which are hereby made a part of this Order. The Executive Officer is authorized to revise the Monitoring and Reporting Program to allow the Permittees to participate in regional, statewide, national or other monitoring programs in lieu of or in addition to Monitoring and Reporting Program No. R8-2009-0036.
- F. Upon approval by the Executive Officer or the Regional Board, all plans, reports and subsequent amendments required by this Order shall be implemented and shall become an enforceable part of this Order. Prior to approval by the Executive Officer, these plans, reports and amendments shall not be considered as an enforceable part of this Order.
- G. The Permittees shall report to the Executive Officer of the Regional Board:
 - 1. Any enforcement actions and discharges of storm or non-storm water, known to the Permittees, which may have an impact on human health or the environment, and
 - 2. Any suspected or reported activities on federal, state, or other entity's land or facilities, where the Permittees do not have any jurisdiction, and where the suspected or reported activities may be contributing pollutants to waters of the U.S.

- H. The permit application and special NPDES program requirements are contained in 40 CFR 122.21 (a), (b), (d)(2), (f), (p); 122.41 (a), (b), (c), (d), (e), (f), (g), (h), (i), (j), (k), (l); and 122.42 (c), and are incorporated into this Order by reference.

XXI. PERMIT MODIFICATION

- A. Following appropriate public notice, and in accordance with 40 CFR 122.41(f), this Order may be modified, revoked or reissued prior to its expiration date for the following reasons:
1. To address significant changes in conditions identified in the technical reports required by the Regional Board which were unknown at the time of the issuance of this Order;
 2. To incorporate applicable requirements of statewide water quality control plans adopted by the State Water Resources Control Board or any amendments to the Basin Plan approved by the Regional Board, the State Board and, if necessary, by the Office of Administrative Law and the USEPA;
 3. To comply with any applicable requirements, guidelines, or regulations issued or approved under the Clean Water Act, if the requirements, guidelines, or regulations contain different conditions or additional requirements than those included in this Order; or,
 4. To incorporate any requirements imposed upon the Permittees through the TMDL process.
- B. The filing of a request by the Permittees for modification, revocation and re-issuance, or termination or a notification of planned changes or anticipated noncompliance does not stay any conditions of this Order.

XXII. PERMIT EXPIRATION AND RENEWAL

- A. This Order expires on XXXXXXXXXXXX and the Permittees must file a Report of Waste Discharge (permit renewal application) no later than 180 days in advance of such expiration date as application for issuance of new waste discharge requirements. The Report of Waste Discharge shall, at a minimum, include the following:
1. A program effectiveness analysis, including the effectiveness of the overall urban and storm water runoff management program in achieving water quality standards in receiving waters.
 2. Any proposed revisions to the urban and storm water runoff management program based on the findings of the program effectiveness analysis (this could be included in a revised MSWMP). Revisions to the program elements should be consistent with the risk-based approach proposed in the 2006 Report of Waste Discharge.
 3. Changes in land use and/or population including map updates.
 4. Any significant changes to the storm drain systems, outfalls, detention or retention basins or dams, and other controls including map updates of the storm drain systems.
 5. Any new or revised program elements and compliance schedule(s) necessary to comply with Section VI of this Order.

- B. All permit applications (Report of Waste Discharge), annual reports and other information submitted under this Order shall be signed by either a principal executive officer or a ranking elected official (40 CFR 122.22(a)(3)) or a duly authorized representative as per 40 CFR 122.22(b).
- C. This Order shall serve as an NPDES Permit pursuant to Section 402 (p) of the Clean Water Act, or amendments thereto, and shall become effective ten days after the date of its adoption provided the Regional Administrator of the USEPA has no objections. If the Regional Administrator objects to its issuance, the Permit shall not become effective until such objection is withdrawn.

I, Gerard Thibeault, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Santa Ana Region, on XXXXXXXXXX.

Gerard J. Thibeault
Executive Officer

Attachment 2: Inland Surface Streams

A. Santa Ana River

Santa Ana River, Reaches 4, 5, and 6

B. San Bernardino Mountain Streams

Mill Creek Drainage

Mill Creek, Reaches 1 and 2

Mountain Home Creek

Mountain Home Creek, East Fork

Monkey Face Creek

Alger Creek

Falls Creek

Vivian Creek

High Creek

Other Tributaries: Lost, Oak Cove, Green, Skinner, Momyer and Glen Martin
Creeks, and other Tributaries to these Creeks

Bear Creek Drainage

Bear Creek

Siberia Creek

Slide Creek

All Other Tributaries to these Creeks

Big Bear Lake Tributaries

North Creek

Metcalf Creek

Grout Creek

Rathbone (Rathbun) Creek

Summit Creek

Other Tributaries to Big Bear Lake: Johnson, Minnelusa, Polique, and Red Ant
Creeks, and other Tributaries to these Creeks

Baldwin Lake Drainage

Shay Creek

Other Tributaries to Baldwin Lake: Sawmill, Green, and Caribou Canyons and other
Tributaries to these Creeks.

C. Other Streams Draining to Santa Ana River (Mountain Reaches)

Cajon Creek

City Creek

Devil Canyon Creek

East Twin and Strawberry Creeks

Waterman Canyon Creek

Fish Creek

Forsee Creek

Plunge Creek

Barton Creek
Bailey Canyon Creek
Kimbark Canyon, East Fork Kimbark Canyon, Ames Canyon and West
Fork Cable Canyon Creeks
Valley Reaches of Above Streams
Other Tributaries (Mountain Reach): Alder, Badger Canyon, Bledsoe
Gulch, Borea Canyon, Breakneck, Cable Canyon, Cienega Seca, Cold,
Converse, Coon, Crystal, Deer, Elder, Fredalba, Frog, Government,
Hamilton, Heart Bar, Hemlock, Keller, Kilpecker, Little Mill, Little Sand
Canyon, Lost, Meyer Canyon, Mile, Monroe Canyon, Oak, Rattlesnake,
Round Cienega, Sand, Schneider, Staircase, Warm Springs Canyon and
Wild Horse Creeks, and other tributary to these Creeks

D. San Gabriel Mountain Streams (Mountain Reaches)

San Antonio Creek
Lytle Creek (South, Middle, and North Forks) and Coldwater Canyon Creek
Day and East Etiwanda Creeks
Valley Reaches of Above Streams
Cucamonga Creek (Mountain Reach)
Cucamonga Creek (Valley Reach)
Other Tributaries (Mountain Reaches): San Sevaine, Deer, Duncan
Canyon, Henderson Canyon, Stoddard Canyon, Icehouse Canyon,
Cascade Canyon, Cedar, Falling Rock, Kerkhoff and Cherry Creeks, and other
tributaries to these Creeks.

E. San Timoteo Area Streams

San Timoteo Creek, Reaches 1 and 2
Oak Glen, Potato Canyon and Birch Creeks
Yucaipa Creek

F. Prado Area Streams

Chino Creek

G. Lakes and Reservoirs

Baldwin Lake
Big Bear Lake
Jenks Lake
Prado Park Lakes

**Attachment 3: List of Other Entities with the Potential to Discharge Pollutants to the
San Bernardino County Storm Water Conveyance System**

A. Government Agencies

U.S. Army Corps of Engineers
U.S. Department of Agriculture - Forest Services, San Bernardino County National
Forest
California Department of Transportation (Cal Trans)
California Department of Parks and Recreation - Chino Hills State Park
Inland Valley Development Agency, San Bernardino International Trade Center and
Airport

B. Hospitals

Bear Valley Community Hospital
Chino Community Hospital
Doctors Hospital
Kaiser Foundation Hospital
Loma Linda Community Hospital
Loma Linda University Medical Center
Mountains Community Hospital
Ontario Community Hospital
Patton State Hospital
U.S. Department of Veterans Affairs - Jerry L. Pettis Memorial Veterans Medical Center
Redlands Community Hospital
St. Bernardino Medical Center
San Antonio Community Hospital
San Bernardino Community Hospital
San Bernardino County Hospital

C. Railroads

AT&SF Railway Company
Southern Pacific Railroad Company

D. School Districts

Alta Loma Elementary School District
Bear Valley Unified School District
Central Elementary School District
Chaffey Joint Union High School District
Chino Valley Unified School District
Colton Joint Unified School District
Cucamonga Elementary School District
Etiwanda Elementary School District
Fontana Unified School District
Mountain View Elementary School District
Mt. Baldy joint Elementary School District
Ontario-Montclair Elementary School District
Rialto Unified School District
Rim of the World Unified School District

Redlands Unified School District
San Bernardino City Unified School District
Upland Unified School District
Yucaipa Joint Unified School District

E. Universities and Colleges

California State University - California State University San Bernardino
San Bernardino Community College District - Chaffey College Campus
San Bernardino Community College District - Crafton Hills College Campus
San Bernardino Community College District - San Bernardino Valley College Campus
University of Redlands
Loma Linda University

F. Water Districts

Big Bear Municipal Water District
Bear Valley Water District
Inland Empire Utilities Agency
Cucamonga County Water District
East Valley Water District
Monte Vista Water District
San Bernardino Valley Municipal Water District
San Bernardino Valley Water Conservation District
West San Bernardino County Water District
Yucaipa Valley Water District

G. Transportation

Omnitrans
Metrolink (Fontana, Montclair, Ontario, Rancho Cucamonga, Rialto, San Bernardino)
Redlands Municipal Airport
Rialto Municipal Airport
Chino Airport
Cable Airport

H. Other Potential Dischargers

United States Postal Service
California National Guard
Southern California Edison

Attachment 4: Glossary

Basin Plan – Water Quality Control Plan developed by the Regional Board for the Santa Ana River Watershed.

Beneficial Uses – The uses of water necessary for the survival or well being of man, plants, and wildlife. These uses of water serve to promote the tangible and intangible economic, social, and environmental goals. “Beneficial Uses” that may be protected against include, but are not limited to: domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves. Existing beneficial uses are uses that were attained in the surface or ground water on or after November 28, 1975; and potential beneficial uses are uses that would probably develop in future years through the implementation of various control measures. “Beneficial Uses” are equivalent to “Designated Uses” under federal law. [California Water Code Section 13050(f)]. Beneficial Uses for the Receiving Waters are identified in the Basin Plan.

Best Available Technology (BAT) – BAT is the acronym for best available technology economically achievable. BAT is the technology-based standard established by congress in CWA section 402(p)(3)(A) for industrial dischargers of storm water. Technology-based standards establish the level of pollutant reductions that dischargers must achieve, typically by treatment or by a combination of treatment and best management practices, or BMPs. For example, secondary treatment (or the removal of 85% suspended solids and BOD) is the BAT for suspended solid and BOD removal from a sewage treatment plant. BAT generally emphasizes treatment methods first and pollution prevention and source control BMPs secondarily.

The best economically achievable technology that will result in reasonable further progress toward the national goal of eliminating the discharge of all pollutants is determined in accordance with regulations issued by the Environmental Protection Agency Administrator. Factors relating to the assessment of best available technology shall take into account the age of equipment and facilities involved, the process employed, the engineering aspects of the application of various types of control techniques, process changes, the cost of achieving such effluent reduction, non-water quality environmental impact (including energy requirements), and such other factors as the permitting authority deems appropriate.

Best Conventional Technology (BCT) – BCT is an acronym for Best Conventional Technology. BCT is the treatment techniques, processes and procedure innovations, and operating methods that eliminate or reduce chemical, physical, and biological pollutant constituents.

Best Management Practices – Best Management Practices (BMPs) are defined in 40 CFR 122.2 as schedules of activities, prohibitions of practices, maintenance procedures, and other management practices to prevent or reduce the pollution of waters of the United States. BMPs also include treatment requirements, operating procedures and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage. In the case of municipal storm water permits, BMPs are typically used in place of numeric effluent limits.

Bioaccumulate – The progressive accumulation of contaminants in the tissues of organisms through any route including respiration, ingestion, or direct contact with contaminated water, sediment, pore water, or dredged material to a higher concentration than in the surrounding environment. Bioaccumulation occurs with exposure and is independent of the trophic level.

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

Biological Integrity – Defined in Karr J.R. and D.R. Dudley. 1981. Ecological perspective on water quality goals. Environmental Management 5:55-68 as: “A balanced, integrated, adaptive community of organisms having a species composition, diversity, and functional organization comparable to that of natural habitat of the region.” Also referred to as ecosystem health.

CalTrans - California Department of Transportation

CEQA – California Environmental Quality Act (Section 21000 et seq. of the California Public Resources Code).

Clean Water Act Section 402(p) – [33 USC 1342(p)] is the federal statute requiring municipal and industrial dischargers to obtain NPDES permits for their discharges of storm water.

Clean Water Act Section 303(d) Listed Water Body – is an impaired water body in which water quality does not meet applicable water quality standards and/or is not expected to meet water quality standards, even after the application of technology-based pollution controls required by the CWA. The discharge of urban runoff to these water bodies by the Co-permittees is significant because these discharges can cause or contribute to violations of applicable water quality standards.

Conditions of Concern – Scour, erosion (sheet, rill and/or gully), aggradation (raising of a streambed from sediment deposition), and changes in fluvial geomorphology, hydrology or the aquatic ecosystem.

Construction Site – Any project, including projects requiring coverage under the General Construction Permit, that involves soil disturbing activities including, but not limited to, clearing, grading, disturbances to ground such as stockpiling, and excavation

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

CWA – Federal Clean Water Act

CWC – California Water Code

Debris – Debris is defined as the remains of anything destroyed or broken, or accumulated loose fragments of rock.

Development Projects - New development or redevelopment with land disturbing activities; structural development, including construction or installation of a building or structure, the creation of impervious surfaces, public agency projects, and land subdivision.

Dry Season – June 1 through September 30 of each year.

Effective Impervious Area (EIA)⁹⁵ – EIA is that portion of the total impervious area (TIA) that is directly connected to the stream drainage system. The EIA includes streets, driveways, sidewalks adjacent to curbed streets, parking lots, and rooftops hydraulically connected to the curb or storm sewer system. Impervious area such as rooftops, streets, sidewalks, and parking areas do not allow water to drain into the soil. Impervious area that collects and drains the water directly to a stream or wetland system via pipes or sheet flow is considered “effective impervious area” because it effectively drains the landscape. Impervious area that drains to landscaped areas, swales, parks and other impervious areas is considered “ineffective” because the water is allowed to infiltrate through the soil and into ground water, without a direct connection to the stream or wetland.

Reducing effective impervious area is defined as disconnecting impervious surfaces such as sidewalks, rooftops, parking areas, and streets, from the drainage system so that runoff percolates into the soil and does not flow directly to streams. Disconnecting the stormwater system allows the watersheds’ hydrologic cycle to respond in a manner that more closely reflects pre-disturbed conditions. EIA reduction can occur as part of new development, redevelopment, or be part of a retrofit design. The level of benefit is determined by how well the practices minimize runoff in small to mid size storm events.

Effluent Limitations – Limitations on the volume of each waste discharge, and the quantity and concentrations of pollutants in the discharge. The limitations are designed to ensure that the discharge does not cause water quality objectives to be exceeded in the receiving water and does not adversely affect beneficial uses.

Effluent limitations are limitations of the quantity and concentrations of pollutants in a discharge. The limitations are designed to ensure that the discharge does not cause water quality objectives to be exceeded in the receiving water and does not adversely affect beneficial uses. In other words, an effluent limit is the maximum concentration of a pollutant that a discharge can contain. To meet effluent limitations, the effluent typically must undergo one or more forms of treatment to remove pollutants in order to lower the pollutant concentration below the limit. Effluent limits are typically numeric (e.g., 10 mg/l), but can also be narrative (e.g., no toxics in toxic amounts).

Environmentally Sensitive Areas (ESAs) - Areas that include but are not limited to all Clean Water Act Section 303(d) impaired water bodies; areas designated as Areas of Special Biological Significance by the State Water Resources Control Board (Water Quality Control Plan for the Santa Ana River Basin (1994) and amendments); water bodies designated with the RARE beneficial use by the State Water Resources Control Board (Water Quality Control Plan for the Santa Ana River Basin (1994) and amendments); areas designated as preserves or their equivalent under the Natural Communities Conservation Program (Multiple Species Habitat Conservation Plan, MSHCP) within the Cities and County of San Bernardino; and any

⁹⁵ United States Environmental Protection Agency, May 2005. Estimating and Projecting Impervious Cover in the Southeastern United States. EPA/600/R-05/061.

other equivalent environmentally sensitive areas which have been identified by the Copermittees.

Erosion – When land is diminished or wane away due to the effects of wind, water, or glacial ice. Often the eroded debris (silt or sediment) becomes a pollutant via storm water runoff. Erosion occurs naturally but can be intensified by land clearing activities such as farming, development, road building, and timber harvesting.

GIS - Geographical Information Systems

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

Green Infrastructure–“management approaches and technologies that utilize, enhance and/or mimic the natural hydrologic cycle processes of infiltration, evapotranspiration and reuse.”⁹⁶ (USEPA 2008). Green infrastructure approaches currently in use include green roofs, trees and tree boxes, rain gardens, vegetated swales, pocket wetlands, infiltration planters, porous and permeable pavements, vegetated median strips, reforestation/revegetation, and protection and enhancement of riparian buffers and floodplains. Green infrastructure is used interchangeably with low impact development (LID). See LID.

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

Hydromodification – the “alteration of the hydrologic characteristics of coastal and non-coastal waters, which in turn could cause degradation of water resources”⁹⁷(USEPA, 2007).

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

IC/ID – Illicit Connection/Illegal Discharge

Illicit Connection – Illicit Connection means any connection to the MS4 that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term Illicit Connection includes all non storm-water discharges and connections except discharges pursuant to an NPDES permit, discharges that are identified in Section II, Discharge Limitations/Prohibitions, of this Order, and discharges authorized by the Executive Officer.

Illicit Discharge – Any discharge to a municipal separate storm sewer that is prohibited under local, state, or federal statutes, ordinances, codes, or regulations. The term illicit discharge includes all non-storm water discharges except discharges pursuant to an NPDES permit,

⁹⁶ United States Environmental Protection Agency, et. al. 2008. Managing Wet Weather with Green Infrastructure – Action Strategy 2008.

⁹⁷ United States Environmental Protection Agency. 2007. National Management Measures to Control Nonpoint Source Pollution from Hydromodification. EPA-841-B-07-002.

discharges that are identified in Section V, Effluent Limitations and Discharge Specifications, of this Order, and discharges authorized by the Regional Board.

Impaired Waterbody – Section 303(b) of the CWA requires each of California's Regional Water Quality Control Boards to routinely monitor and assess the quality of waters of their respective regions. If this assessment indicates that Beneficial Uses are not met, then that waterbody must be listed under Section 303(d) of the CWA as an Impaired Waterbody. The 2004 water quality assessment found a number of water bodies within the Permit Area as impaired pursuant to Section 303(d). In the Permit Area, these include: Canyon Lake (for nutrients and pathogens); Lake Elsinore (for nutrients, organic enrichment/low dissolved oxygen, unknown toxicity and sedimentation); Lake Fulmor (for pathogens); Santa Ana River, Reach 3 (for nutrients, pathogens, salinity, TDS, and chlorides); and Santa Ana River, Reach 4 (for pathogens).

Implementation Agreement – The Implementation Agreement establishes the responsibilities of each Permittee and a procedure for funding the shared costs.

Land Disturbance – The clearing, grading, excavation, stockpiling, or other construction activity that results in the possible mobilization of soils or other Pollutants into the MS4. This specifically does not include routine maintenance activity to maintain the original line and grade, hydraulic capacity, or original purpose of the facility. This also does not include emergency construction activities required to protect public health and safety. The Permittees should first confirm with Regional Board staff if they believe that a particular routine maintenance activity is exempt under this definition from the General Construction Activity Storm Water Permit or other Orders issued by the Regional Board.

Load Allocations (LA) – Distribution or assignment of TMDL Pollutant loads to entities or sources for existing and future nonpoint sources, including background loads.

Low Impact Development (LID) – A storm water management and land development strategy that combines a hydrologically functional site design with pollution prevention measures to compensate for land development impacts on hydrology and water quality. The approach emphasizes conservation and the use of on-site natural features integrated with engineered, small-scale hydrologic controls to more closely reflect pre-development hydrologic functions. Low Impact Development methods mimic the predevelopment site hydrology by using site design techniques that store, infiltrate, evaporate, and detain runoff. Low impact development and green infrastructure are used interchangeably. LID is an innovative storm water management approach with a basic principle that is modeled after nature: manage rainfall at the source using site design techniques that store, infiltrate, bio-treat, evaporate and detain runoff. LID's goal is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, bio-treat, store, evaporate and detain runoff close to its source. A goal of LID is to use site and subdivision design techniques in coordination with storm water management engineering to mimic the hydrologic conditions associated with an undeveloped site.

LID principles are based on controlling stormwater at the source by the use of microscale controls that are distributed throughout the site. This is unlike conventional approaches that typically convey and manage runoff in large facilities located at the base of drainage areas. These multifunctional site designs incorporate alternative storm water management practices such as functional landscape that act as storm water facilities, flatter grades, depression storage and open drainage swales. This system of controls can reduce or eliminate the need

for a centralized best management practice (BMP) facility for the control of storm water runoff. Although traditional storm water control measures have been documented to effectively remove pollutants, the natural hydrology is still negatively affected (inadequate base flow, thermal fluxes or flashy hydrology), which can have detrimental effects on ecosystems, even when water quality is not compromised (Coffman, 2000). LID practices offer an additional benefit in that they can be integrated into the infrastructure and are more cost effective and aesthetically pleasing than traditional, structural storm water conveyance systems.

MEP - MEP is an acronym for "Maximum Extent Practicable" and refers to the standard for implementation of storm water management programs. Section 402(p)(3)(B)(iii) of the Clean Water Act requires that municipal storm water permits "shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques, and system design and engineering methods, and such other provisions as the Administrator or the State determines appropriate for the control of such pollutants." In practice, compliance with the MEP standard is evaluated by how well the Permittee implements the "minimum measures" identified by EPA, including: (1) Public education and outreach on storm water impacts; (2) Public involvement/participation; (3) Illicit discharge detection and elimination; (4) Construction site storm water runoff control; (5) Post-construction storm water management in new development and redevelopment; and (6) Pollution prevention/good housekeeping for municipal operations. Collectively, these minimum measures are often referred to as "Best Management Practices" or BMPs. The MEP standard does not require Permittees to reduce pollutant concentrations below natural background levels, nor does it necessarily require further reductions where pollutant concentrations in the receiving water already meet water quality objectives. In implementing the MEP standard, it is appropriate for Permittees to prioritize their resource allocation to address the storm water pollution problems that pose the greatest and most immediate threat to human health or the environment. 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, typically by treatment or by a combination of source control and treatment control BMPs. MEP generally emphasizes pollution prevention and source control BMPs primarily (as the first line of defense) in combination with treatment methods serving as a backup (additional line of defense). MEP considers economics and is generally, but not necessarily, less stringent than BAT. A definition for MEP is not provided either in the statute or in the regulations. Instead the definition of MEP is dynamic and will be defined by the following process over time: municipalities propose their definition of MEP by way of their urban runoff management programs. Their total collective and individual activities conducted pursuant to the urban runoff management programs becomes their proposal for MEP as it applies both to their overall effort, as well as to specific activities (e.g., MEP for street sweeping, or MEP for MS4 maintenance). In the absence of a proposal acceptable to the Regional Board, the Regional Board defines MEP.

In a memo dated February 11, 1993, entitled "Definition of Maximum Extent Practicable," Elizabeth Jennings, Senior Staff Counsel, SWRCB addressed the achievement of the MEP standard as follows:

"To achieve the MEP standard, municipalities must employ whatever Best Management Practices (BMPs) are technically feasible (i.e., are likely to be effective) and are not cost prohibitive. The major emphasis is on technical feasibility. Reducing pollutants to the MEP means choosing effective BMPs,

and rejecting applicable BMPs only where other effective BMPs will serve the same purpose, or the BMPs would not be technically feasible, or the cost would be prohibitive. In selecting BMPs to achieve the MEP standard, the following factors may be useful to consider:

- a. Effectiveness: Will the BMPs address a pollutant (or pollutant source) of concern?*
- b. Regulatory Compliance: Is the BMP in compliance with storm water regulations as well as other environmental regulations?*
- c. Public Acceptance: Does the BMP have public support?*
- d. Cost: Will the cost of implementing the BMP have a reasonable relationship to the pollution control benefits to be achieved?*
- e. Technical Feasibility: Is the BMP technically feasible considering soils, geography, water resources, etc?*

The final determination regarding whether a municipality has reduced pollutants to the maximum extent practicable can only be made by the Regional or State Water Boards, and not by the municipal discharger. If a municipality reviews a lengthy menu of BMPs and chooses to select only a few of the least expensive, it is likely that MEP has not been met. On the other hand, if a municipal discharger employs all applicable BMPs except those where it can show that they are not technically feasible in the locality, or whose cost would exceed any benefit derived, it would have met the standard. Where a choice may be made between two BMPs that should provide generally comparable effectiveness, the discharger may choose the least expensive alternative and exclude the more expensive BMP. However, it would not be acceptable either to reject all BMPs that would address a pollutant source, or to pick a BMP base solely on cost, which would be clearly less effective. In selecting BMPs the municipality must make a serious attempt to comply and practical solutions may not be lightly rejected. In any case, the burden would be on the municipal discharger to show compliance with its permit. After selecting a menu of BMPs, it is the responsibility of the discharger to ensure that all BMPs are implemented."

Municipal Storm Water Conveyance System – (See Municipal Separate Storm Sewer System or MS4).

Municipal Separate Storm Sewer System (MS4) – MS4 is an acronym for Municipal Separate Storm Sewer System. A Municipal Separate Storm Sewer System is a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, natural drainage features or channels, modified natural channels, man-made channels, or storm drains): (i) Owned or operated by a State, city town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or designated and approved management agency under section 208 of the CWA that discharges to waters of the United States; (ii) Designated or used for collecting or conveying storm water; (iii) Which is not a combined sewer; (iv) Which is not part of the Publicly Owned Treatment Works (POTW) as defined at 40 CFR 122.26.

Historic and current developments make use of natural drainage patterns and features as conveyances for urban runoff. Urban streams used in this manner are part of the municipalities MS4 regardless of whether they are natural, man-made, or partially modified features. In these cases, the urban stream is both an MS4 and a receiving water.

National Pollution Discharge Elimination System (NPDES) – Permits issued under Section 402(p) of the Federal Clean Water Act for regulating discharge of pollutants to waters of the United States.

NOI [Notice of Intent] – A NOI is an application for coverage under the General Stormwater Permits.

Non-Point Source Pollution (NPS) – Non point source refers to diffuse, widespread sources of pollution. These sources may be large or small, but are generally numerous throughout a watershed. Non Point Sources include but are not limited to urban, agricultural, or industrial areas, roads, highways, construction sites, communities served by septic systems, recreational boating activities, timber harvesting, mining, livestock grazing, as well as physical changes to stream channels, and habitat degradation. NPS pollution can occur year round any time rainfall, snowmelt, irrigation, or any other source of water runs over land or through the ground, picks up pollutants from these numerous, diffuse sources and deposits them into rivers, lakes, and coastal waters or introduces them into ground water.

Non-Storm Water – Non-storm water consists of all discharges to and from a storm water conveyance system that do not originate from precipitation events (i.e., all discharges from a conveyance system other than storm water). Non-storm water includes illicit discharges, non-prohibited discharges, and NPDES permitted discharges. An illicit discharge is defined at 40 CFR 122.26(b)(2) as any discharge to a municipal storm water conveyance system that is not composed entirely of storm water except discharges pursuant to a separate NPDES permit and discharges resulting from emergency fire fighting activities.

NOT - Notice of Termination – Formal notice to the Regional Board of intent to terminate water discharge for projects covered under a General Stormwater Permit.

Nuisance – As defined in the Porter-Cologne Water Quality Control Act a nuisance is “anything which meets all of the following requirements: 1) Is injurious to health, or is indecent, or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property. 2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal. 3) Occurs during, or as a result of, the treatment or disposal of wastes.”

Numeric Effluent Limitations – The typical method by which effluent limits are prescribed for pollutants in waste discharge requirements implementing the federal NPDES regulations. When numeric effluent limits are met at the “end-of-pipe,” the effluent discharge generally will not cause water quality standards to be exceeded in the receiving waters (i.e., water quality standards will also be met).

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PAH (Polycyclic aromatic hydrocarbon) – are hydrocarbon that consist of fused aromatic rings. PAHs occur in oil, coal, and tar deposits, and are produced as byproducts of fuel burning (whether fossil fuel or biomass). PAHs are persistent, bioaccumulative, and toxic (PBT) pollutants. Though exposure usually occurs by breathing contaminated air, other sources include industrial processes, transportation, energy production and use, and disposal activities

Party – Defined as an individual, association, partnership, corporation, municipality, state or federal agency, or an agent or employee thereof. [40 CFR 122.2]

Permittees – Co-permittees and the Principal Permittee

Person – A person is defined as an individual, association, partnership, corporation, municipality, State or Federal agency, or an agent or employee thereof. [40 CFR122.2].

Point Source – Any discernible, confined, and discrete conveyance, including, but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure, container, rolling stock, concentrated animal feeding operations, landfill leachate collection systems, vessel, or other floating craft from which pollutants are or may be discharged. This term does not include return flows from irrigated agriculture or agricultural storm water runoff.

Pollutant – Any agent that may cause or contribute to the degradation of water quality such that a condition of pollution or contamination is created or aggravated. It includes any type of industrial, municipal, and agricultural waste discharged into water. The term “pollutant” is defined in section 502(6) of the Clean Water Act as follows: “The term ‘pollutant’ means dredged spoil, solid waste, incinerator residue, sewage, garbage, sewage sludge, munitions, chemical wastes, biological materials, radioactive materials, heat, wrecked or discarded equipment, rock, sand, cellar dirt and industrial, municipal, and agricultural waste discharged into water.” It has also been interpreted to include water characteristics such as toxicity or acidity.

Pollutants of Concern – A list of potential pollutants to be analyzed for in the Monitoring and Reporting Program. This list shall include: TSS, total inorganic nitrogen, total phosphorus, soluble reactive phosphorus, acute toxicity, fecal coliform, total coliform, pH, and chemicals/potential Pollutants expected to be present on the project site. In developing this list, consideration should be given to the chemicals and potential Pollutants available for storm water to pick-up or transport to Receiving Waters, all Pollutants for which a waterbody within the Permit Area that has been listed as impaired under CWA Section 303(d)), the category of development and the type of Pollutants associated with that development category. It also refers to pollutants for which water bodies are listed as impaired under CWA section 303(d), pollutants associated with the land use type of a development, and/or pollutants commonly associated with urban runoff. Pollutants commonly associated with urban runoff include total suspended solids; sediment; pathogens (e.g., bacteria, viruses, protozoa); heavy metals (e.g., copper, lead, zinc, and cadmium); petroleum products and polynuclear aromatic hydrocarbons; synthetic organics (e.g., pesticides, herbicides, and PCBs); nutrients (e.g., nitrogen and phosphorus fertilizers); oxygen-demanding substances (decaying vegetation, animal waste, and anthropogenic litter).

Pollution – As defined in the Porter-Cologne Water Quality Control Act, pollution is “the alteration of the quality of the waters of the U.S. by waste, to a degree that unreasonably affects either of the following: 1) The waters for beneficial uses; or 2) Facilities that serve these beneficial uses.” Pollution may include contamination.

Pollution Prevention – Pollution prevention is defined as practices and processes that reduce or eliminate the generation of pollutants, in contrast to source control, treatment, or disposal.

Post-Construction BMPs – A subset of BMPs including structural and non-structural controls which detain, retain, filter, or educate to prevent the release of pollutants to surface waters during the final functional life of development.

POTW [Publicly Owned Treatment Works] – Wastewater treatment facilities owned by a public agency.

Principal Permittee – San Bernardino County Flood Control District

Priority Development Projects - New development and redevelopment project categories listed in Section XI.D.4 of Order No. R8-2009-0036.

Rainy Season – October 1 through May 31st of each year.

Receiving Waters – Waters of the United States

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

Redevelopment - The creation, addition, and or replacement of impervious surface on an already developed site. Examples include the expansion of a building footprint, road widening, the addition to or replacement of a structure, and creation or addition of impervious surfaces. Replacement of impervious surfaces includes any activity that is not part of a routine maintenance activity where impervious material(s) are removed, exposing underlying soil during construction. Redevelopment does not include trenching and resurfacing associated with utility work; resurfacing and reconfiguring surface parking lots and existing roadways; new sidewalk construction, pedestrian ramps, or bike lane on existing roads; and routine replacement of damaged pavement, such as pothole repair.

Sediment – Soil, sand, and minerals washed from land into water. Sediment resulting from anthropogenic sources (i.e. human induced land disturbance activities) is considered a pollutant. This Order regulates only the discharges of sediment from anthropogenic sources and does not regulate naturally occurring sources of sediment. Sediment can destroy fish-nesting areas, clog animal habitats, and cloud waters so that sunlight does not reach aquatic plants.

SIC [Standard Industrial Classification] – Four digit industry code, as defined by the US Department of Labor, Occupational Safety and Health Administration. The SIC Code is used to identify if a facility requires coverage under the General Industrial Activities Storm Water Permit.

Significant Redevelopment –The addition or creation of 5,000, or more, square feet of impervious surface on an existing developed site. This includes, but is not limited to, construction of additional buildings and/or structures, extension of the existing footprint of a building, construction of impervious or compacted soil parking lots. Significant Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, the original purpose of the constructed facility or emergency actions required to protect public health and safety.

Site Design BMPs – Any project design feature that reduces the creation or severity of potential pollutant sources or reduces the alteration of the project site’s natural flow regime. Redevelopment projects that are undertaken to remove pollutant sources (such as existing surface parking lots and other impervious surfaces) or to reduce the need for new roads and other impervious surfaces (as compared to conventional or low-density new development) by incorporating higher densities and/or mixed land uses into the project design, are also considered site design BMPs

Small Municipal Separate Storm Sewer System (Small MS4)⁹⁸ – A conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, man-made channels, or storm drains) that are:

- (i) Owned or operated by the United States, a State, city, town, boroughs, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, storm water, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or designated and approved management agency under section 208 of the CWA that discharges to waters of the United States.
- (ii) Not defined as “large” or “medium” municipal separate storm sewer systems
- (iii) This term includes systems similar to separate storm sewer systems in municipalities, such as systems at military bases, large hospital or prison complexes, and highways and other thoroughfares. The term does not include separate storm sewers in very discrete areas, such as individual buildings. (40 CFR §122.26(b)(16))

Source Control BMPs – In general, activities or programs to educate the public or provide low cost non-physical solutions, as well as facility design or practices aimed to limit the contact between Pollutant sources and storm water or authorized Non-Storm Water. Examples include: activity schedules, prohibitions of practices, street sweeping, facility maintenance, detection and elimination of IC/IDs, and other non-structural measures. Facility design (structural) examples include providing attached lids to trash containers, canopies for fueling islands, secondary containment, or roof or awning over material and trash storage areas to prevent direct contact between water and Pollutants.

State Board – California State Water Resources Control Board

Storm Water – Per 40 CFR 122.26(b)(13), means storm water runoff, snowmelt runoff and surface runoff and drainage. “Storm water” is defined as urban runoff and snowmelt runoff consisting only of those discharges which originate from precipitation events. Storm water is that portion of precipitation that flows across a surface to the storm drain system or receiving waters. Examples of this phenomenon include: the water that flows off a building’s roof when it rains (runoff from an impervious surface); the water that flows into streams when snow on the ground begins to melt (runoff from a semi-pervious surface); and the water that flows from a vegetated surface when rainfall is in excess of the rate at which it can infiltrate into the underlying soil (runoff from a pervious surface). When all factors are equal, runoff increases as the perviousness of a surface decreases. During precipitation events in urban areas, rain

⁹⁸ State Water Resources Control Board (SWRCB) Water Quality Order No. 2003-005-DWQ, Waste Discharge Requirements for Stormwater Discharges from Small Municipal Separate Storm Sewer Systems (General Permit)

water picks up and transports pollutants through storm water conveyance systems, and ultimately to waters of the United States.

Storm Water General Permits – General Permit-Industrial (State Board Order No. 97-03 DWQ, NPDES No. CAS000001), General Permit-Construction (State Board Order No. 99-08 DWQ, NPDES No. CAS000002), and General Permit-Small Linear Underground Projects (State Board Order No. 2003-0007-DWQ, NPDES No. CAS000005).

Structural BMPs – Physical facilities or controls that may include secondary containment, treatment measures, (e.g. first flush diversion, detention/retention basins, and oil/grease separators), run-off controls (e.g., grass swales, infiltration trenches/basins, etc.), and engineering and design modification of existing structures.

SWPPP [Storm Water Pollution Prevention Plan] – Plan to minimize and manage Pollutants to minimize Pollution from entering the MS4, identifying all potential sources of Pollution and describing planned practices to reduce Pollutants from discharging off the site.

TDS – Total dissolved solids.

Time to concentration - the time that it takes for rainwater to travel from the most hydraulically remote point of the watershed to the outlet.

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

Toxicity – Adverse responses of organisms to chemicals or physical agents ranging from mortality to physiological responses such as impaired reproduction or growth anomalies. The water quality objectives for toxicity provided in the Water Quality Control Plan, Santa Ana River Basin, Region 8, (Basin Plan), state in part...“All waters shall be free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in human, plant, animal, or aquatic life....The survival of aquatic life in surface waters subjected to a waste discharge or other controllable water quality factors, shall not be less than that for the same water body in areas unaffected by the waste discharge”.

Treatment Control BMPs – Any engineered system designed and constructed to remove pollutants from urban runoff. Pollutant removal is achieved by simple gravity settling of particulate pollutants, filtration, biological uptake, media adsorption or any other physical, biological, or chemical process.

TSS – Total suspended solids.

Urban Runoff – Urban runoff is defined as all flows in a storm water conveyance system and consists of the following components: (1) storm water (wet weather flows) and (2) authorized non-storm water discharges (See Section V of the Order) (dry weather flows).

USEPA – United States Environmental Protection Agency

Waste – As defined in California Water Code Section 13050(d), “waste includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or

processing operation, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.”

Article 2 of CCR Title 23, Chapter 15 (Chapter 15) contains a waste classification system which applies to solid and semi-solid waste which cannot be discharged directly or indirectly to water of the state and which therefore must be discharged to land for treatment, storage, or disposal in accordance with Chapter 15. There are four classifications of waste (listed in order of highest to lowest threat to water quality): hazardous waste, designated waste, nonhazardous solid waste, and inert waste.

Waste Discharge Requirements – As defined in Section 13374 of the California Water Code, the term "Waste Discharge Requirements" is the equivalent of the term "permits" as used in the Federal Water Pollution Control Act, as amended. The Regional Board usually reserves reference to the term "permit" to Waste Discharge Requirements for discharges to surface Waters of the U.S.

Waste Load Allocations (WLA) – Maximum quantity pollutants a discharger of waste is allowed to release into a particular waterway, as set by a regulatory authority. Discharge limits usually are required for each specific water quality criterion being, or expected to be, violated. Distribution or assignment of TMDL Pollutant loads to entities or sources for existing and future point sources.

Water Quality Assessment – Assessment conducted to evaluate the condition of non-storm water and storm water discharges, and the water bodies which receive these discharges.

Water Quality Objective – Numerical or narrative limits on constituents or characteristics of water designated to protect designated beneficial uses of the water. [California Water Code Section 13050 (h)] California's water quality objectives are established by the State/Regional Water Boards in the Water Quality Control Plans.

As stated in the Porter-Cologne Requirements for discharge (CWC 13263): "(Waste discharge) requirements shall implement any relevant water quality control plans that have been adopted, and shall take into consideration the beneficial uses to be protected, the water objectives reasonably required for that purpose, other waste discharges, the need to prevent nuisance, and the provisions of Section 13241."

Numeric or narrative limits for pollutants or characteristics of water designed to protect the beneficial uses of the water. In other words, a water quality objective is the maximum concentration of a pollutant that can exist in a receiving water and still generally ensure that the beneficial uses of the receiving water remain protected (i.e., not impaired). Since water quality objectives are designed specifically to protect the beneficial uses, when the objectives are violated the beneficial uses are, by definition, no longer protected and become impaired. This is a fundamental concept under the Porter Cologne Act. Equally fundamental is Porter Cologne's definition of pollution. A condition of pollution exists when the water quality needed to support designated beneficial uses has become unreasonably affected or impaired; in other words, when the water quality objectives have been violated. These underlying definitions (regarding beneficial use protection) are the reason why all waste discharge requirements implementing the federal NPDES regulations require compliance with water quality objectives. (Water quality objectives are also called water quality criteria in the Clean Water Act.)

Water Quality Standards – are defined as the beneficial uses (e.g., swimming, fishing, municipal drinking water supply, etc.) of water and the water quality objectives necessary to protect those uses.

Waters of the United States – Waters of the United States can be broadly defined as navigable surface waters and all tributary surface waters to navigable surface waters. Groundwater is not considered to be a Waters of the United States.

As defined in 40 CFR 122.2, the Waters of the U.S. are defined as: (a) All waters, which are currently used, were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide; (b) All interstate waters, including interstate “wetlands;” (c) All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, “wetlands,” sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds the use, degradation or destruction of which would affect or could affect interstate or foreign commerce including any such waters: (1) Which are or could be used by interstate or foreign travelers for recreational or other purposes; (2) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or (3) Which are used or could be used for industrial purposes by industries in interstate commerce; (d) All impoundments of waters otherwise defined as waters of the United States under this definition: **(e) Tributaries of waters identified in paragraphs (a) through (d) of this definition;** (f) The territorial seas; and (g) “Wetlands” adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (a) through (f) of this definition. Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area’s status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with the EPA.

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

WDID [Waste Discharge Identification] – Identification number provided by the State when a Notice of Intent is filed.

WQMP – Water Quality Management Plan. A plan developed to mitigate the impacts of urban runoff from Priority Development Projects.

Wet Season – October 1 through May 31st of each year.

**Attachment 5: MONITORING AND REPORTING PROGRAM NO. R8-2008-0036
NPDES NO. CAS618036**

FOR

**THE SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT, THE COUNTY OF SAN
BERNARDINO, AND THE INCORPORATED CITIES OF SAN BERNARDINO COUNTY
WITHIN THE SANTA ANA REGION**

AREA-WIDE URBAN AND STORM WATER RUNOFF

**STATE OF CALIFORNIA
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
SANTA ANA REGION**

**RECEIVING WATERS AND URBAN RUNOFF MONITORING AND REPORTING
PROGRAM NO. R8-2009-0036
NPDES NO. CAS618036**

FOR

**THE SAN BERNARDINO COUNTY FLOOD CONTROL DISTRICT, THE COUNTY OF
SAN BERNARDINO, AND THE INCORPORATED CITIES OF SAN BERNARDINO
COUNTY WITHIN THE SANTA ANA REGION
AREA-WIDE URBAN STORM WATER RUNOFF MANAGEMENT PROGRAM**

I. GENERAL

- A. Revisions of the monitoring and reporting program are appropriate to ensure that the Permittees are in compliance with requirements and provisions contained in this Order. Revisions may be made under the direction of the Executive Officer at any time during the term of this Order, and may include redistribution of monitoring resources to address TMDL needs, a reduction or increase in the number of parameters to be monitored, the frequency of monitoring, or the number and size of samples collected.
- B. All sample collection, handling, storage, and analysis shall be in accordance with 40 CFR Part 136 (latest edition) "*Guidelines Establishing Test Procedures for the Analysis of Pollutants*," promulgated by the USEPA, the guidance being developed by the State Board pursuant to Water Code Section 133383.5, or other methods which are more sensitive than those specified in 40 CFR 136 and approved by the Executive Officer.
- C. The Principal Permittee has been monitoring urban runoff and receiving waters since the first MS4 permit term. It is recognized that some of the objectives noted in Section II, below, may not have been fully attained during the previous MS4 permit terms. With the first annual report due after adoption of this Order, the Principal Permittee must submit an evaluation of the progress achieved to date and propose modifications to the monitoring program to achieve full compliance with the objectives of this monitoring program, discussed in Section II, below.
- D. The Executive Officer is authorized to allow the Permittees to participate in statewide, national, or other monitoring programs in lieu of or in addition to this monitoring program. In addition, the Permittees are authorized to complement their urban runoff monitoring data with data from other monitoring sources, provided the monitoring conditions and sources are similar to those in the permitted area.

- E. This Monitoring and Reporting Program (MRP) references three components of the monitoring program:
- a. The existing storm water monitoring program shall continue to be implemented until the integrated watershed monitoring program is finalized and approved by the Executive Office;
 - b. An integrated watershed monitoring program is to be developed under this MRP to identify data gaps and to attain the objectives stated in Section II below; and
 - c. Other regional monitoring efforts where the Permittees participate or make monetary contributions, including TMDL-related monitoring.
- F. The Permittees must coordinate monitoring efforts with other entities discharging into the Middle Santa Ana River Watershed and the Big Bear Lake Watershed. The coordination must result in the development and implementation of a coordinated watershed monitoring plan, quality assurance plan, data management, validation, verification mechanism, and a consolidated report. This report may be integrated into the annual report.
- G. The Permittees should cooperate, as appropriate, with other MS4 Permittees (including those in Orange County and Riverside County), participate in the Southern California Coastal Water Research Project (SCCWRP), specifically in the bioassessment program, POTW operators, the dairy industry, the Santa Ana Watershed Project Authority (SAWPA), and other public and private organizations in the watershed to develop coordinated surface water quality monitoring programs, databases, and special studies.

II. OBJECTIVES

- A. Objectives: The overall goal of these monitoring programs is to provide data to support the development of an effective watershed and key environmental resources management program. The following are the major objectives:
1. To provide data to support the development of an effective municipal urban runoff pollutant source control program.
 2. To determine water quality status, trends, and pollutants of concern associated with urban runoff and their impact on the beneficial uses of the receiving waters. This includes determining current conditions in the receiving waters including the extent and magnitude of any adverse impacts, and relative urban runoff contribution to this problem.

3. To verify and identify the sources of pollutants in urban runoff to the maximum extent practicable (e.g., including, but not limited to atmospheric deposition, contaminated sediments, other non-point sources, etc.)
 4. To characterize pollutants associated with urban runoff and to assess the influence of urban land uses on receiving water quality and the beneficial uses of receiving waters.
 5. To identify and prioritize significant water quality problems in the receiving waters related to urban runoff within the permitted area, including any impacts on the designated beneficial uses.
 6. To evaluate the effectiveness of existing urban runoff water quality management programs, including an estimate of pollutant reductions achieved by the treatment and source control BMPs implemented by the Permittees.
 7. To detect illegal discharges and illicit connections to the MS4s so they can be responded to or eliminated.
 8. To identify those waters, which without additional action to control pollution from urban storm water discharges, cannot reasonably be expected to attain or maintain applicable water quality objectives in the Basin Plan.
 9. To identify and prioritize the most significant water quality problems resulting from urban storm water runoff. Order No. R8-2009-0036 establishes new program priorities through the development and implementation of a risk-based, outcome-oriented, compliance-focused program. Monitoring and sampling data shall be used to identify and prioritize the most significant water quality problems in receiving waters.
 10. To evaluate costs and benefits of proposed municipal storm water quality control programs to the stakeholders, including the public.
- B. The Regional Board recognizes that program modifications are necessary to attain these objectives. The Executive Officer is hereby authorized to evaluate and to determine adequate progress toward meeting each objective and to make any modifications to the monitoring and reporting program.

III. MONITORING PROGRAM

- A. Within 12 months of adoption of this Order, the Principal Permittee, in coordination with the Co-permittees shall review, revise as needed, and submit an Integrated Watershed Monitoring Plan (IWMP) for review and approval by the

San Bernardino County Area-wide Urban Storm Water Runoff Management Program

Executive Officer. At a minimum, the IWMP shall include the essential elements specified in Section E., below. The IWMP shall identify all the monitoring programs, along with implementation and reporting schedules that are conducted or participated in to fulfill the monitoring objectives of this Order. The approved IWMP shall be implemented within six months of approval by the Executive Officer. In the interim, the Permittees shall continue to implement the monitoring program approved under the third term permit and any additional monitoring required under this Order.

- B. Data collection, field and laboratory protocol, measurements, and analysis shall be in compliance with California's Surface Water Ambient Monitoring Program (SWAMP) Quality Assurance Management Plan and with SWAMP's Procedures for Conducting Routine Field Measurement.
- C. Where procedures are not otherwise specified in this MRP, sampling, analysis and quality assurance/quality control must be conducted in accordance with the Quality Assurance Management Plan (QAMP) for SWAMP, adopted by the State Water Resources Control Board (SWRCB).
- D. In addition, strategies must be revised/developed to evaluate the impacts of storm water and non-storm water runoff on 303(d) listed waterbodies within the permitted area.

E. INTEGRATED WATERSHED MONITORING PROGRAM:

In addition to the current monitoring locations and constituents, the IWMP shall include the following components:

1. Mass Emissions Monitoring.

- a. Representative outfall locations shall be identified and monitored to achieve the following objectives:
 - i. To estimate the total mass emissions of pollutants of concern from the MS4 to receiving waters.
 - ii. To assess trends in mass emissions associated with urban storm water runoff from the MS4s over time to correlate land use and population changes.
 - iii. To determine if the MS4 is contributing to exceedances of water quality standards, by comparing results to: (1) Basin Plan Water quality Objectives (WQOs); and (2) EPA storm water benchmarks contained in the EPA Multi-Sector Industrial Storm Water Permit; and (4) other MS4 discharger's monitoring data.
- b. At least two samples shall be collected during dry weather conditions and one sample from the first storm event of the rainy season (October 1 to

May 31) and two more samples during subsequent storm events. The mass emissions monitoring locations shall be monitored for:

- i. The flow in cubic feet per second (cfs) (the flow may be estimated);
- ii. The samples from the first storm event and one of the dry weather samples shall be analyzed for the entire suite of priority pollutants. All samples must be analyzed for E. coli, nutrients (nitrates and nitrites, potassium, and phosphorous), metals, pH, TSS, TOC, organophosphorus pesticides/herbicides, and any other constituents that are known to have contributed to impairment of local receiving waters. Dry weather samples shall be also analyzed for total petroleum hydrocarbons (8015M - direct injection) and oil and grease.
- iii. A mass loading model shall be used to calculate the mass loadings and to the extent practicable the data shall be integrated into the San Bernardino County GIS database system.

2. Illegal Discharge/Illicit Connection Monitoring:

The Permittees shall review and update their dry and wet weather reconnaissance strategies to identify and eliminate illegal discharges and illicit connections using the Guidance Manual for Illicit Discharge, Detection, and Elimination developed by the Center for Watershed Protection¹ or any other equivalent program. The Permittees should identify appropriate monitoring locations, such as geographic areas with a high density of industries associated with gross pollution (e.g. electroplating industries, auto dismantlers) and/or locations subject to maximum sediment loss (e.g. hillside new developments). To the extent practicable these locations should be identified on the GIS system.

The dry weather monitoring for nitrogen and total dissolved solids shall be included as part of the illegal discharge/illicit connection monitoring program.

3. Bioassessment and Water Column (Aquatic) Toxicity Monitoring :

The Principal Permittee, on behalf of the co-Permittees, participates (through a memorandum of understanding and cooperative agreements) with the 16 member agencies of the Storm Water Monitoring Coalition (SMC) Bioassessment Working Group to conduct bioassessments on a regional basis. The Principal Permittee in coordination with SCCWRP shall ensure that a sufficient number of monitoring stations are selected for this program from locations within the permitted area.

¹ USEPA (Illicit Discharge Detection and Elimination - A Guidance Manual for Program Development and Technical Assessments) by the Center for Watershed Protection and Robert Pitt, University of Alabama, October 2004, updated 2005).

San Bernardino County Area-wide Urban Storm Water Runoff Management Program

- a. The Principal Permittee, in collaboration with the SMC, shall conduct sampling, analysis, and reporting of specified instream biological and habitat data within the 5-year permit cycle according to the protocols specified in the SCCWRP Tech Report No. 539.
- b. Within the San Bernardino County permitted area (considered as 1.5 watershed unit), the Principal Permittee, shall collect at least 9 samples/year.
- c. For long-term trend monitoring, the Principal Permittee shall collect a minimum of one sample per year during the dry weather index period from Station ID WW-S1, Santa Ana River Reach 3 at the MWD crossing. Additional samples may be collected to improve data quality for trend analysis. At a minimum, water chemistry and aquatic toxicity should be used as indicators for trend analysis.
- d. Any baseline and historic information on stream geomorphology and ecological health, including aquatic habitats, in the receiving waters and the findings from the trend analysis shall be used to evaluate the effectiveness of urban storm water management program, including the requirements specified in the Order.
- e. The Technical Report specifies six indicators as assessment tools, including aquatic toxicity using *Ceriodaphnia dubia*, water flea. The aquatic toxicity studies shall be conducted using USEPA approved methods². If conductivity is too high for survival of control organisms, then *Hyalella spp*, freshwater amphipod, may be used as a test species.
- f. Additional information on these monitoring efforts is summarized in Section I, below, under Regional Watershed Monitoring.

F. TMDL/WLA MONITORING:

The Permittees shall continue to participate in TMDL monitoring programs to determine compliance with the waste load allocations (WLAs). The compliance schedules for the two approved TMDLs within the permitted area are beyond the five year permit term. This Order requires Permittees to conduct monitoring to determine the effectiveness of the BMPs implemented in reducing pollutant loads and eventually to attain WLA by the deadlines specified in the TMDL implementation plans.

² Environmental Protection Agency (EPA). Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA US Environmental Protection Agency, Environmental Research Laboratory. Duluth, MN.

1. *Middle Santa Ana River Bacteria TMDLs*

a. Watershed-wide Bacterial Indicator TMDL Water Quality Monitoring Program

The Permittees shall conduct monitoring and reporting as required under the Watershed-wide Monitoring Program approved by the Regional Board on June 29, 2007 (Resolution No. R8-2007-0046).

b. Urban Source Evaluation Plan (USEP)

i. The MS4 Permittees within the MSAR watershed shall continue to conduct monitoring and source evaluations in accordance with the approved plans and report the findings in accordance with the schedules specified in the Urban Source Evaluation Plan, approved on June 29, 2007, Resolution No. R8-2007-0046, and revised on April 18, 2008, Resolution No. R8-2008-0044.

ii. By February 15, 2010, the Permittees shall revise the MSWMP to incorporate a plan and a schedule to achieve necessary triennial bacterial source reduction targets based on the schedule established in the TMDLs. The MS4 Permittees within the MSAR watershed shall track and annually report their progress towards compliance (pre-compliance evaluation monitoring) with the WLAs at the locations specified in the approved USEP or other appropriate urban source monitoring locations.

2. *Big Bear Lake Nutrient TMDL for Dry Hydrological Conditions*

a. The Regional Board approved the Big Bear Lake In-Lake Nutrient Monitoring Plan on July 18, 2008 (Resolution No. 2008-0070) and the Big Bear Lake Watershed-wide Nutrient Monitoring Plan on May 22, 2009 (Regional Board Resolution No. R8-2009-0043). These plans include tasks to provide data necessary to: (a) allow determination of sources of the nutrient of concern, phosphorus; (b) allow development of TMDLs under other hydrologic conditions; (c) evaluate compliance with numeric targets specified in the TMDL; and (d) facilitate review and update of the Big Bear Lake Nutrient TMDL.

For each year of in-lake nutrient and water quality monitoring under these approved plans, the results will be summarized in an annual report and submitted to the Executive Officer. The Big Bear Lake Nutrient TMDL annual report is due to the Executive Officer by February 15th of each year.

b. Pre-compliance period Waste Load allocation Monitoring

- i. Compliance with the phosphorus WLA will be evaluated through the use of a watershed model. The Permittees in the Big Bear Lake watershed or the Big Bear Lake Nutrient TMDL Taskforce, shall provide the results of the first model update by February 15, 2011, and every three years thereafter.
- ii. An iterative approach is appropriate to demonstrate compliance with the phosphorus WLA in drainage areas tributary to Big Bear Lake.
- iii. By February 15, 2011, the Permittees shall revise the MSWMP to incorporate a plan and a schedule to achieve necessary triennial bacterial source reduction for meeting the phosphorus WLAs based on the schedule established in the TMDLs. The MS4 Permittees within the Big Bear Lake watershed shall track and annually report their progress towards compliance (pre-compliance evaluation monitoring) with the WLAs at representative urban source monitoring locations.

G. HYDROMODIFICATION MONITORING PROGRAM

This Order requires development and implementation of a hydromodification monitoring plan as part of the Watershed Action Plan to evaluate the effectiveness of hydromodification controls implemented within the permitted area (Some or all of the following requirements may be satisfied by the Permittees participation in the "Development of Tools for Hydromodification Assessment and Management" Project" undertaken by the SMC and coordinated by SCCWRP).

1. The Order requires the Permittees to develop a Watershed Action Plan within 18 months of adoption of the Order. The Watershed Action Plan should identify vulnerable streams and possible control measures to minimize hydrologic changes and tools to measure any impacts on geomorphology and aquatic resources.
2. The hydromodification monitoring program should include:
 - i. Protocols for ongoing monitoring to assess the effectiveness of hydromodification management within the permitted area.
 - ii. Models to predict the effects of urbanization on stream stability within the permitted area.

H. LOW IMPACT DEVELOPMENT BMP MONITORING

The Principal Permittee shall continue to participate in data collection and monitoring to assess the effectiveness of low impact development techniques in semi-arid climate as part of the SMC project titled, "Quantifying the Effectiveness of Site Design/ Low Impact Development Best Management Practices in Southern California".

I. REGIONAL WATERSHED MONITORING

The objectives of the Regional Watershed Monitoring Program overseen by the State Board's Storm Water Ambient Monitoring Program (SWAMP) and the Storm Water Monitoring Coalition (SMC) and coordinated by the Southern California Coastal Water Research Project (SCCWRP) are:

- a. To assess the current status of streams in Southern California.
- b. To identify major stressors to aquatic life.
- c. To monitor the trend in water quality in Southern California streams.

The bioassessment discussed in Section E.3, above, should provide information about the biological integrity of receiving waters. Baseline and trend monitoring information on the biotic and geomorphological condition of the receiving waters should be used to evaluate the effectiveness of the storm water pollution control measures. The sampling grid includes 15 watershed units located from Ventura to San Diego and as far east as San Bernardino and Riverside Counties. The San Bernardino County Regional Watershed monitoring area is within the Upper Santa Ana River Watershed.

The sampling sites in each watershed unit were determined according to distribution or abundance of the three land uses: urban, agriculture, or open. A total of 450 samples in the 15 watershed units will be collected within a five year period to assess the spatial extent of impacts to streams within the area. Samples will be collected at sites representing each of the three land use types. Each site will be sampled only once during an index period and not all sites need to be sampled during the same year. One-fifth of the samples (90 samples) will be collected each year for the 15 watersheds. Sampling events shall be conducted between 4 to 12 weeks following the last significant rainfall. No sampling shall occur within 72 hours of any measurable rainfall. The default index period will be from May 15 to July 15. The specifics and details of the Regional Watershed Program are discussed in "The Regional Monitoring of Southern California's Watershed SMC Bioassessment Working Group", SCCWRP, Technical Report No. 539, December 2007 (The Tech Report).

The Tech Report identifies six indicators assess the ecological health of the stream channels. All of these indicators will be measured in a manner consistent with the SWAMP program to ensure integration with statewide data sets. These indicators and the prescribed methods of analysis and evaluation are:

1. Water chemistry^{3,4}: Analyze conventional water quality, nutrients, trace metals, and pyrethroid pesticides;
2. Aquatic toxicity: Measure chronic toxicity using *Ceriodaphnia dubia* or *Hyalella spp*⁵;
3. Physical habitat to describe stream condition: Determine flow, channel morphology, riparian cover, substrate, and alterations from anthropogenic activities;
4. Benthic macroinvertebrates⁶: Use SWAMP protocol (ODE 2007);
5. Wetlands and riparian status: Measure using California Rapid Assessment Method (CRAM)⁷; and
6. Periphyton, or attached algae⁸: Identify sensitivity to water chemistry alteration and taxonomic variations.

IV. RECORD KEEPING REQUIREMENTS

A. All monitoring activities shall meet the following requirements :

1. Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity [40 CFR 122.41(j)(1)].
2. The Permittees shall retain records of all monitoring information, including all calibration and maintenance of monitoring instrumentation, copies of all reports prepared as per this MRP and records of all data used to complete the Report of Waste Discharge and annual reports for a period of at least five years from the date of the sample, measurement, report, or application. This period may be extended by request of the Regional Board or USEPA at any

³ Puckett, M. 2002. Quality Assurance Management Plan for the State of California's Surface Water Ambient Monitoring Program: Version 2. California Department of Fish and Game, Monterey, CA. Prepared for the State Water Resources Control Board. Sacramento, CA.

^{4,7} Ode, P. 2007. SWAMP Bioassessment Procedures: Standard operating procedures for collecting benthic macroinvertebrate samples and associated physical and chemical data for ambient bioassessment in California..

⁵ Environmental Protection Agency (EPA). Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, US Environmental Protection Agency, Environmental Research Laboratory. Duluth, MN. Areas. Version 5.0. Available from <http://www.cramwetlands.org>.445

⁷ Collins, J.N., E.D. Stein, M. Sutula, R. Clark, A.E. Fetscher, L. Grenier, C. Grosso and A. Wiskind. 2007. California Rapid Assessment Method (CRAM) for Wetlands and Riparian Areas. Version 5.0. Available from <http://www.cramwetlands.org>.

⁸ SCCWRP, May 2008, Technical Report #563. Incorporating Bioassessment using Freshwater Algae in California's Storm Water Ambient Monitoring Program (SWAMP).

time and shall be extended during the course of any unresolved litigation regarding this discharge [40 CFR 122.41(j)(2), CWC section 13383(a)].

3. Records of monitoring information shall include [40 CFR 122.41(j)(3)]:
 - a. The date, exact place, and time of sampling or measurements;
 - b. The individual(s) who performed the sampling or measurements;
 - c. The date(s) analyses were performed;
 - d. The individual(s) who performed the analyses;
 - e. The analytical techniques or methods used; and
 - f. The results of such analyses.
4. The CWA provides that any person who falsifies, tampers with, or knowingly renders inaccurate any monitoring device or method required to be maintained under this Order shall, upon conviction, be punished by a fine of not more than \$10,000, or by imprisonment for not more than two years, or both. If a conviction of a person is for a violation committed after a first conviction of such person under this paragraph, punishment is a fine of not more than \$20,000 per day of violation, or by imprisonment of not more than four years, or both [40 CFR 122.41(j)(5)].
5. Calculations for all effluent limitations which require averaging of measurements shall utilize an arithmetic mean unless otherwise specified in this MRP [40 CFR 122.41(l)(4)(iii)].
6. All chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by an appropriate governmental regulatory agency.
7. For priority toxic pollutants that are identified in the California Toxics Rule (CTR) (65 Fed. Reg. 31682), the Minimum Levels (MLs) published in Appendix 4 of the Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (SIP) shall be used for all analyses, unless otherwise specified.
8. For priority toxic pollutants, if the Permittee can demonstrate that a particular ML is not attainable, in accordance with procedures set forth in 40 CFR 136, the lowest quantifiable concentration of the lowest calibration standard analyzed by a specific analytical procedure (assuming that all the method specified sample weights, volumes, and processing steps have been followed) may be used instead of the ML listed in Appendix 4 of the SIP. The Principal Permittee must submit documentation from the laboratory to the Regional Water Board Executive Officer for approval prior to raising the ML for any constituent.

9. The Clean Water Act provides that any person who knowingly makes any false statement, representation, or certification in any record or other document submitted or required to be maintained under this permit, including monitoring reports or reports of compliance or non-compliance shall, upon conviction, be punished by a fine of not more than \$10,000 per violation, or by imprisonment for not more than six months per violation, or by both [40 CFR 122.41(k)(2)].

V. PROGRAM EFFECTIVENESS ASSESSMENT AND REPORTING

- A. All progress reports and proposed strategies and plans required by this order shall be signed by the Principal Permittee, and copies shall be submitted to the Executive Officer under penalty of perjury.
- B. The Permittees shall submit an annual progress report to the Executive Officer and to the Regional Administrator of the USEPA, Region 9, no later than November 15th, of each year. This progress report may be submitted in a mutually agreeable electronic format. At a minimum, annual progress report shall include the following:
 1. A review of the status of program implementation and compliance (or non-compliance) with the schedules contained in this Order;
 2. An assessment of the effectiveness of control measures established under the illicit discharge elimination program and the municipal storm water management plan. The effectiveness may be measured in terms of how successful the program has been in eliminating illicit/illegal discharges and reducing pollutant loads in storm water discharges;
 3. As assessment of control measures and their effectiveness in addressing pollutants causing or contributing to an exceedance of water quality objectives in receiving waters that are on the 303(d) list of impaired waters. The effectiveness evaluation shall consider changes in land use and population on the quality of receiving waters and the impact of development on sediment loading within receiving waters and recommend necessary changes to program implementation and monitoring needs.
 4. The annual report shall include an overall program assessment. The Permittees are encouraged to use the program assessment methodology described in the 2006 ROWD. The Permittees should determine, to the extent practicable, water quality improvements and pollutant load reductions resulting from implementation of various program elements. The Permittees may also use the "Municipal Storm Water Program Effectiveness Assessment Guidance" developed by the California Storm Water Quality Association in May 2007 as

guidance for assessing program effectiveness at various outcome levels. The assessment should include each program element required under this Order, the expected outcome and the measures used to assess the outcome. The Permittees may propose any other methodology for program assessment using measurable targeted outcomes.

5. Each Permittee shall develop, update, implement and review its local implementation plan (LIP) to address program modifications and improvements identified during the program assessment.
 6. A summary and analysis of monitoring results from the previous year and any changes to the monitoring program for the following year;
 7. A financial summary report as described in Section XIX.B of this order; including:
 - a. Each Permittee's expenditures for the previous fiscal year;
 - b. Each Permittee's budget for the current fiscal year;
 - c. A description of the source of funds.
 8. A draft workplan which describes the proposed implementation of the LIPs, and MSWMPs for next fiscal year. The workplan shall include clearly defined tasks, responsibilities, and schedules for implementation of the storm water program and each Permittee's action plans for the next fiscal year;
 9. Major changes to any of the previously submitted plans/policies; and
 10. An assessment of the Permittees compliance status with the Receiving Water Limitations, Section VI of the Order, including any proposed modifications to the MSWMP and WQMP if the Receiving Water Limitations are not fully achieved.
- C. The Permittees shall be responsible for the timely submittal to the Principal Permittee of all required information/materials needed to comply with this Order. All such submittals shall be signed by a duly authorized representative of the Permittee under penalty of perjury.
- D. The data transmittals to the Regional Board shall be in the form developed by the Storm Water Monitoring Coalition (SMC) and approved by the State Water Resources Control Board in the document entitled "Standardized Data Exchange Formats". This document was developed in order to provide a standard format for all data transfer so that data can be universally shared and evaluated from various programs.

VI. REPORTING SCHEDULE

All reports required by this Order shall be submitted to the Executive Officer in accordance with the following schedule:

Reporting Schedule (Order R8-2009-0036)			
Permit No.	ITEM	COMPLETION TIME AFTER PERMIT ADOPTION OR /FREQ.	REPORT DUE DATE
III.A.1.n	Principal Permittee shall coordinate a review of areawide documents to determine the need for update or revisions	within 6 months of adoption of this Order	
III.A.2.a	Principal Permittee shall develop and implement a Local Implementation Plan (LIP) each program element is described per the MSWMP;	within 12 months of adoption of this Order	
III.B.1	Permittees to develop and implement an LIP for its jurisdiction. The LIP shall describe the Permittee's legal authority, its ordinances, policies and standard operating procedures; identify departments and personnel for each task and needed tools and resources.	within 12 months of adoption of this Order	
III.B.2.e	Each Permittee shall review its MS4 facility maps		Annually
III.C	evaluate the storm water management structure and the Implementation Agreement and determine the need for any revision	as needed	Annually
V.D.1.d.ii	Revise the MSWMP to incorporate a plan and a schedule to achieve necessary triennial bacterial source reduction for meeting the bacterial indicator WLAs based on the schedule established in the TMDLs.	Feb 15, 2010	
V.D.1.d.iii	Track and report progress towards compliance (pre-compliance evaluation monitoring) with the WLAs at the locations specified in the MSAR Bacterial Indicator TMDL or other appropriate urban source monitoring locations	Annually	Annually
V.D.1.d.iv.c	Report any revisions to the MSWMP, LIP or WQMP in response to TMDL requirements.	Nov 15, 2010	every triennial review
V.D.2.f	Update the results of the Big Bear Lake Model to evaluate compliance with the BBL phosphorus WLA	Feb. 15, 2011	every 3 years thereafter
V.D.2.g.ii	Submit report to EO of proposed actions if watershed monitoring shows exceedances of phosphorus WLA	as needed	Annual Report

San Bernardino County Area-wide Urban Storm Water Runoff Management Program

Reporting Schedule (Order R8-2009-0036) Continued			
Permit No.	ITEM	COMPLETION TIME AFTER PERMIT ADOPTION OR /FREQ.	REPORT DUE DATE
V.D.2.i	Revise Stormwater Management Program, as needed, to incorporate the findings from TMDL implementation activities.	Annually	Annual Report
V.D.2.i	Track and report progress towards compliance (pre-compliance evaluation monitoring ⁹) with the waste load allocations at the WLA monitoring locations.	Annually	Nov. 15
V.D.3.b	City of BBL shall review results of the pathogen investigation and observations and submit a final report to the Regional Board summarizing all data, information and efficacy of the BMPs in reducing bacteria in Knickerbocker Creek	completion of Phase 2 monitoring study	
VII.D	Promulgate ordinances that would specify control measures for known pathogen or bacterial sources such as animal wastes if those types of sources are present within their jurisdiction.	within three years of Order adoption	
VII.G	Review water quality ordinances and evaluate effectiveness	Annually	Annual Report
VII.J	Submit a certification statement in its annual Report, signed by legal counsel, that the Permittee has obtained all necessary legal authority	within one year of Order adoption	
VII.K	Review adequacy of ordinances, implementation and enforcement response procedures with respect to the above items.	Annually	Annual Report
IX.F	Permittees with septic systems in their jurisdiction shall develop an inventory of septic systems within its jurisdiction and establish a program to ensure that failure rates are minimized	within two years of Order adoption	
X.A.2	Update database and inventory system containing inspections, facilities	at least once/year	Annually
X.A.3	develop risk-based, compliance focused strategy for inspection of construction, industrial, and municipal facilities	within 18 months of Order adoption	
X.A.11	Document, evaluate and report the effectiveness of enforcement procedures in achieving prompt and timely compliance.	annually	Annual Report

⁹ Pre-compliance evaluation monitoring is monitoring conducted prior to the compliance date to evaluate effectiveness of pollution reduction efforts.

San Bernardino County Area-wide Urban Storm Water Runoff Management Program

Reporting Schedule (Order R8-2009-0036) Continued			
Permit No.	ITEM	COMPLETION TIME AFTER PERMIT ADOPTION OR /FREQ.	REPORT DUE DATE
X.D.6	Principal Permittee shall notify all mobile businesses operating within the County concerning the minimum source control and pollution prevention measures	Within 12 months of adoption of this Order	
X.D.8	Principal Permittee shall develop an enforcement strategy to address mobile businesses	Within 12 months of adoption of this Order	
X.E	Each Permittee shall develop and implement a residential program to reduce the discharge of pollutants from residential facilities to the MS4s to the maximum extent practicable	Within 18 months of adoption of this Order	
XI.B.2	The Principal Permittee shall facilitate the formation of a technical advisory committee (TAC) consisting of the Community Development/Planning Department directors and City/County Engineers of the Permittees to develop the Watershed Action Plan.	Within 12 months of adoption of this Order	
XI.B.3	the Principal Permittee shall develop a Watershed Action Plan	Within 18 months of adoption of this Order	
XI.B.4	review the watershed protection principles and policies in the General Plan or related documents (such as Development Standards, Zoning Codes, Conditions of Approval, Development Project Guidance) to determine consistency with the Watershed Action Plan.	Within 3 years of Order adoption	Annual Report
XI.B.4	report the above findings and schedule of revisions	Annually	Annual Report
XI.C.1	review the watershed protection principles and policies, specifically addressing urban storm water runoff, in its planning procedures, including CEQA preparation, review and approval processes.	Within 12 months of adoption of this Order	
XI.C.4	each Permittee shall incorporate the results of the above information into its LIP and its project approval process.	Within 12 months of adoption of this Order	
XI.D.2	Principal Permittee shall coordinate the revision of the WQMP Guidance and Template to include new elements required under this Order.	Within 12 months of adoption of this Order	
XI.D.6	the Principal Permittee shall develop recommendations for streamlining regulatory agency approval of regional treatment control BMPs.	Within 24 months of adoption of this Order	

San Bernardino County Area-wide Urban Storm Water Runoff Management Program

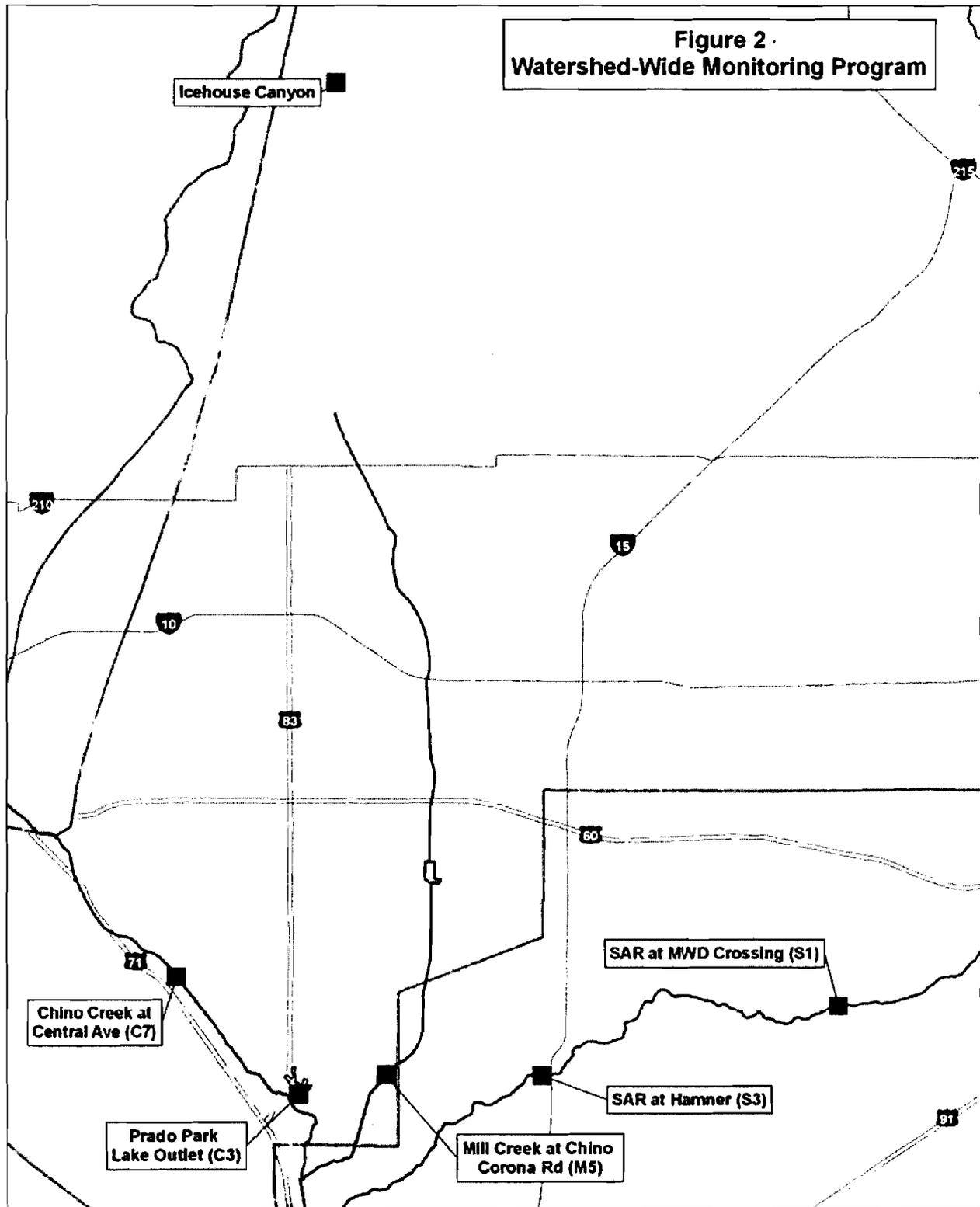
Reporting Schedule (Order R8-2009-0036) Continued			
Permit No.	ITEM	COMPLETION TIME AFTER PERMIT ADOPTION OR /FREQ.	REPORT DUE DATE
XI.E.2	each Permittee shall identify barriers to implementing LID	Within 12 months of adoption of this Order	
XI.E.3	adopt the State Model Water Efficient Landscape Ordinance or prepare one that is "at least as effective" as the State Model	January 2010.	
XI.E.6	review and update the Water Quality Management Plan Guidance and Template to incorporate LID principles	Within 12 months of adoption of this Order	
XI.E.6.a.vi.	Principal Permittee shall establish a technically-based feasibility criteria for project evaluation to determine the feasibility of implementing LID.	Within 12 months of adoption of this Order	
XI.E.7	a copy of the updated Water Quality Management Plan Guidance and Template shall be submitted for review and approval by the Executive Officer.	Within 12 months of adoption of this Order	
XI.F.1	Permittees may grant waiver of BMPs with justification documents to the EO	Within 30 days prior to Permittee approval	
XI.G	to develop and implement standard procedures and tools, such as WQMP checklist, project close-put procedures, and include in the LIP.	Within 12 months of adoption of this Order	
XI.H	Conduct follow-up inspection of the post-construction BMPs	Prior to the rainy season within 3 years	Every 3 years thereafter.
XI.J	the Permittees shall develop a database to track operation and maintenance of post-construction BMPs.	Within 12 months of adoption of this Order	
XII.E	the Permittees shall develop and maintain BMP guidance for the control of those potentially polluting activities including guidelines for the household use of fertilizers, pesticides, herbicides and other chemicals, and guidance for mobile vehicle maintenance, carpet cleaners, commercial landscape maintenance, and pavement cutting.	Within 12 months of adoption of this Order	
XIII.E	the Principal Permittee shall submit a proposal for additional retrofit studies that incorporates opportunities for addressing any applicable TMDL implementation plans, hydromodification management and/or LID implementation within the permitted area.	Within 12 months of adoption of this Order	

Reporting Schedule (Order R8-2009-0036) Continued			
Permit No.	ITEM	COMPLETION TIME AFTER PERMIT ADOPTION OR /FREQ.	REPORT DUE DATE
XV.A	revise LIPs to include the Permittee's information on its de minimus discharges	Within 12 months of adoption of this Order	
XVI.A	develop a training program including a training schedule, curriculum content, and defined expertise and competencies for storm water managers, inspectors, maintenance crew, municipal contractors, those involved in the review and approval of WQMPs, and those preparing and/or reviewing CEQA documentation	Within 12 months of adoption of this Order	Nov 15
XVI.D	provide and document training to applicable public agency staff on the updated Municipal Activities and Pollution Prevention Strategy (MAPPPS). and any other applicable guidance and procedures	Annually	Annual Report
XVIII.B	Permittees shall evaluate the MSWMP to determine the need for any revisions in Order to reduce pollutants in MS4 discharges to the maximum extent practicable.	Annual Report	October 1
XIX.B	prepare and submit a financial summary to the Executive Officer of the Regional Board	Annually	Annual Report
MRP III. A	review, revise as needed, and submit the Integrated Watershed Monitoring Plan (IWMP) for review and approval by the Executive Officer.	Within 12 months of adoption of this Order	
MRP III.F	Submit plan to determine dry weather N/TDS baseline concentration within Permittees' jurisdiction	Within 18 months of Order adoption	
MRP III. G.2.b.iii	revise the MSWMP to incorporate a plan and a schedule to achieve necessary triennial bacterial source reduction for meeting the phosphorus indicator WLAs	February 15, 2011	Annual Report

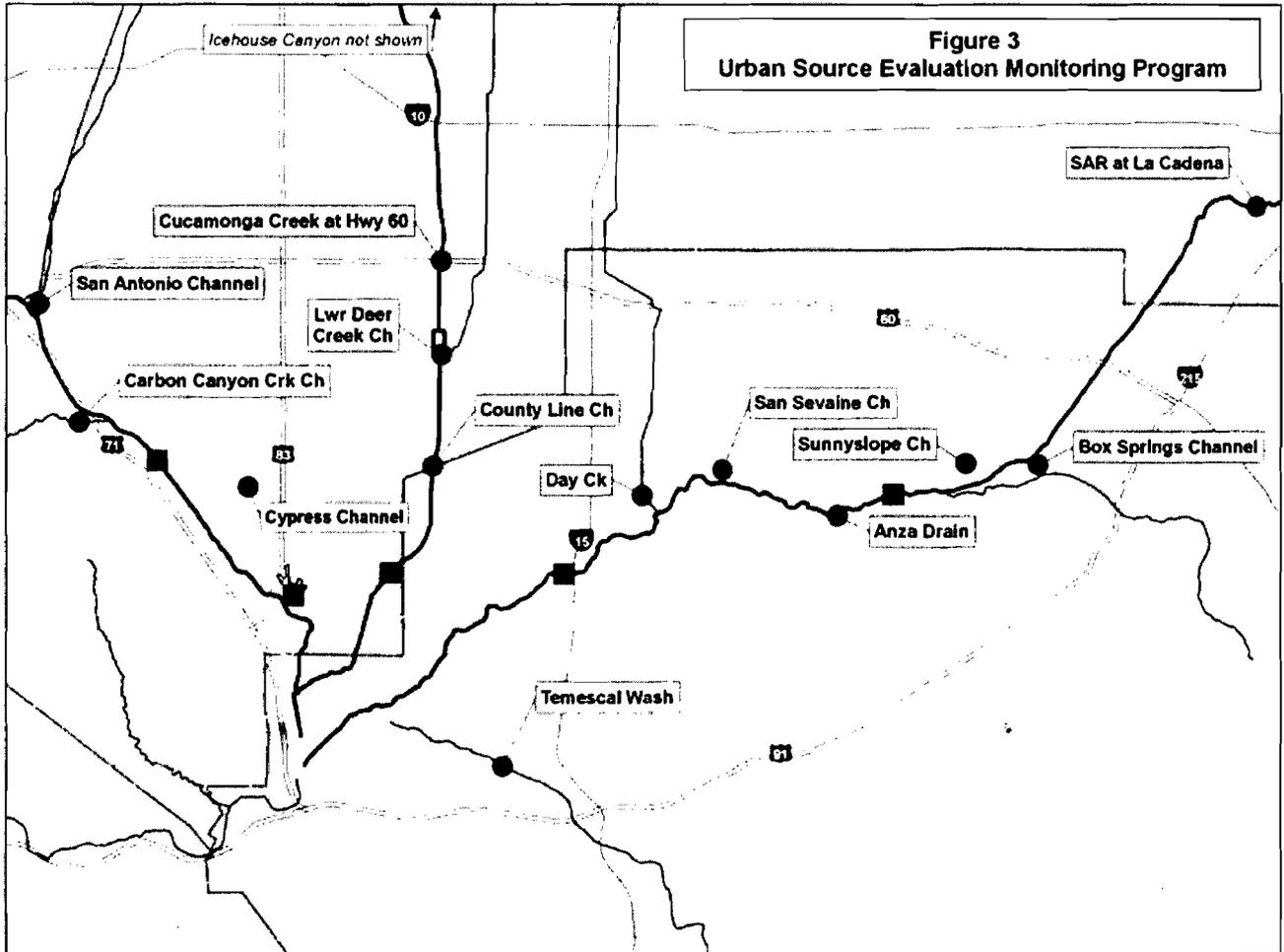
Date: _____

Ordered by _____

Gerard J. Thibeault
Executive Officer



San Bernardino County Area-wide Urban Storm Water Runoff Management Program



Attachment 6: Fact Sheet

State of California
California Regional Water Quality Control Board
Santa Ana Region
3737 Main Street, Suite 500
Riverside, CA 92501- 3348

FACT SHEET

July 10, 2009

ITEM: 12

SUBJECT: Waste Discharge Requirements for the San Bernardino County Flood Control District (SBCFCD), the County of San Bernardino, and the Incorporated Cities of San Bernardino County within the Santa Ana Region, Area-wide Urban Storm Water Runoff Management Program, San Bernardino County, Order No. R8-2009-0036 (NPDES No. CAS618036)

I. INTRODUCTION

The 1972 Clean Water Act (CWA) established the National Pollutant Discharge Elimination System (NPDES) permit program to regulate the discharge of pollutants from point sources to waters of the United States (U.S.). Since then, considerable strides have been made in reducing conventional forms of pollution, such as from sewage treatment plants and industrial facilities, through the implementation of the NPDES program and other federal, state and local programs. The adverse effects from some of the persistent toxic pollutants (DDT, PCB, TBT) were addressed through manufacturing and use restrictions and through cleanup of contaminated sites. On the other hand, pollution from land runoff (including atmospheric deposition, urban, suburban and agricultural) was largely unregulated until the 1987 CWA amendments. As a result, diffuse sources, including urban storm water runoff, now contribute a larger portion of many kinds of pollutants than the more thoroughly regulated sewage treatment plants and industrial facilities. The 1987 CWA amendments established a framework for regulating urban storm water runoff. Pursuant to these amendments, the Santa Ana Regional Water Quality Control Board (Regional Board) started regulating municipal storm water runoff in 1990.

The attached pages contain information concerning an application for renewal of waste discharge requirements and an NPDES permit. Order No. R8-2009-0036, NPDES No. CAS618036, prescribes waste discharge requirements for urban storm water runoff¹

¹ Urban Storm Water Runoff includes authorized non-storm water as per Section V of the Order and storm water runoff, collectively referred to as urban runoff (also see glossary).

from the cities and the unincorporated areas in San Bernardino County within the jurisdiction of the Santa Ana Regional Board. As defined by 40 CFR 122.26(b)(13), storm water means storm water runoff, snowmelt runoff, surface runoff and drainage. "Storm water" is defined as urban runoff and snowmelt runoff consisting only of those discharges which originate from precipitation events. Storm water is that portion of precipitation that flows across a surface to the storm drain system or receiving waters. During precipitation events in urban areas, rain water picks up and transports pollutants through storm water conveyance systems, and ultimately to waters of the United States.

Urban runoff is defined as all flows in a storm water conveyance system and consists of the following components: (1) storm water (wet weather flows) and (2) non-storm water (authorized under Section V of the Order, dry weather flows).

On October 26, 2006, the San Bernardino County Flood Control District (SBCFCD, the Principal Permittee) and the County of San Bernardino, in cooperation with the cities of Big Bear Lake, Chino, Chino Hills, Colton, Fontana, Grand Terrace, Highland, Loma Linda, Montclair, Ontario, Rancho Cucamonga, Redlands, Rialto, San Bernardino, Upland, and Yucaipa (Co-Permittees, hereinafter collectively referred to as Permittees or Dischargers), submitted a Report of Waste Discharge (ROWD)) for renewal of their area-wide NPDES storm water permit. The permit renewal application was submitted in accordance with the requirements specified in the previous NPDES storm water permit (Order No. R8-2002-0012). The permit application also follows guidance provided by Regional Water Quality Control Board, Santa Ana Region (Regional Board) and State Water Resources Control Board (State Board) staff, and the United States Environmental Protection Agency (USEPA). Order No. R8-2002-0012 expired on April 27, 2007 and was administratively extended in accordance with 40 CFR Part 122.6 and Title 23, Division 3, Chapter 9, §2235.4 of the California Code of Regulations.

Order No. R8-2009-0036 regulates discharges of stormwater and urban runoff² from the upper Santa Ana watershed to waters of the U.S., which ultimately drain into the Pacific Ocean.

II. REGULATORY BACKGROUND/CLEAN WATER ACT REQUIREMENTS

Urban runoff includes dry and wet weather flows (collectively referred to as urban runoff) from urbanized areas discharged through storm water conveyance systems. As storm water flows over streets, parking lots, construction sites, and industrial, commercial, residential, and municipal areas, it can mobilize pollutants from these areas and transport them to waters of the U.S. If appropriate pollution control measures are not implemented, urban runoff may contain pathogens (bacteria, viruses, protozoa), sediment, trash, fertilizers (nutrients, mostly nitrogen and phosphorus compounds), oxygen-demanding substances (decaying and/or decomposable matter), pesticides (e.g., DDT, chlordane, diazinon, chlorpyrifos, etc.) heavy metals (cadmium, copper, chromium, lead, zinc, etc.), and petroleum products (oil & grease, PAHs³, petroleum

² For purposes of this Order, urban runoff includes storm water and authorized non-storm water discharges as per Section V of the Order.

³ PAHs (Polycyclic aromatic hydrocarbons) – a hydrocarbon containing two or more aromatic rings. PAHs are persistent, bioaccumulative, and toxic pollutant. PAHs occur in oil, coal, and tar deposits, and

hydrocarbons, etc.). If not properly managed and controlled, urbanization can change the stream hydrology and increase pollutant loading to receiving waters. As a watershed undergoes urbanization, pervious surface area decreases, runoff volume and velocities increase, riparian habitats and wetland habitats decrease, the frequency and severity of flooding increase, and pollutant loading increases. Most of these impacts are due to human activities that occur during and/or after urbanization. The pollutants and hydrologic changes can cause declines in aquatic resources, cause toxicity to marine organisms, and impact human health and the environment.

However, properly planned high-density development, with sufficient open space and low impact developments, can reduce urban sprawl and problems associated with sprawl. Urban in-fill and high-density development can be an element of smart growth, creating the opportunity to maintain relatively natural open space elsewhere in the area. The goal of low impact development is to mimic post-construction runoff quality and quantity to pre-construction runoff quality and quantity.

The USEPA recognizes urban storm water runoff as the number one source of estuarine pollution in coastal communities⁴. Studies conducted in the Southern California area⁵ and other studies have reported a definite link between storm water runoff from urban areas and pollution in nearshore zones. Pollutants in urban storm water in inland surface waters may be carried into the ocean. A number of Orange County beaches were closed during the summer of 1999 and 2000 due to microbial contamination. For the last few years, a number of other regions of the State have also reported beach closures⁶ due to pollution from urban storm water runoff. Up to forty-five percent of water samples violated state bacterial standards in 2006 among some of Orange County's most popular beaches⁷. During wet weather or storm conditions, discharges from the San Bernardino County areas may ultimately drain into the Pacific Ocean and can have an impact on Orange County beaches. The Permittees in San Bernardino County conducted urban runoff monitoring and determined that for a number of constituents (e.g., bacteria, copper, lead, nutrients), urban runoff quality exceeded the Basin Plan objectives, CTR criteria, and/or USEPA's storm water benchmark. The permit renewal application submitted by the Permittees (2006 ROWD) ranked bacterial contamination as the highest priority urban runoff problem⁸ within the permitted area.

If not properly controlled, urban runoff could be a significant source of pollutants in waters of the U.S. Table 1 includes a list of pollutants and their sources, and some of the adverse environmental consequences resulting from urbanization.

are produced as byproducts of fuel burning. Sources include industrial processes, transportation, energy production and disposal activities.

⁴ US EPA, 1999, 40CFR Parts 9, 122, 123, 124, National Pollutant Discharge Elimination System – Regulations for Revision of the Water Pollution Control Program Addressing Storm Water Discharges; Final Rule, 64FR 68727.

⁵ Bay, S., Jones, B. H. and Schiff, K. 1999, Study of the Impact of Storm water Discharge on Santa Monica Bay. Sea Grant Program, University of Southern California; and Haile, R.W., et. al., 1996, An Epidemiological Study of Possible Adverse Health Effects of Swimming in Santa Monica Bay.

⁶ Heal the Bay, 19th Annual Beach Report Card for 2008-2009 (<http://www.healthebay.org/brcv2/>).

⁷ August 8, 2007, The Orange County Register "Pollution on OC Beaches"

⁸ 2006 Report of Waste Discharge (ROWD)

Table 1⁹. Pollutants/Impacts of Urbanization on Waters of the U.S.

Pollutants	Sources	Effects and Trends
Toxins (e.g., biocides, PCBs, trace metals, heavy metals)	Industrial and municipal wastewaters; runoff from farms, forests, urban areas, and landfills; erosion of contaminated soils and sediments; vessels; atmospheric deposition	Poison and cause disease and reproductive failure; fat-soluble toxins may bioconcentrate, particularly in birds and mammals, and pose human health risks. Inputs into U.S. waters have declined, but remaining inputs and contaminated sediments in urban and industrial areas pose threats to living resources.
Pesticides (DDT, diazinon, chlorpyrifos)	Urban runoff; residential, commercial, industrial, and farm use; agricultural runoff	Legacy pesticides (DDT, chlordane, dieldrin) have been banned; still persists in the environment; some of the other pesticide uses have been curtailed or restricted.
Biostimulants (organic wastes, plant nutrients)	Sewage and industrial wastes; runoff from farms and urban areas; nitrogen from combustion of fossil fuels	Organic wastes overload bottom habitats and deplete oxygen; nutrient inputs stimulate algal blooms (some harmful), which reduce water clarity, cause loss of seagrass and coral reef, and alter food chains supporting fisheries. While organic waste loadings have decreased, nutrient loadings have increased (NRC, 1993a, 2000a).
Petroleum products (oil, grease, petroleum hydrocarbons, PAHs)	Runoff and atmospheric deposition from land activities; shipping and tanker operations; accidental spills; oil gas production activities; natural seepage; PAHs from internal combustion engines	Petroleum hydrocarbons can affect bottom organisms and larvae; spills affect birds, mammals and aquatic life. While oil pollution from ships, accidental spills, and production activities has decreased, diffuse inputs from land-based activities have not (NRC, 1985).
Radioactive isotopes	Atmospheric fallout, industrial and military activities	Bioaccumulation may pose human health risks where contamination is heavy.
Sediments	Erosion from farming, construction activities, forestry, mining, development; river diversions; dredging and mining	Reduce water clarity and change bottom habitats; carry toxins and nutrients; clog fish gills and interfere with respiration in aquatic fauna. Sediment delivery by many rivers has decreased, but sedimentation poses problems in some areas.

⁹ Adapted from Boesch, D.F., R.H. Burroughs, J.E. Baker, R.P. Mason, C.L. Rowe, and R.L. Siefert. 2001. Marine Pollution in the United States: Significant Accomplishments, Future Challenges. Pew Oceans Commission, Arlington, Virginia.

Pollutants	Sources	Effects and Trends
Plastics and other debris	Boats, ships, fishing nets, containers, trash, urban runoff	Entangles aquatic life or is ingested; degrades beaches, wetlands and nearshore habitats. Floatables (from trash) are an aesthetic nuisance and can be a substrate for algae and insect vectors.
Pathogens (bacteria, protozoa, viruses)	Sewage, urban runoff, livestock, wildlife, and discharges from boats and cruise ships.	Pose health risks to swimmers and consumers of seafood. Sanitation has improved, but standards have been raised.
Alien species	Ships and ballast water, fishery stocking, aquarists	Displace native species, introduce new diseases; growing worldwide problem (NRC 1996).

The Clean Water Act (CWA) prohibits the discharge of any pollutant to navigable waters from a point source unless an NPDES permit authorizes the discharge. Efforts to improve water quality under the NPDES program primarily focused on reducing pollutants in discharges of industrial process wastewater and municipal sewage. The 1987 amendments to the CWA required municipal separate storm sewer systems (MS4s) and industrial facilities, including construction sites, to obtain NPDES permits for storm water runoff from their facilities. On November 16, 1990, the USEPA promulgated the final Phase I storm water regulations. The storm water regulations are contained in 40 CFR Parts 122, 123 and 124.

The areawide NPDES permit for San Bernardino County areas within the Santa Ana Regional Board's jurisdiction is being considered for renewal in accordance with Section 402(p) of the CWA and all requirements applicable to an NPDES permit issued under the issuing authority's discretionary authority. The requirements included in this Order are consistent with the CWA, the federal regulations governing urban storm water discharges, the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan), the California Water Code, and the State Board's Plans and Policies.

The Basin Plan is the basis for the Regional Board's regulatory programs. The Basin Plan incorporates plans and policies adopted by the State Board by reference. The Basin Plan was developed and is periodically reviewed and updated in accordance with relevant federal and state laws and regulations, including the Clean Water Act and the California Water Code. As required, the Basin Plan designates the beneficial uses of the waters of the Region and specifies water quality objectives intended to protect those uses. (Beneficial uses and water quality objectives, together with an antidegradation policy, comprise federal "water quality standards"). The Basin Plan also specifies an implementation plan, which includes certain discharge prohibitions. In general, the Basin Plan makes no distinctions between wet and dry weather conditions in designating beneficial uses and setting water quality objectives, i.e., the beneficial uses, and correspondingly, the water quality objectives are assumed to apply year-round. (Note: In some cases, beneficial uses for certain surface waters are designated as "I", or intermittent, in recognition of the fact that surface flows (and beneficial uses) may be

present only during wet weather.) Most beneficial uses and water quality objectives were established in the 1971, 1975, 1983, and 1995 Basin Plans. The 1995 Basin Plan was updated in February 2008¹⁰. Amendments to the Basin Plan included new nitrate-nitrogen and total dissolved solids (TDS) objectives for specified management zones and new nitrogen and TDS management strategies applicable to both surface and ground waters and various Total Maximum Daily Loads (TMDLs) and Implementation Plans that had been adopted for several impaired water bodies within the region.

Water Code Section 13241 requires that certain factors be considered, at a minimum, when water quality objectives are established. These include economics and the need for developing housing in the Region. (The latter factor was added to the Water Code in 1987).

During the third term permit (R8-2002-0012) development process, the Permittees raised an issue regarding compliance with Section 13241 of the California Water Code with respect to water quality objectives for wet weather conditions, specifically the cost of achieving compliance during wet weather conditions and the need for developing housing within the Region and its impact on urban storm water runoff. In response to this request, Regional Board staff in collaboration with the permittees in the region has organized a Storm Water Quality Standards Task Force (SWQSTF). The SWQSTF is closely monitoring actual and potential beneficial uses of surface waters within the region. Based on the findings, it is likely that the SWQSTF would recommend changes to the current beneficial use designations and water quality objectives specified in the Basin Plan. This Order may be reopened to incorporate any changes to the water quality standards. In the meantime, the provisions of this Order will result in reasonable further progress towards the attainment of the existing water quality objectives, in accordance with the discretion in the permitting authority recognized by the United States Court of Appeals for the Ninth Circuit in *Defenders of Wildlife v Browner*, 191 F.3d 1159, 1164 (9th Cir. 1999).

III. BENEFICIAL USES

Storm water flows that are discharged to municipal storm drain systems in San Bernardino County are tributary to various water bodies (inland surface streams, lakes and reservoirs) of the state (see Attachment 2 for a list of surface waterbodies within the Permitted area). The beneficial uses of these water bodies include municipal and domestic supply, agricultural supply, industrial service and process supply, groundwater recharge, hydropower generation, water contact recreation, non-contact water recreation, commercial and sportfishing, warm freshwater habitat, cold freshwater habitat, preservation of biological habitats of special significance, wildlife habitat and preservation of rare, threatened or endangered species, spawning, reproduction and development of aquatic habitats and estuarine habitat. The ultimate goal of this urban storm water management program is to protect the beneficial uses of the receiving waters.

IV. PERMITTED AREA

The permitted area is delineated by the Santa Ana-Lahontan Regional Board boundary line on the north and northeast, the Santa Ana-Colorado River Basin Regional Board

¹⁰ http://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/index.shtml

boundary line on the east, the San Bernardino-Riverside County boundary line on the south and southeast, the San Bernardino-Orange County boundary line on the southwest, and the San Bernardino-Los Angeles County boundary line on the west (see Attachment 1). The permittees serve a population of approximately 1.50 million, occupying an area of approximately 620 square miles¹¹. For the entire county, the population estimated as of July 1, 2008 is 2.06 million¹². The latest figures from the San Bernardino County Storm Water Program 2007-2008 Annual Report estimated 378 miles of aboveground channels and 485 miles of underground storm drain channels, for a total of 863 miles in the project area. Approximately seven percent (7%) of the San Bernardino County surface area drains into water bodies within this Regional Board's jurisdiction. Storm water discharges from urbanized areas consist mainly of surface runoff from residential, commercial and industrial developments. In addition, there are storm water discharges from agricultural land uses, including farming and animal feeding operations. However, the CWA specifically excludes discharges from agricultural sources from regulations under this program. The concentrated animal feeding operations within the Region are regulated under the Regional Board's General Permit for Dairies, Order No. R8-2007-0001, NPDES No. CAG018001. Areas of the County not addressed or which are excluded under the storm water regulations and areas not under the jurisdiction of the Permittees are excluded from coverage under this permit. These excluded areas and activities include the following:

- Federal lands and state properties, including, but not limited to, military bases, national forests, hospitals, schools, colleges and universities, and highways;
- Native American tribal lands;
- Agricultural lands; and
- Utilities and special districts.

This Order requires that the Permittees ensure that drainage from development projects in these excluded areas that it allows to be connected to its MS4 meets or exceeds the requirements of the Permittees storm water ordinances, Watershed Action Plans, and any other requirements to ensure that these discharges do not cause or contribute water quality standards violation in the receiving waters.

Discharges from the project area drain into the Santa Ana River within the Upper Santa Ana River Basin.

V. WATERSHED MANAGEMENT/UPPER SANTA ANA RIVER BASIN

To regulate and control storm water discharges from the San Bernardino County area to the San Bernardino County storm drain systems, an area-wide approach is essential. The entire storm drain system in San Bernardino County is not controlled by a single entity; the San Bernardino County, the SBCFCD, several cities, State Department of Transportation (Caltrans), US Army Corps of Engineers and a number of other entities

¹¹ 2006 Report of waste Discharge.

¹² State of California, Department of Finance, Population Estimates and Components of Change by County, July 1, 2000-2008. Sacramento, California, December 2008

own, operate, and/or manage the storm drain systems. In addition to the cities, the county and the SBFCO, there are a number of significant contributors of urban storm water runoff to these storm drain systems. These include: large institutions, such as the State University facilities, schools, hospitals, etc.; federal facilities, such as Department of Defense facilities; State agencies, such as Caltrans; water and wastewater management agencies, such as San Bernardino Valley Municipal Water District and Inland Empire Utilities Agency; the National Forest Service; state parks, and entertainment centers such as Pharaoh's Lost Kingdom Park in Redlands, Fiesta Village Family Fun Park in Colton, and other motorsports facilities scattered throughout the County. The management and control of the entire flood control system cannot be effectively carried out without the cooperation and efforts of all these entities. Also, it would not be meaningful to issue a separate storm water permit to each of the entities within the permitted area whose land/facilities drain into the county storm drain systems and ultimately to waters of the U. S. The Regional Board has concluded that the best management option for the San Bernardino County area is to issue an area-wide storm water permit. Some of the storm drain systems in the project area discharge into storm drain systems controlled by other entities, such as the County of Riverside, the County of Orange, and the County of Los Angeles.

Cooperation and coordination among all the stakeholders are essential for efficient and economical management of the watershed. It is also critical to manage non-point sources at a level consistent with the management of urban runoff within the watershed in order to successfully prevent or remedy water quality impairment. Regional Board staff will facilitate coordination of monitoring and management programs among the various stakeholders, where necessary.

An integrated watershed management approach for urban runoff is consistent with the Strategic Plan (2008-2012¹³) for the State and Regional Boards and the draft California Water Plan Update¹⁴. A watershed wide approach is also necessary for implementation of the load and waste load allocations to be developed under the TMDL process. The MS4 permittees and all the affected entities are required to participate in regional or watershed solutions, instead of project-specific and fragmented solutions.

The pollutants in urban runoff originate from a multitude of sources, and effective control of these pollutants requires a cooperative effort of all the stakeholders and many regulatory agencies. Every stage of urbanization should be considered in developing appropriate urban runoff pollution control methodologies. The program's success depends upon consideration of pollution control techniques during planning, construction and post-construction operations. At each stage, appropriate pollution prevention measures, proper site design considerations, source control measures, and, if necessary, treatment techniques should be considered. In the 2006 ROWD, the Permittees proposed a watershed approach based on a prioritized risk to beneficial uses.

¹³ State Water Resources Control Board, Strategic Plan Update, 2008-2012, September 2, 2008

¹⁴ http://www.waterplan.water.ca.gov/docs/cwpu2009/1208prd/vol2/UrbanRunoff_PRD_09.pdf

1. SUB-WATERSHEDS AND MAJOR CHALLENGES

The Santa Ana River Watershed in San Bernardino County can be subdivided into the following sub-watersheds:

A. UPPER SANTA ANA RIVER WATERSHED

The Upper Santa Ana River Watershed includes the upper reaches of the Santa Ana River (Reaches 4, 5 and 6) and its tributaries.

1. Reach 4 of the Santa Ana River: Reach 4 of the Santa Ana River is the portion of the River from Mission Boulevard bridge in Riverside to the San Jacinto fault (Bunker Hill Dike) in San Bernardino. There is perennial flow in this reach of the River, mostly from the upstream discharges of treated municipal wastewater. Much of this reach is also maintained as a flood control facility. This reach of the River is posted to warn against water contact recreation, due to microbial problems. The wastewater discharges from the sewage treatment plants to this reach of the River are tertiary treated and are not expected to be sources of microbial contamination. This reach is identified as an impaired waterbody for pathogens in the 303(d) list, scheduled for TMDL completion in 2019. For those impaired waterbodies without a TMDL, this Order requires the Permittees to develop a Watershed Action Plan and identify in the Watershed Action Plan and their respective Local Implementation Plans the BMPs that the Permittees are currently implementing and any BMPs that the Permittees are proposing to implement, including identification and control of microbial sources, consistent with the maximum extent practicable standard. Lytle Creek and Cajon Creek are the other major tributaries to this reach of the River.

Other major problems along this reach of the River include the buildup of total dissolved solids (TDS, dissolved salts or minerals) and nitrogen, largely in nitrate form. The buildup of TDS and nitrates can impact downstream beneficial uses, including groundwater recharge. The buildup of TDS and nitrate is mostly due to agricultural uses, including dairies and the application of fertilizers, municipal and industrial wastewater discharges, and reuse and recycling operations. A complex set of programs and policies are included in the Basin Plan to address this problem, including a water supply plan, a wastewater management plan, and a groundwater management plan. Other elements of the Basin Plan include the non-point source program and the storm water program. The Basin Plan identifies the Statewide General Permits and the MS4 permits as the regulatory tools for storm water management in the Basin. In light of the recently adopted Nitrogen-TDS objectives for certain management zones, this Order requires the Permittees to determine baseline concentration of these constituents in dry weather runoff, if any, from significant outfall locations. The Order also includes effluent limitations for TDS and nitrates under dry weather conditions.

2. Reach 5 of the Santa Ana River: This reach of the River extends from the San Jacinto Fault in San Bernardino to the Seven Oaks Dam. Most of this reach of the River is maintained as a flood control facility and is dry, except during

storm flows. Major tributaries to this reach include San Timoteo Creek, City Creek, Plunge Creek, and Warm Creek. These tributaries are usually dry, except for the discharge of treated wastewater from Yucaipa Valley Water District to San Timoteo Creek and from the City of Beaumont to Coopers Creek (a tributary to San Timoteo Creek). These wastewater discharges flow for a short distance and percolate into the ground. No major water quality problems have been identified in this stretch of the River or its tributaries.

3. Reach 6 of the Santa Ana River: This reach includes the River upstream of Seven Oaks Dam. Major tributaries include Bear Creek, Forsee Creek, and Rattlesnake Creek. Flows consist mostly of snowmelt and storm water runoff. Water quality in this reach of the River tends to be very good.

B. CHINO BASIN WATERSHED

The Chino Basin Watershed covers about 405 square miles and lies largely in the southwestern corner of San Bernardino County, and part of western Riverside County. This permit only covers those portions of the watershed that are within San Bernardino County under the jurisdiction of this Board. Surface drainage is generally southward, from the San Gabriel Mountains toward the Santa Ana River and Prado Flood Control Basin. Major surface waterbodies in the Chino Basin Watershed include:

- San Antonio Creek
- Chino Creek
- Cucamonga Creek
- Day Creek, and
- Deer Creek

Although it was originally developed as an irrigated agricultural area, and then into dairies, the watershed is being steadily urbanized. The municipalities under this permit in the Chino Basin Watershed include Chino, Chino Hills, Fontana, Montclair, Ontario, Rancho Cucamonga, Rialto, and Upland. The Chino-Corona Agricultural Preserve had the highest concentration of dairy animals in the nation until very recently. The ground and surface water quality in the area have been adversely impacted by the dairy operations.

The dairies within the Region are regulated under the General Waste Discharge Requirements for Concentrated Animal Feeding Operations (Dairies and Related Facilities) within the Santa Ana Region (Board's General Dairy Permit), Order No. R8-2007-001, NPDES No. CAG018001. The General Dairy Permit allows discharge of storm water from dairies only for storms exceeding a 24-hour 25-year frequency. The area lacks appropriate flood control facilities, and runoff from upstream urbanized areas often inundates some of the dairies in the area, even during light or moderate storm and runoff events. This causes dairy waste containment facilities to fail and overflow into surface drainage facilities. This overflow causes nutrient, TDS,

TSS¹⁵, and microbial problems in the receiving waters. The San Bernardino and Riverside County Flood Control Districts, in cooperation with local municipalities, have coordinated to construct flood control facilities in the area.

On April 19, 2004, construction began on the project known as Country Line Channel (also known as Eastvale San Bernardino Line 2-13) sponsored by San Bernardino County Flood Control District, Riverside County Flood Control and Water Conservation District, and the City of Ontario. The three-mile-long lined drainage channel along the Riverside/San Bernardino county line will intercept runoff and prevent overflow of wastewater retention ponds maintained by neighboring dairies that impact the Santa Ana River Watershed. Overland sheet flows from the City of Ontario and County of San Bernardino portions of the watershed is collected and the flows are discharged into the Cucamonga Creek Channel. The quality of storm water runoff from the area is improved by reducing sheet flows through the dairy areas. The project design enables storm water to be captured and channeled into an existing facility with the capacity to contain the 100-year flow and will accommodate major storm drain laterals in the future to prevent commingling of urban runoff with agricultural drainage. In addition to these benefits, the project prevents the degradation of recharged groundwater upstream of the Chino-Corona Preserve. This project has been completed.

To comply with the recently established nitrogen/TDS objectives, groundwater problems (mostly TDS and nitrate) in the Chino Basin Watershed are being addressed through a comprehensive watershed management plan. As part of this plan, desalters are being built to increase the salt removal from the groundwater through a pump and treat system for contaminated groundwater in the southern part of Chino Basin. One desalter (Chino I Desalter) has been operational since August 2000, and a second one, known as the Chino I Expansion/Chino II Desalter Project, was completed in the spring of 2006.

(Also see discussions below regarding TMDLs for the Middle Santa Ana River watershed.)

C. BIG BEAR LAKE WATERSHED

The Big Bear Lake watershed is located in the San Bernardino Mountains. Major waterbodies in this watershed include:

- Big Bear Lake
- Baldwin Lake (currently a dry lakebed)
- Stanfield Marsh
- Shay Meadows
- Rathbone (Rathbun) Creek
- Summit Creek

¹⁵ TSS=total suspended solids

- Grout Creek
- Knickerbocker Creek

Big Bear Lake is a high mountain reservoir occupying a relatively small, east to west oriented basin. The basin supports a large number of recreational activities. Lake recreational activities include fishing, swimming, boating and water skiing. Areas adjacent to the lake are used for camping, skiing, hiking, equestrian trails and other outdoor activities. Water in the Lake is also used for municipal supplies. A number of water quality problems have been identified for the Lake.

The 2006 303(d) list of impaired water bodies (see below) designated the following waterbodies in this sub-watershed as impaired: Big Bear Lake (nutrients, copper and mercury); Grout Creek (metals and nutrients); Knickerbocker Creek (metals and pathogens); Summit Creek (nutrients); and Rathbone Creek (nutrients and siltation). The problem pollutants have been identified as coming from resource extraction activities, urban runoff, snow skiing activities, construction and land developments, and non-point sources. In conjunction with local stakeholders, Big Bear Lake Nutrient TMDL for Dry Hydrologic Conditions has been developed and is being implemented. For other pollutants, work is underway to develop TMDLs.

2. CWA SECTION 303(d) LIST AND TMDLS:

The 2006 water quality assessment conducted by the Regional Board¹⁶ identified a number of waterbodies within the Region as impaired waterbodies, under Section 303(d) of the CWA¹⁷. These are waterbodies where the designated beneficial uses are not met and the water quality objectives are being violated. These waterbodies were placed on the CWA Section 303(d) list of impaired waters. The impaired waterbodies in San Bernardino County within the Santa Ana Regional Board's jurisdiction are listed in Table 2.

Federal regulations require that a total maximum daily load (TMDL) be established for each 303(d) listed waterbody for each of the pollutants causing impairment. The TMDL is the total amount of the problem pollutant that can be discharged while water quality standards in the receiving water are attained, i.e., water quality objectives are met and the beneficial uses are protected. It is the sum of the individual wasteload allocations (WLA) for point source inputs, load allocations (LA) for non-point source inputs and natural background, with a margin of safety. The TMDLs are the basis for limitations established in waste discharge requirements.

This Order incorporates TMDLs that have been adopted for bacterial indicator in the Middle Santa Ana River Watershed and nutrient (phosphorus) for dry hydrological conditions in Big Bear Lake. On August 26, 2005, the Regional Board adopted

¹⁶ On April 24, 2009, the Regional Board adopted an Integrated List of Impaired Waters Under Clean Water Act Sections 305(b) and 303(d), Resolution No. R8-2009-0032.

¹⁷ 2006 CWA Section 303(d) list of water quality limited segments
(http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/r8_06_303d_reqtm dls.pdf)

Resolution No. R8-2005-001 amending the Basin Plan to incorporate Bacterial Indicator TMDL for Middle Santa Ana River Watershed Waterbodies. On April 21, 2006, the Regional Board adopted Resolution No. R8-2006-0023 amending the Basin Plan to incorporate a Nutrient TMDL for Dry Hydrological Conditions for Big Bear Lake. A Mercury TMDL for Big Bear Lake is currently under development, and TMDLs are being developed for all pollutants identified in Table 2. The stakeholders in this watershed are collaborating in the development and implementation of the TMDLs.

Federal regulations (40 CFR 122.44(d)(vii)(B)) require that the NPDES permits be consistent with the applicable wasteload allocations in the TMDLs. This Order requires the Permittees to comply with applicable wasteload allocations.

For 303(d) listed waterbodies without a TMDL, the Permittees are required to provide special protections through development and implementation of Watershed Action Plans or other focused control measures that would address the pollutant of concern. If a TMDL has been developed and an implementation plan is yet to be developed, the Permittees are required to develop constituent specific source control measures, conduct additional monitoring and/or cooperate with the development of an implementation plan.

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Table 2**CLEAN WATER ACT SECTION 303(D) LISTED WATERBODIES & TMDL SCHEDULE¹⁸**

Waterbody	Hydro Unit	Size Affected	Pollutant Stressor	Source	Priority	TMDL Schedule	Permittees
Big Bear Lake	801.710	2970 acres 2970 acres 2970 acres 2970 acres 2970 acres 2970 acres 2970 acres	Copper Mercury ¹⁹ Metals Noxious aquatic plants Nutrients Sedimentation/Siltation ²⁰ PCBs (Polychlorinated biphenyls)	Resource Extraction Resource Extraction ²¹ Resource Extraction Construction/Land development Construction/Land development Snow Skiing Activities Construction/Land development Snow Skiing Activities Unknown	Medium Medium Medium Medium Medium Medium Medium Medium	2007 2007 2007 2006 2006 2006 2006 2019	City of Big Bear Lake County of San Bernardino
Summit Creek	801.710	1 mile	Nutrients	Construction/Land Development	Medium	2008	City of Big Bear Lake, County of San Bernardino
Knickerbocker Creek	801.710	2 miles 2 miles	Metal Pathogens	Unknown Non-point Source Unknown Non-point Source	Medium	01/03 – 01/05 Sole Source	City of Big Bear Lake, County of San Bernardino
Grout Creek	801.720	2 miles 2 miles	Metal Nutrients	Unknown Non-point Source Unknown Non-point Source	Medium	01/02 – 01/05 2008	City of Big Bear Lake, County of San Bernardino
Rathbone Creek	801.720	2 miles 2 miles	Nutrients Sedimentation/Siltation	Unknown Non-point Source Snow Skiing Activities	Medium	2008 2006	City of Big Bear Lake, County of San Bernardino
Mountain Home Creek, East Fork	801.700	1 mile	Pathogens	Unknown Non-point Source	Low	2019	County of San Bernardino
Mountain Home Creek	801.580	4 miles	Pathogens	Unknown Non-point Source	Low	2019	County of San Bernardino
Mill Creek (Prado Area)	801.250	4 miles	Nutrients Suspended Solids	Agriculture, Dairies Dairies	Medium Medium	2019 01/00 – 01/05	Ontario, Rancho Cucamonga, Upland, SBCFCD, County of San Bernardino
Mill Creek, Reach 1	801.580	5 miles	Pathogens	Unknown Non-point Source	Low	2019	Redlands, SBCFCD, County of San Bernardino
Mill Creek, Reach 2	801.580	8 miles	Pathogens	Unknown Non-point Source	Low	2019	SBCFCD, County of San Bernardino
Santa Ana River, Reach 4	801.270	12 miles	Pathogens	Non-point Source	Low	2019	Colton, Rialto, Highland, Grand Terrace, Redlands, City of San Bernardino, SBCFCD, County of San Bernardino
Lytle Creek	801.400	18 miles	Pathogens	Unknown Non-point Source	Low	01/08 – 01/11	City of San Bernardino, SBCFCD, County of San Bernardino
Chino Creek, Reach 1	801.210	2 miles	Nutrients	Agriculture Dairies	Medium	2019	Chino, Chino Hills, SBCFCD, County of San Bernardino
Prado Park Lake	801.210	60 acres	Nutrients	Non-point Source	Low	01/08 – 01/11	Chino, Chino Hills, County of San Bernardino

¹⁸ Based on STATE BOARD 2006 CWA Section 303(d) List of Water Quality Limited Segments, Santa Ana Regional Water Quality Control Board, USEPA Approved June 28, 2007 (http://www.waterboards.ca.gov/water_issues/programs/tmdl/docs/303dlists2006/epa/r8_06_303d_reqtmlds.pdf)

¹⁹ Big Bear Lake is recommended for delisting for copper in the Proposed 2008 303(d)-305(b) Integrated Report

²⁰ Big Bear Lake is recommended for delisting for sedimentation/siltation in the Proposed 2008 303(d)-305(b) Integrated Report

²¹ Resource extraction was removed as a potential source for Mercury in Big Bear Lake and replaced with atmospheric deposition in the Proposed 2008 303(d)-305(b) Integrated Report

VI. FIRST, SECOND AND THIRD-TERM PERMITS; URBAN STORM WATER RUNOFF POLLUTION CONTROL PROGRAMS/POLICIES

Prior to EPA's promulgation of the final storm water regulations, the counties of Orange, Riverside and San Bernardino requested areawide NPDES permits for storm water runoff. On August 29, 1990, the Regional Board issued Order No. 90-136 to the San Bernardino County permittees (first term permit). In 1996, the Board adopted Order No. 96-32 (second term permit). On October 25, 2002, the Board adopted Order No. R8-2002-0012 (third-term permit). These permits included the following requirements as outlined in the storm water regulations:

1. Prohibited non-storm water discharges to the MS4s, with certain exceptions.
2. Required the municipalities to develop and implement a drainage area management plan (DAMP) to reduce pollutants in urban storm water runoff to the maximum extent practicable (MEP).
3. Required the discharges from the MS4s to meet water quality standards in receiving waters.
4. Required the municipalities to identify and eliminate illicit connections and illegal discharges to the MS4s.
5. Required the municipalities to establish and maintain legal authority to enforce storm water regulations.
6. Required monitoring of dry weather flows, storm flows, and receiving waters and conduct program assessments.
7. Required the permittees to inventory, prioritize and inspect construction sites and industrial and commercial facilities based on threat to water quality.
8. Required the permittees to develop a restaurant inspection program to address practices that may have an impact urban runoff quality such as: oil and grease disposal; trash bin area management; parking lot cleaning; spill clean-up; and maintenance of grease traps and interceptors.
9. Required the permittees to review and approve Water Quality Management Plans for categories of new development and significant redevelopment projects to address the impact of post-development runoff on water quality and hydromodification.
10. Required the permittees to develop a unified response plan to respond to any sewage spills that may have an impact on receiving water quality (Sanitary Sewer Overflow Unified Sewage Response Plan, July 1, 2003).

The following programs and policies have been implemented or are being implemented by the permittees. During the first term permit, the permittees developed a Drainage Area Management Plan (1993 DAMP). The 1993 DAMP included a number of best management practices (BMPs) and a very extensive public education program. The

monitoring programs for the first and second term permit included 10 monitoring stations within streams and flood control channels and later on reduced to 5 monitoring stations to divert permittees' resources to a bacterial source monitoring program. The Executive Officer approved a delay in implementing the bioassessment requirement of the third term permit to allow the development of indices of biological integrity that could be applied to inland waters. Subsequently, a regional bioassessment monitoring program was initiated by the Surface Water Ambient Monitoring Program (SWAMP) to determine the conditions of the receiving water in a more holistic manner. This Order requires the Permittees to participate in the regional bioassessment monitoring program. The findings and conclusions from these monitoring stations and monitoring programs (Riverside County, Orange County and others are participating in this regional effort) have been used to identify problem areas and to re-evaluate the monitoring program and the effectiveness of the BMPs. The future direction of some of these program elements will depend upon the results of the ongoing studies and a holistic approach to watershed management.

Other elements of the storm water management program included identification and elimination of illicit connections and illegal discharges and establishment of adequate legal authority to control pollutants in storm water discharges. The permittees have completed a survey of their storm drain systems to identify illegal/illicit connections and have adopted appropriate ordinances to establish legal authority. Some of the more specific achievements during the previous term permits are as follows:

1. Interagency Agreements and Coordination: The Permittees established a program management structure through an interagency Implementation Agreement and established a Management Committee as an overall decision making body with designated representatives from each of the Permittees. The Permittees reviewed and revised the Implementation Agreement as part of the ROWD.
2. Ordinances, Plans and Policies: The Permittees completed a review of their storm drain ordinances and enforcement procedures for prohibiting discharges to the MS4s and for taking appropriate enforcement actions. The Area-Wide Enforcement Guidelines were subsequently prepared to support enforcement actions and to introduce consistency among the Co-Permittees' enforcement actions. In 2004, the Permittees replaced their Model Guidelines for New Development and Redevelopment with the Water Quality Management Plan Guidance and Template (WQMP), which was approved in 2004 and updated in 2005. The Permittees continue to provide training for appropriate public agency personnel on the Municipal Activities Pollution Prevention Strategy (MAPPS). The goal of this program is to ensure that public agency facilities and associated activities do not become a source of pollutants in storm water runoff. These "facilities" include the Permittees' vehicle and equipment fueling and fleet maintenance yards, corporate yards, hazardous materials storage facilities, material transfer and storage facilities, waste management and storage, fire stations, animal shelters, and municipal swimming pools. The MAPPS lists the potential pollutants for these facilities and provides a list of BMPs for controlling these pollutants.

3. Municipal Inspections: The Permittees completed the primary development phase of the MS4 Solutions Database. This database houses the inventory of construction, industrial, and commercial sites/facilities within each Permittee's jurisdiction. The inventory is regularly updated with new information.

The Permittees developed and distributed BMP guidelines for the control of pollutants from mobile vehicle maintenance, carpet cleaning, commercial landscape maintenance, and pavement cutting activities.

4. HCOC Mapping: In early 2005, the Permittees initiated a GIS-based mapping program to identify stream channels in the area that could be susceptible to excessive erosion and should be considered in assessing hydrologic conditions of concern (HCOC). Upon completion of this project, it will be integrated into the Watershed Action Plan.

5. Illegal Discharge/Illicit Connections: Litter, Debris and Trash Control: The Permittees completed a general characterization of the trash collected from the permitted area and are using this information to develop BMPs specifically targeting the major sources of trash in urban runoff.

6. Municipal Facilities/Activities: The San Bernardino County Flood Control District completed an assessment of their flood control facilities to evaluate opportunities to configure and/or to reconfigure channel segments to function as pollution control devices and to optimize beneficial uses.

The Permittees developed and distributed BMP guidelines for the control of household use of fertilizers, pesticides, herbicides, and other chemicals, and pavement cutting activities.

The Permittees worked with the County Fire Chiefs Association to develop a list of appropriate BMPs to be implemented to reduce pollutants from training activities, fire hydrant/sprinkler testing or flushing, non-emergency fire fighting, and any BMPs that could feasibly be implemented to address flows that occur during emergency firefighting activities.

7. Program Review: The annual reports and the Report of Waste Discharge included an effectiveness assessment of various program elements. Based on the monitoring results and the program effectiveness assessments, the 2006 ROWD recommended a shift to compliance-based outcomes measured primarily by compliance with water quality objectives and TMDL implementation. The ROWD also included an analysis of the impact of urban storm water runoff on the beneficial uses and recommended a risk-based approach to address problems associated with urban storm water runoff.

The requirements specified in this Order are consistent with the approach recommended in the ROWD including the TMDLs adopted by the Regional Board and approved by the State and the USEPA.

8. Public Education: In addition to developing and distributing fact sheets, brochures, and flyers with BMP information to control the discharge of pollutants in urban runoff, the Permittees have utilized a number of other avenues to convey this message to the public. These include: (1) public service

announcements utilizing a multi-media approach, such as newspapers, radio, and television; (2) presentations at elementary schools and at and high school automotive classes; (3) educational displays at libraries and public buildings throughout the permitted area; (4) a point-of-purchase campaign with fact sheets containing information on integrated waste management, proper use of pesticides and fertilizers and integrated pest management programs; (5) a point-of-discharge campaign by warning the public about the dangers of waste disposals into the storm drains by stenciling all storm drain inlets; (6) a business recognition program to identify and promote "clean" businesses; and (7) a web-site with links to other programs and services offered by the Permittees to combat storm water pollution including a 24-hour hotline to report spills, leaks and any illegal discharges to the MS4s. The Permittees have already met or exceeded the goal of a minimum of 5 million impressions per year by targeting all residents, businesses, commercial and industrial establishments within the Permitted area.

The Permittees also completed a public awareness survey to determine the effectiveness of their existing public and business education strategy. The permittees participated in joint outreach programs with other entities including, but not limited to, SQSTF, Caltrans, and other municipal storm water programs.

These programs and public education efforts should be continued to reinforce the importance of public participation and awareness to control pollutants in urban storm water runoff.

The proposed Order includes additional requirements for an effective residential program as irrigation and nuisance flows from residential areas continue to be significant sources of nutrients, pesticides and other pollutants (from over fertilization or improper use of fertilizers, pesticides and other household chemicals).

9. Public Agency Training: During the second permit term, the Permittees developed and conducted an 8-hour training program on the Municipal Activities Pollution Prevention Strategy (MAPPS). The MAPPS training program provided a basic storm water training and task-specific education for all targeted Permittee staff. These included key staff involved in sewage system maintenance, storm drain system inspection and maintenance, landscape maintenance, road and street maintenance, and key staff at maintenance and storage facilities.

The MAPPS training was expanded in the 3rd term permit to include illegal discharge identification, response, and reporting; industrial/commercial inspection program, new and redevelopment program and public agency activities program. During the third term permit, the Permittees refined their training program and developed web-based training modules to provide better access to the training program. The online training program is enhanced by various other training efforts, including live presentations and on the job training.

Regional Board staff conducted audits of the urban runoff program for each of the Permittees and determined that many of the Permittees' storm water program staff and contract staff were not adequately trained. The fourth term permit

requires the Permittees to develop appropriate curriculum for staff at various levels to make the storm water program more effective.

10. Watershed Activities: The Principal Permittee represented the Permittees in various watershed efforts dedicated to improving water quality, gathering technical information to support the MS4 program, TMDL activities, and regional and sub-regional monitoring programs. (See Section VII, below for a list of these programs.)

The Permittees worked with other local and State agencies to provide a consistent urban storm water pollution control message to the public. These programs included:

- a. Public Health (Safe Drinking Water Program, Vector Control Program, Housing/Property Improvement Program, and Food Protection Program),
- b. Fire Department - Hazardous Materials Division, (Household Hazardous Waste Program, Emergency Response and Enforcement, Field Services, and Local Oversight Program),
- c. Economic Development / Public Services Group (Flood Control Function, Transportation Function, Waste Management Function, Regional Parks Function, Land Use Services and Code Enforcement Function), and
- d. San Bernardino County Special Districts (Operations Divisions consisting of Street Lighting Districts, Recreation and Parks Districts, Road Districts; Water and Sanitation Division consisting of nine water districts and seven sanitation districts).

The Regional Board and the Permittees recognize the importance of watershed-based action plans to address such complex issues related to the control of pollutants from various sources in urban storm water runoff. The fourth term Permit includes requirements for the development and implementation of Watershed Action Plans (see Section VIII, below).

11. Related Activities: The Permittees stabilized a number of flood control channels, constructed a sediment basin, expanded an existing basin, and identified, eliminated or properly documented illicit connections to the MS4s.
12. Water Quality Monitoring: The Permittees continue to routinely monitor water quality at five sites for a variety of constituents. Three of the five sites were outfall locations selected to represent the quality of storm water from the drainage area; two sites serve as receiving water monitoring sites. The Permittees also participate in a number of TMDL-related or other regional or sub-regional monitoring programs. A number of programs related to the monitoring programs were completed during the third term permit (see Section VII, below). These monitoring programs continue to indicate that urban storm water runoff contains elevated levels of pollutants (see Section VII, below).

The fourth term Permit includes additional monitoring requirements consistent with the federal regulations (40 CFR 122.48) and California Water Code Sections 13267 and 13383.

VII. WATER QUALITY ASSESSMENTS

An accurate and quantifiable measurement of the impact of the various elements of the storm water management programs is difficult, due to a variety of reasons, such as the temporal and spatial variations in storm water runoff quality, incremental nature of BMP implementation, lack of baseline monitoring data and the existence of some of the programs and policies prior to initiation of formal storm water management programs. There are generally two accepted methodologies for assessing water quality improvements: (1) conventional monitoring such as chemical-specific water quality monitoring; and (2) non-conventional monitoring such as monitoring of the amount of household hazardous waste collected and disposed off at appropriate disposal sites, the amount of used oil collected, the amount of debris removed, etc.

Water quality monitoring data submitted to date document a number of exceedances of water quality objectives specified in the Basin Plan, CTR criteria and/or USEPA's storm water benchmarks for fecal coliform bacteria, total suspended solids (TSS), nutrients, COD and metals. Toxicity has also been observed at some of the monitoring locations. The 303(d) list of impaired waterbodies within the Region (see Table 2, above) also indicates that urban runoff is a significant source for these impairments. These findings indicate that urban storm water runoff continues to cause or contribute to water quality impairments.

A comparison of wet weather water quality monitoring data for 2000-2006²² with that from 1994-1999²³ shows that the median concentrations for most constituents have not changed significantly. Furthermore, monitoring data for the period 1994-2006 indicate that median concentrations of wet weather composite samples at monitoring stations²⁴ 2, 3, and 5 exceeded the USEPA benchmarks for TSS, COD, NO₃-N, and metals. With the exception of Site 10 (Santa Ana River upstream of Seven Oaks Dam, tributary to mostly undeveloped areas), coliform bacteria concentrations were far above the Basin Plan water quality objectives. These data support the need for continued monitoring and additional control measures to control the discharge of pollutants from the MS4s.

A limited number of constituents were monitored during dry weather at representative urban runoff locations and some of these constituents also exceeded the Basin Plan objectives. Dry weather data from a background bacteria indicator study²⁵ collected

²² 2006 ROWD

²³ 2002 ROWD

²⁴ Drainage at Site 2 (Cucamonga Creek @ Hwy 60) is predominantly urban, influenced by commercial and industrial land uses with some contribution from open space/rural and residential land uses. The predominant land use at Site 3 (Cucamonga Creek @ Hellman) is agricultural, but there is contribution from open space/rural, and discharge from a municipal wastewater treatment plant between Sites 2 and 3. Monitoring site 5 (Hunts Lane n/o Hospitality Lane) is within a constructed storm drain system and flow is mostly from commercial and light industrial land uses with some urban contribution.

²⁵ 2005-2006 Annual Report

from December 2003 to June 2006 at Site 10, a tributary to mostly undeveloped areas, also exceeded Basin Plan water quality objectives. These findings indicate that additional surveillance and controls may be needed to minimize and/or eliminate dry weather flows into and from the MS4s as well as to further characterize dry weather sources at catchment areas draining into Site 10.

The Principal Permittee conducted an analysis of the receiving water monitoring data collected during the last 15 years for a number of monitoring sites (Sites 2, 3, 8²⁶, and 10²⁷). This analysis indicates that the most significant water quality problem associated with urban storm water runoff is bacterial contamination. The Permittees' monitoring data were then compared to monitoring data available from other sources (NAWQA, RWQCB 305(b) Assessment) to determine beneficial use impacts and pollutants causing the impacts. This analysis was then used to prioritize problem areas and to propose a risk-based approach to address these problems.

Based on the evaluation of monitoring data described above, the 2006 ROWD prioritized the pollutants of concern with regards to storm water management as follow:

- a. High Priority: Coliform bacteria
- b. Medium Priority: Zinc, copper, lead
- c. Low Priority: Nutrients, COD, TSS

During the prior permit terms, there was an increased focus on watershed management initiatives and coordination among the municipal permittees in Orange, Riverside and San Bernardino Counties. These efforts resulted in a number of regional monitoring programs and other coordinated program and policy developments. The Principal Permittee continues to be an active participant in the Storm water Quality Standards Task Force (SWQSTF), the Big Bear TMDL and Middle Santa Ana River (MSAR) Bacterial Indicator TMDL, the San Antonio Canyon Watershed Group, and the Storm Water Monitoring Coalition Studies. In addition to the TMDL implementation and monitoring activities, the Permittees participate in the Regional Integrated Freshwater Bioassessment Monitoring Program and the BMP Effectiveness Project to assess the effectiveness of LID techniques.

The Permittees have completed several monitoring-related activities, including Comparative Evaluation of Microbial Source Tracking Techniques, Model Monitoring Program Guidance, Peak Flow Study, and Laboratory Inter-Calibration.

It is anticipated that with continued implementation of the MSWMP, the ROWD and the requirements specified in this Order, the goals and objectives of the storm water regulations will be met, including protection of the beneficial uses of all receiving waters.

²⁶ Site 8 station is located in the Santa Ana River (SAR) at Hamner Avenue, runoff is mostly from urban land uses. .

²⁷ Site 10 station is located at SAR, upstream of Seven Oaks Dam, runoff is mostly from open/rural areas.

VIII. FUTURE DIRECTION/2006 ROWD & MSWMP

The NPDES permit renewal application (2006 ROWD) and the areawide Municipal Storm Water Management Program (MSWMP) describe the programs and policies the Permittees are proposing to implement during the fourth term permit. The 2006 ROWD and MSWMP are the principal guidance documents for urban storm water management programs within San Bernardino County.

During the first three permit cycles, the Permittees focused on characterizing storm water quality and establishing a fundamentally sound program in each of the key areas identified in EPA regulations [40 CFR §122.34(b)]: (1) public education and outreach; (2) public involvement/participation; (3) illicit discharge detection and elimination; (4) construction site storm water runoff control; (5) post-construction storm water management in new development and redevelopment; and (6) pollution prevention/good housekeeping for municipal operations.

The sampling data collected over the years have been used to prioritize the most significant water quality problems in the receiving waters. As indicated in Section VII, above, the highest priority for the storm water program is the reduction of bacterial contamination.

For the fourth term Permit, the Permittees have proposed to develop and implement a risk-based, outcome-oriented, compliance-focused program and will shift storm water management program from process-based outcomes which were mostly measured through completion of programmatic or administrative tasks. Under the fourth term Permit, compliance will be determined based on attaining water quality standards and compliance with the wasteload allocations specified in the Total Maximum Daily Loads (TMDLs). Risk-based assessment and management aim to reallocate and reapportion program resources to target pollutants-of-concern that pose the greatest threat to human health or the environment. An outcome-oriented program places much greater emphasis on demonstrating the effectiveness of various implementation activities. Direct measures (such as changes in water quality, tons of hazardous waste collected, etc.) will be preferred over indirect measures (such as advertising impressions, events attended, etc.). In particular, where TMDLs have been adopted for specific pollutants, the Permittees will shift available resources to be compliance-focused, to achieve compliance with water quality objectives. Program elements will be targeted toward executing the requirements identified in the TMDL implementation plans and pollution reduction goals specified in this Order. The primary goal of a compliance-focused program is to ensure storm water discharges consistently meet the water quality objectives identified in the Basin Plan. A comprehensive water quality monitoring program that is proposed in the fourth-term Permit will be used to evaluate the success of this new initiative.

TMDL wasteload allocations for bacterial indicator in the Middle Santa Ana River watershed and wasteload allocations for nutrients specified in the Nutrient TMDLs for Dry Hydrological Conditions in the Big Bear Lake watershed are incorporated into this Order. This Order requires that the results of the water quality monitoring provide the feedback loop to evaluate the effectiveness of the BMPs and programs implemented in the watershed and demonstrate Permittees' progress towards compliance with the

wasteload allocations. Other TMDLs planned during the next MS4 Permit term include Big Bear Lake Nutrient TMDL (for all weather conditions), Big Bear Lake Mercury TMDL, Big Bear Lake and Rathbone Creek Sediment TMDL, and Big Bear Lake Watershed Metals TMDLs. The Permittees, within the affected watersheds, are required to participate in the development and implementation of those TMDLs. This Order may be reopened to incorporate any of the newly adopted and approved TMDLs.

An audit of each of the Permittees' storm water management programs during the third term permit indicated no clear nexus between the watershed protection principles specified in the MSWMP and the WQMP and the Permittees' General Plan or related documents such as Development Standards, Zoning Codes, Conditions of Approval, Project Development Guidance, etc. It appears that many of the existing procedures, Development Standards, Ordinances and Municipal Codes may be barriers to implementation of watershed protection principles, especially low impact development techniques. This Order requires the Permittees to review and revise the Permittees' General Plan, Comprehensive or Master Plan, Municipal Codes, Subdivision Ordinances, Project Development Standards, Conditions of Approval or related documents to facilitate implementation of low impact development and other watershed protection principles.

The USEPA has recommended a shift to watershed-based NPDES permitting²⁸ and a watershed approach²⁹ to CWA programs, including NPDES programs. The Permittees and the Regional Board also recognize that a watershed-based approach is critical in controlling pollutants in urban storm water runoff. Consistent with this approach, this Order requires the Permittees to develop, implement and monitor the effectiveness of a Watershed Action Plan that integrates hydromodification and water quality management strategies with land use planning policies, ordinances, and plans within each jurisdiction. A watershed approach considers the diverse pollutant sources and stressors and watershed goals within a defined geographic area (i.e., watershed boundaries) and it has three basic components: (1) *Geographic Focus*: Watersheds are nature's boundaries. They are the land areas that drain to surface waterbodies, and they generally include lakes, rivers, estuaries, wetlands, streams, and the surrounding landscape. Ground water recharge areas are also considered. (2) *Sound Management Techniques Based on Strong Science and Data*: Sound scientific data, tools, and techniques are critical to inform the process. Actions taken include characterizing priority watershed problems and solutions, developing and implementing action plans, and evaluating their effectiveness within the watershed. (3) *Partnerships/Stakeholder Involvement*: Watersheds transcend political, social, and economic boundaries. Therefore, it is important to involve all the affected interests in designing and implementing goals for the watershed. Watershed teams may include representatives from all levels of government, public interest groups, industry, academic institutions, private landowners, concerned citizens, and others.

²⁸ EPA: Watershed-based NPDES permitting is a process that emphasizes addressing all stressors within a hydrologically-defined drainage basin, rather than addressing individual pollutant sources on a discharge-by-discharge basis.

²⁹ EPA (1996a): "The watershed approach is a coordinating framework for environmental management that focuses public and private sector efforts to address the highest priority problems within hydrologically defined geographic areas, taking into consideration both ground and surface water flow."

To promote transparency and consistency within the permitted area, this Order requires each Permittee to develop its own local implementation plan (LIP) that specifies how each program element of the MSWMP and this Order will be implemented within its jurisdiction. The LIP shall specify the Permittee's legal authority and standard operating procedures including but not limited to its ordinances, plans, policies, procedures, personnel, tasks, schedules, checklists, educational materials, forms, maps of drainage areas, maps of wetlands or other environmentally sensitive areas, tools and resources utilized to implement the MSWMP requirements and requirements specified in this Order within its jurisdiction. The LIP shall identify the organizational units and personnel responsible for implementation of each program element, establish internal reporting requirements to ensure and promote accountability, and shall describe an adaptive method of evaluation and assessment of program effectiveness for the purpose of identifying program improvements.

The audits conducted by the Regional Board have also shown a significant deficiency in measuring program effectiveness. This Order specifies quantifiable measures for evaluating program effectiveness.

The above-mentioned strategies for the fourth term permit build upon and continue the programs and policies developed by the Permittees during the prior term permits as described in Sections VI and VII, above. A combination of these programs and policies and the requirements specified in this Order should improve control of pollutants in storm water runoff from storm water conveyance facilities owned and/or controlled by the permittees.

IX. PERMIT REQUIREMENTS

The legislative history of storm water statutes (1987 CWA Amendments), US EPA regulations (40CFR Parts 122, 123, and 124), and clarifications issued by the State Water Resources Control Board (State Board, Orders No. WQ 91-03 and WQ 92-04) indicate that a non-traditional NPDES permitting strategy was anticipated for regulating urban storm water runoff. Due to economic and technical infeasibility of full-scale end-of-pipe treatments and the complexity of urban storm water runoff quality and quantity, MS4 permits generally include narrative requirements for the implementation of BMPs in place of numeric effluent limits.

The requirements included in this Order are meant to specify those management practices, control techniques and system design and engineering methods that will result in maximum extent practicable (MEP) protection of the beneficial uses of the receiving waters. The State Board (Orders No. WQ 98-01 and WQ 99-05) concluded that MS4s must meet the technology-based MEP standard and water quality standards (water quality objectives and beneficial uses). The U. S. Court of Appeals for the Ninth Circuit subsequently held that strict compliance with water quality standards in MS4 permits is at the discretion of the permitting authority. Any requirements included in the Order that are more stringent than the federal storm water regulations is in accordance with the CWA Section 402(p)(3)(iii), and the California Water Code Section 13377 and are consistent with the Regional Board's interpretation of the requisite MEP standard.

The 2006 Report of Waste Discharge (ROWD) included a discussion of the current status of San Bernardino County's urban storm water management program and the proposed

programs and policies for the next five years (fourth term permit). A separate Municipal Storm Water Management Plan (MSWMP), submitted with the ROWD, defines the storm water programs and activities to be implemented during the fourth permit term and includes by reference a number of related documents such as the Water Quality Management Plan (WQMP). This Order incorporates these documents (2006 ROWD and MSWMP and other related documents).

This Order recognizes the significant progress made by the Permittees during the prior term permits in implementing various elements of the storm water program. This Order also recognizes regional and innovative solutions to such a complex problem, addresses deficiencies of the Permittees' storm water programs observed during the audits conducted by Regional Board staff, considers comments by the USEPA on other draft MS4 Permits and recommendations in the recently published report on Urban Storm Water Management by the National Research Council³⁰ (NRC) study. This Order specifies quantifiable performance measures to determine compliance and assess the effectiveness of the storm water programs. This Order incorporates an integrated watershed approach in solving water quality and hydromodification impacts resulting from urbanization and aims to promote low impact development techniques as a key element to mitigate impacts from new and redevelopment projects. The proposed permit also includes water quality based effluent limits based on wasteload allocations in approved TMDLs. The goal of these programs and policies that are included in this Order is to achieve and maintain water quality standards in the receiving waters.

The major requirements include: 1) Discharge prohibitions; 2) Effluent limitations and discharge specifications, including wasteload allocations for discharges to 303(d) listed waterbodies with adopted TMDLs and Permittees' De Minimus Discharges; 3) Receiving water limitations; 4) Legal authority and enforcement; 5) Prohibition on illicit connections and illegal discharges; 6) Control of sewage spills, sanitary sewer line leaks, septic system failures and portable toilet discharges; 7) Municipal inspection programs; 8) New development, including significant re-development requirements, including quantifiable measures for low impact development implementation and management of hydrologic conditions of concern and a time schedule to develop a watershed approach to address water quality and hydromodification issues; 9) public education and outreach; 10) Municipal facilities/activities; 11) Municipal construction projects; 12) Training program for storm water managers, planners, inspectors, and municipal contractors; and 13) Monitoring and reporting requirements.

These programs and policies are intended to improve urban storm water quality and protect the beneficial uses of receiving waters of the region.

1. DISCHARGE PROHIBITIONS

In accordance with CWA Section 402(p)(3)(B)(ii), this Order prohibits the discharge of non-storm water to the MS4s, with a few exceptions. The specified exceptions are consistent with 40 CFR 122.26(d)(2)(iv)(B)(1). If the permittees or the Executive Officer determines that any of the exempted non-storm water discharges contain pollutants, a separate NPDES permit, a separate Waste

³⁰ National Research Council Report (2008), http://www.nap.edu/catalog.php?record_id=12465

Discharge Requirement or coverage under the Regional Board's De Minimus permit will be required.

2. EFFLUENT LIMITATIONS AND DISCHARGE SPECIFICATIONS, INCLUDING WASTE LOAD ALLOCATIONS FOR DISCHARGES TO 303(D) LISTED WATERBODIES WITH ADOPTED TMDLS

This Order clarifies allowed discharges and those discharges allowed only if certain discharge specifications are met, such as those listed in the De Minimus permit. This Order also authorizes Permittees' de minimus discharges subject to maximum daily concentration limits consistent with the Regional Board's General De Minimus Permit for Discharges to Surface Waters, Order No. R8-2009-0003, NPDES No. CAG 998001. Permittees de minimus discharges covered under this Order include: 1) dewatering wastes from subterranean seepage, except for discharges from utility vaults; 2) discharges resulting from hydrostatic testing of vessels, pipelines, tanks, etc.; 3) discharges resulting from the maintenance of potable water supply pipelines, tanks, reservoirs, etc.; 4) discharges resulting from the disinfection of potable water supply pipelines, tanks, reservoirs, etc.; 5) discharges from potable water supply systems resulting from initial system startup, routine startup, sampling of influent flow, system failures, pressure releases, etc.; 6) discharges from fire hydrant testing or flushing; 7) air conditioning condensate; 8) swimming pool discharges; 9) discharges resulting from diverted stream flows; and 10) Construction dewatering wastes. The MSWMP and the LIP are required to be revised to incorporate information regarding Permittees' de minimus discharges.

This Order requires Permittees to comply with established TMDL wasteload allocations specified for urban runoff and/or storm water by implementing the necessary BMPs. NPDES regulations at 40 CFR 122.44(d)(vii)(B) require that NPDES permits be consistent with wasteload allocations approved by the USEPA. Wasteload allocations in adopted TMDLs for the Middle Santa River (MSAR) Watershed Bacteria Indicator, and the Big Bear Lake Nutrient TMDL for Dry Hydrological Conditions are included in this Order as Water Quality-Based Effluent Limitations (WQBELS). However, since the compliance dates of the adopted TMDLs are beyond the expected 5 year duration of this NPDES Permit, this Order requires the Permittees to establish BMP-based reduction goals and demonstrate through monitoring the effectiveness of the BMPs implemented in reducing the pollutants of concern.

3. RECEIVING WATER LIMITATIONS

Receiving water limitations are included to ensure that discharges from the MS4 systems do not cause or contribute to violations of applicable water quality standards in receiving waters. The compliance strategy for receiving water limitations is consistent with the USEPA and State Board guidance and recognizes the complexity of storm water management.

This Order requires the permittees to meet water quality standards in receiving waters in accordance with USEPA requirements, as specified in State Board Order No. WQ 99-05. If water quality standards are not met through implementation of BMPs, the permittees are required to re-evaluate the programs

and policies and propose more effective BMPs. Compliance determination will be based on this iterative BMP implementation/compliance evaluation process.

4. LEGAL AUTHORITY/ENFORCEMENT

The Permittees have adopted a number of ordinances, municipal codes, and other regulations to establish legal authority, control discharges to the MS4s and enforce these regulations as specified in 40 CFR 122.26(d)(2)(i)(A, B, C, E, and F). The Permittees are required to enforce these ordinances and to take enforcement actions against violators (40 CFR 122.26(d)(2)(iv)(B-D)).

The third term required the Permittees to establish the authority and resources to administer either civil or criminal penalties and/or penalties for violations of their local water quality ordinances. Although a few Permittees have imposed monetary penalties for repeated violations of its ordinances, program evaluations conducted during the third term permit showed that enforcement activities undertaken by a majority of the Permittees have consisted primarily of Notices of Violation (NOVs) that are mostly to educate the public on the environmental consequences of illegal discharges. In some cases, multiple NOVs and stop work orders were issued to the same facilities for recurring violations without progressive enforcement. In the case of San Bernardino County, additional action has sometimes included recovery of investigative and cleanup costs from the responsible party. In case of egregious or criminal violations, the option exists for referral to the County District Attorney for possible prosecution. The fourth term permit requires the Permittees to document and implement progressive and decisive enforcement actions, evaluate the effectiveness of their enforcement program and sanctions by tracking compliance and evaluating the amount of time to return to compliance. This Order also requires the Permittees to establish the authority to immediately abate discharges to its MS4s caused by unresponsive dischargers and recover its costs.

Since the 2006 ROWD identified bacteria as the highest priority pollutant for the permitted area, this Order requires the Permittees to promulgate ordinances that would specify control measures for known pathogen or bacterial sources, such as animal wastes, if those types of sources are present within their jurisdiction.

This Order requires the Permittees to include in the Local Implementation Plan (LIP) their legal authority and mechanisms to implement the various program elements required by this Order to properly manage, reduce and mitigate potential pollutant sources within each Permittee's jurisdiction. The LIP shall include citations of appropriate local ordinances, identification of departmental jurisdictions and key personnel in the implementation and enforcement of these ordinances. The LIP shall include procedures, tools and timeframes for progressive enforcement actions and procedures for tracking compliance.

5. ILLEGAL DISCHARGES / ILLICIT CONNECTIONS TO MS4s, LITTER DEBRIS AND TRASH CONTROL

Federal regulation, 40 CFR 122.26(d)(2)(iv)(B), requires the Permittees to eliminate illicit discharges to the MS4s. During the second term permit, the

Permittees completed a survey of the MS4 systems and eliminated or permitted all identified illicit connections. The Permittees have also established a program to address illegal discharges and a mechanism to respond to spills and leaks and other incidents of discharges to the MS4s. Program evaluations conducted during the third term permit showed that this program element is primarily complaint driven or an incidental component of municipal inspections or conveyance system inspections.

This Order requires the Permittees to develop a plan for each jurisdiction to conduct focused, systematic field investigations, outfall reconnaissance survey, indicator monitoring, and track their sources³¹. A proactive illicit discharge detection and elimination (IDDE) program shall be integrated with other program elements including: GIS mapping of the Permittees' conveyance systems to track sources, aerial photography, municipal inspection programs for construction, industrial, commercial, storm drain systems, municipal facilities, etc., watershed monitoring, public education and outreach, pollution prevention, stream restoration efforts, and rapid assessment of stream corridors to identify dry weather flows and illegal dumping.

6. SEWAGE SPILLS, INFILTRATION INTO MS4 SYSTEMS, SANITARY SEWER LINE LEAKS, SEPTIC SYSTEM FAILURES AND PORTABLE TOILET DISCHARGES

Federal regulation, 40 CFR 122.26(d)(2)(iv)(B)(4), requires the Permittees to develop procedures to prevent, contain, and respond to spills that may discharge into the MS4s. The Permittees have already developed a program to address various types of spills to the MS4s. This Order requires the Permittees to continue to implement the unified sewer response plans in collaboration with the local sanitation districts. To facilitate swift response actions, the Permittees are required to provide 24-hour access to MS4s to the sanitation districts. The Permittees should also work cooperatively with the local sanitation districts to determine if exfiltration from leaking sanitary sewer lines is causing or contributing to urban storm water pollution problems. In addition, the Permittees are required to control infiltration or seepage from sanitary sewers to the MS4s through routine preventive maintenance of the storm drain system (40 CFR 122.26(d)(2)(iv)(B)(7)). This Order also requires the Permittees to implement control measures and procedures to prevent, respond to, contain and clean up all sewage and other spills from sources such as portable toilets and septic systems.

On May 2, 2006, the State Board issued the Statewide General Waste Discharge Requirements for Sanitary Sewer Systems, Water Quality Order No. 2006-0003-DWQ (SSO Order) to address proper management and operation of sewer collection systems and to control sanitary sewer overflows. It requires dischargers/enrollees to develop and implement a written Sewer System Management Plan (SSMP) approved by the discharger's governing board and report sewer spills through an on-line reporting system. This Order requires the

³¹ Table 2: Land uses, Generating Sites and Activities that Produce Indirect Discharges from IDDE, A Guidance Manual for Program Development and Technical Assessments, October 2004 CWP.

Permittees to coordinate the review of the unified sewage spill response plan developed during the third term permit with the local sewerage agencies to make it consistent with the requirements of the SSO Order. This Order also requires each Permittee to include in its LIP the interagency or interdepartmental sewer spill response coordination and responsibilities.

The MS4 program audits indicated that a majority of the Permittees with septic systems have inadequate information with regard to the number and location of systems within their jurisdiction. This Order requires the Permittees to develop an inventory of septic systems within its jurisdiction and establish a program to ensure that septic system failure rates are minimized.

7. MUNICIPAL INSPECTION PROGRAM

Federal regulations, 40 CFR 122.26(d)(2)(iv)(A-D), require the Permittees to inventory, prioritize and inspect industrial, construction and commercial facilities. The third-term permit required the Permittees to inventory construction, industrial and commercial facilities within their jurisdiction and to prioritize them for inspection based on threat to water quality. The permit specified the frequency at which high, medium, low priority sites are to be inspected. During the third term permit, the Permittees proposed to develop a risk-based scoring system to prioritize facilities for inspections. Until approval of this risk-based prioritization system, the Permittees are required to prioritize facilities for inspection based on threat to water quality as specified in this Order.

An evaluation of the municipal inspection programs during the third term permit indicated certain deficiencies in the commercial, industrial and construction programs of some of the Permittees. In many instances, program documentation of progressive enforcement and facilities' return to compliance were not properly documented. This Order requires Permittees to document inspections and enforcement and evaluate the effectiveness of their inspection and enforcement program by tracking the time for facilities to return to compliance. During the third term permit, most of the Permittees utilized the MS4 Solutions Database to document their facility inventory, inspections and enforcement activities. This Order requires the Permittees to update the information in the MS4 Solutions Database or use an equivalent web accessible database on a regular basis. The Permittees who do not have an internet accessible database shall initiate quarterly reporting and update of the inventory, inspection and enforcement database for facilities within their jurisdiction.

In order to address discharges to the MS4s from residential sources, the fourth term permit requires the Permittees to develop and implement a residential program to prevent residential discharges from causing or contributing to a violation of water quality standards in the receiving waters (40 CFR 122.26(d)(2)(iv)(A)).

8. NEW DEVELOPMENT AND SIGNIFICANT REDEVELOPMENT

Federal regulation, 40 CFR 122.26(d)(2)(iv)(A)(2), requires the Permittees to develop a comprehensive master plan to address discharges from new and significant redevelopment projects. During the third term permit, the Permittees

revised their new development guidelines to address water quality and hydromodification impacts resulting from urbanization. A Water Quality Management Plan Guidance and Template was approved by the Regional Board in 2004 and amended in 2005. The Permittees were required to review and approve project-specific Water Quality Management Plans (WQMP) to address post-construction impacts. The WQMP should be designed to address water quality impacts, including hydrologic conditions of concern, from new and significant redevelopment projects through: (1) site design BMPs, including low impact development (LID) techniques; (2) source control BMPs; and (3) treatment control BMPs. This Order recognizes the importance of LID techniques to minimize the impact of urbanization on water quality. The fourth term permit requires the project proponents to infiltrate, harvest and reuse, evapotranspire, or bio-treat the volume of runoff from a 24-hour, 85th percentile storm event. The Order also provides alternatives and in-lieu programs for project sites where infiltration, harvesting and re-use, evapotranspiration and bio-treatment are not feasible.

Program evaluations conducted during the third term permit indicated a need for establishing a clear nexus between the watershed protection principles (including LID) and the planning and approval processes of the Permittees. This Order requires the Permittees to review and revise their Development Standards, Zoning Codes, Conditions of Approval, Development Project Guidance, ordinances, and other related documents to identify and eliminate barriers to incorporate watershed protection principles.

The Southern California Monitoring Coalition (SMC), including project lead agency, the San Bernardino County Flood Control District, in collaboration with SMC member, Southern California Coastal Water Research Project (SCCWRP) and the California Storm Water Quality Association (CASQA), is developing a Low Impact Development Manual for Southern California with funding from the State Water Resources Control Board, CASQA and other sources. This manual will be incorporated into the CASQA BMP Handbooks. The Permittees are encouraged to utilize the manual as a resource for proper LID design and implementation techniques.

Program evaluations have also shown deficiencies in the Permittees' inspection, and tracking of post-construction BMPs. This Order requires the Permittees to revise their close-out procedures to include field verification that site design, source control and treatment control BMPs are operational and consistent with the approved WQMP.

This Order incorporates new project categories and revised thresholds for several categories of new development and redevelopment projects that trigger the requirement for a WQMP. The 2008 National Research Council (NRC) report³² indicates that roads and parking lots constitute as much as 70% of total impervious cover in ultra-urban landscape, and as much as 80% of the directly connected impervious cover. Roads tend to capture and export more storm water pollutants than other impervious covers. As such, roads are included as a priority development category for which WQMPs are required. The NRC report also

³² National Research Council Report (2008), http://www.nap.edu/catalog.php?record_id=12465

indicates that there is a direct relationship between impervious cover and the biological condition of downstream receiving waters. The Permittees are required to address hydrologic conditions of concern from new development and significant redevelopment projects to minimize downstream impacts.

Consistent with a long term holistic approach to address water quality and hydromodification impacts resulting from urbanization, this Order requires Permittees to develop a Watershed Action Plan that integrates water quality, stream protection, storm water management and re-use strategies with land use planning policies, ordinances, and plans within each jurisdiction. These plans should address cumulative impacts of development on vulnerable streams, preserve or restore, consistent with the maximum extent practicable standard, the structure and function of streams, and protect surface and groundwater quality. The Order specifies that the Watershed Action Plan include strategies for addressing (303(d) listed waterbodies with adopted TMDLs with or without implementation plans as well as those impaired water bodies without a TMDL. For those 303(d) listed waterbodies without a TMDL, the Permittees are required to include in the Watershed Action Plan BMPs to control and monitor the discharge of the pollutants causing the impairment and minimize the impact of urbanization on water quality and hydrologic regime. The Permittees are also required to participate in the TMDL development and implementation.

9. PUBLIC AND BUSINESS EDUCATION AND OUTREACH PROGRAMS

Federal regulation, 40 CFR 122.26(d)(iv), requires the Permittees to develop a comprehensive storm water management plan with public participation and 40 CFR 122.26(d)(iv)(B)(6) requires the Permittees to engage in outreach activities to facilitate the proper management of pollutants. Public outreach is an important element of the overall urban pollution prevention program. The Permittees have implemented a strategic and comprehensive public education program to preserve and enhance the quality of receiving waters. The Principal Permittee has taken the lead role in the outreach programs and has targeted various groups including businesses, industry, commercial enterprises, developers, utilities, environmental groups, institutions, homeowners, school children, and the general public. The Permittees have developed a number of educational materials, have established a storm water pollution prevention hotline and website, started an advertising and educational campaign, and distribute public education materials at a number of public events. The Permittees are required to continue these efforts and to expand their public participation and education programs by participating in joint outreach programs with other agencies including, but not limited to, the SWQSTF, Caltrans, and other municipal storm water programs.

This Order also requires the Permittees to develop and distribute fact sheets/BMPs to address sources from residential sources such as: (1) auto washing and maintenance activities; (2) use and disposal of pesticides, herbicides, fertilizers and household cleaners; and (3) collection and disposal of pet wastes.

The Permittees are required to review their public education and outreach efforts and revise these activities, if necessary, to address public outreach needs.

Federal regulation, 40 CFR 122.26(d)(v), requires the Permittees to conduct a program assessment to determine the reduction in pollutant loadings due to urban storm water runoff management programs. Each Permittee is required to implement an assessment program, guided by the CASQA Program Effectiveness Guidance manual.

10. MUNICIPAL FACILITIES AND ACTIVITIES

Federal regulation, 40 CFR 122.26(d)(iv)(A), requires the Permittees to ensure that public agency activities and facilities do not cause or contribute to violations of water quality standards in receiving waters. The third term permit incorporated performance commitments in the ROWD to prevent public agency facilities and activities from causing or contributing to a pollution or nuisance in receiving waters. The Permittees were also required to develop and distribute BMP fact sheets for various public agency activities. The third term permit also specified minimum requirements for street sweeping and inspection and maintenance of drainage facilities. Permittee as well as contract staff that perform public agency activities were required to be properly trained.

Program evaluations conducted during the third term permit indicated varying degrees of compliance at public agency facilities and activities. This Order requires each Permittee to inventory its fixed facilities, field operations and drainage facilities to ensure that public agency facilities do not cause or contribute to a pollution or nuisance in receiving waters. These facilities and field operations are to be prioritized for inspection according to threat to water quality.

Fixed public facilities and field operations include, but are not limited to, public streets and roads, parking facilities, fire training facilities, flood management and conveyance systems, POTWs and sanitary sewage collection systems, solid waste transfer facilities, land application sites, corporate yards, maintenance and storage yards, household hazardous waste collection facilities, municipal airfields, recreational facilities, and special event or festival venues. The Permittees are required to include in their local implementation plan procedures and schedules for inspections and maintenance of public agency facilities and activities.

11. MUNICIPAL CONSTRUCTION PROJECTS

The third term permit authorized the discharge of storm water from construction activities on one acre or more that are under ownership or direct responsibility of the Permittees. The Permittees were required to notify the Executive Officer prior to commencement of construction activities, and to comply with the substantive requirements of the latest Statewide General Construction Activities Storm Water Permit.

Program evaluations conducted during the third term permit indicated that some of the Permittees were not submitting or were not aware of the requirement to submit a Notice of Intent and a Notice of Completion for municipal construction projects.

This Order continues the requirement of the third term permit and builds upon it by requiring Permittees to include post-construction BMP information for municipal projects along with the Notice of Termination submitted to the Executive Officer upon completion of the construction activity. The Notice of Termination must include photographs of the completed project, a location map, structural post-construction BMP location, field verification report and long term operation and maintenance responsibility. The Permittees are required to develop a database of post-construction BMPs for which the Permittees are responsible and shall reference this database in the local implementation plans.

Emergency public work projects required to protect public health and safety are exempted from these requirements, until the emergency ends, at which time they need to comply with the requirements.

12. TRAINING PROGRAM FOR STORM WATER MANAGERS, PLANNERS, INSPECTORS, AND MUNICIPAL CONTRACTORS

Education of municipal planning, inspection, and maintenance staff is critical to ensure that land use decisions, local permit approvals and municipal facilities and activities do not cause or contribute to an exceedance of receiving water quality standards. During the third term permit, the Permittees developed a web-based training program to provide better access to specific training elements. The Municipal Activities Pollution Prevention Strategy (MAPPS) online-training program addressed BMPs for public agency facilities and activities.

This Order requires the Permittees to define the necessary expertise and competencies for various job functions involved in the implementation of the areawide and local storm water programs and to develop an appropriate curriculum. The Permittees are required to conduct the training program for field operations and municipal inspection staff, for storm water managers, and for those involved in the review and approval of WQMPs and CEQA documents. The training curriculum should address the need for interdepartmental collaboration and communication to address issues related to storm water pollution controls.

13. MONITORING AND REPORTING REQUIREMENTS

Prior monitoring programs conducted by the Permittees consisted of drainage area characterization, BMP evaluation, storm water, and receiving water monitoring. These early programs focused on identifying pollutants, estimating pollutant loads, tracking compliance with water quality objectives, and identifying sources of pollutants. The San Bernardino County monitoring program, as well as other monitoring programs nationwide, has shown that there is a high degree of uncertainty in the quality of storm water runoff and that there are significant variations in the quality of urban runoff spatially and temporally. However, most of the monitoring programs to date have indicated that there are a number of pollutants in urban storm water runoff. A definite link between pollutants in urban runoff and beneficial use impairments has been established at least in a few studies.

To date, wet weather monitoring has shown elevated pollutant concentrations at monitoring Sites 2, 3 and 5. Monitoring Site 2 is located 400 feet south of Freeway 60, west of Archibald Avenue, on the east side of Cucamonga Creek Channel, in the City of Ontario. Land use within this drainage area is primarily commercial and industrial. Site No. 3 is located at Hellman Avenue, between Pine Avenue/Schleisman Road and Chino-Corona Road/Chandler Street, 75 feet east of Hellman Avenue bridge on the south side of Cucamonga Creek Channel near the City of Chino on the San Bernardino County/Riverside County line. This site is mainly agricultural. Site No. 5 is located in the Hunts Lane access road north of Hospitality Lane, within a manhole located in the asphalt parking lot behind the Souplantation Restaurant in the City of San Bernardino. This site receives flows from predominantly restaurants and other businesses in the area. Using wet weather monitoring data from 1994-99, the 2000 ROWD identified Site 5 to have the highest average concentration for BOD, copper, zinc, and TSS while Site 3 has the highest average concentrations for nitrate and phosphorus. First flush data from the 1999-2000 monitoring events showed elevated levels consistent with prior years' data for Sites 2, 3, and 5. During the third term permit, a Pollutant Source Investigation and Control Plan³³ was developed and implemented to investigate elevated pollutant concentrations of coliform bacteria, zinc, copper and lead at Site 5. This Order requires continued implementation of the plan, including annual reporting and BMP effectiveness evaluation for the Site 5 drainage area. This Order also requires the Permittees to continue first flush monitoring at storm drain monitoring Sites 2, and 3 to refine source identification and control techniques. Some of these efforts may be blended into the Watershed Action Plan that is required under the proposed Order.

The Principal Permittee conducted an analysis of the receiving water monitoring data collected during the last 15 years for a number of monitoring sites (Sites 2, 3, 8³⁴, and 10³⁵). This analysis indicated that the most significant water quality problem associated with urban storm water runoff is bacterial contamination. It also showed that Basin Plan objectives for metals such as lead, copper, and zinc³⁶ are exceeded more frequently than USEPA benchmarks. The Permittees monitoring data were then compared to monitoring data available from other sources (NAWQA, RWQCB 305(b) Assessment, etc.) to determine beneficial use impacts and pollutants causing the impacts. This analysis was then used to prioritize problem areas and to propose a risk-based approach to address these problems. Based on the evaluation of monitoring data, the ROWD prioritized the pollutants of concern with regards to storm water management as follow:

- a. High Priority: Coliform bacteria
- b. Medium Priority: Zinc, copper, lead
- c. Low Priority: Nutrients, COD, TSS

³³ 2005-2006, 2006-2007, 2007-2008 Annual Reports

³⁴ Site 8 station is located in the Santa Ana River (SAR) at Hamner Avenue, runoff is mostly from urban land uses.

³⁵ Site 10 station is located at SAR, upstream of Seven Oaks Dam, runoff is mostly from open/rural areas.

³⁶ There is no Basin Plan objective for zinc, USEPA benchmark is 0.117 mg/l.

With the adoption of the Middle Santa Ana River Bacterial Indicator TMDL, this Order requires the Permittees to establish BMP-based reduction goals and initiate pre-compliance monitoring to demonstrate the effectiveness of the BMPs implemented in reducing bacteria to meet the WLAs by the compliance dates. Since the compliance dates for the Big Bear Lake nutrient TMDL for Dry Hydrologic Conditions are also outside the five year term of this NPDES permit, a similar pre-compliance monitoring is required for nutrient TMDL.

The Order also requires the Permittees to participate in monitoring programs to support TMDL development and implementation. The Permittees are also participating in several other monitoring-related activities, including Comparative Evaluation of Microbial Source Tracking Techniques, Model Monitoring Program Guidance, Peak Flow Study, and Laboratory Inter-Calibration. Under the auspices of the Storm Water Monitoring Coalition, Southern California Coastal Water Research Project prepared "Model Monitoring Program for Municipal Separate Storm Sewer Systems in Southern California", August 2004 Technical Report No. 419. This report noted, ".the lack of mass emissions stations in the inland counties hampers their ability to estimate the proportional contribution of these inland areas to cumulative loads downstream." The coalition consists of representatives from the Counties of Ventura, Los Angeles, Long Beach, Orange, San Bernardino, Riverside, and San Diego. An integrated Watershed Monitoring Plan should address any shortcomings in the overall monitoring programs and avoid duplicative efforts within the same watershed.

During the second and third term permits, there was an increased focus on watershed management initiatives and coordination among the municipal permittees in Orange, Riverside and San Bernardino Counties. The Permittees participated in a number of regional monitoring programs and other coordinated program and policy developments, such as the Regional Integrated Freshwater Bioassessment Monitoring Program, and the BMP Effectiveness Assessment. The Principal Permittee continues to be an active participant in the Storm water Quality Standards Task Force (SWQSTF), the Big Bear Lake Nutrient TMDL and Middle Santa Ana River (MSAR) Bacterial Indicator TMDL, the San Antonio Canyon Watershed Group, and the Storm water Monitoring Coalition.

This Order requires the Permittees to continue their participation in these watershed coordination efforts. The third term permit required the Permittees to initiate bioassessment monitoring. To allow for a holistic approach, this Order requires the Permittees to participate in the Regional Integrated Freshwater Bioassessment Monitoring Program in lieu of a separate bioassessment monitoring program for the permitted area.

This Order requires the Permittees to re-evaluate their Water Quality Monitoring Program Guidance and Template and submit a revised plan for approval. The revised integrated watershed monitoring program should integrate the goals and objectives of the Watershed Action Plan and rectify data gaps from previous monitoring efforts.

X. WATER QUALITY BENEFITS/COST ANALYSIS/FISCAL ANALYSIS

There are direct and indirect benefits from clean beaches, clean water, and clean environment. It is difficult to assign a dollar value to the benefits the public derives from fishable and swimmable waters. In 1972, at the start of the NPDES program, only 1/3 of the U.S. waters were swimmable and fishable. In 2008, more than 2/3 of the U.S. waters meet these criteria. In the November 1999 "*Money*" magazine survey of the "Best Places to Live," clean water and air ranked as two of the most important factors in choosing a place to live. Thus, environmental quality has a definite link to property values. Clean lakes and beaches and other water recreational facilities also attract tourists.

The true magnitude of the urban runoff problem is still elusive and any cost estimate for cleaning up urban runoff would be premature short of end-of-pipe treatments. For urban storm water runoff, end-of-pipe treatments are cost prohibitive and are not generally considered as a technologically feasible option. Over the last decade, the Permittees have attempted to define the problem and implemented best management practices to combat the problem. The costs incurred by the Permittees in implementing these programs and policies are included in the annual reports.

The area-wide program is funded by the Permittees. The Principal Permittee prepares an annual budget for the Management Committee. The Principal Permittee allocates 95 percent of the approved budget costs to the co-permittees based on percentage calculated using the cost allocation formula defined in the Implementation Agreement.

The costs incurred by the Permittees in implementing these programs and policies can be divided into two broad categories (the costs indicated below are for the entire San Bernardino County storm water program):

1. Shared costs: These are costs that fund activities performed mostly by the Principal Permittee under the Implementation Agreement. These activities include overall storm water program coordination; intergovernmental agreements; representation at the California Storm Water Quality Association, Regional Board/State Board meetings and other public forums; preparation and submittal of compliance reports and other reports required under the NPDES permits and Water Code Section 13267, budget and other program documentation; coordination of consultant studies, co-permittee meetings; training seminars, water quality monitoring, and Countywide public education and outreach. Actual area-wide storm water program expenditures have increased from \$571,000 for FY 1995-96 (2nd term) to \$1,593,000 in FY 2006-07 (3rd term). During the third-term permit there has been an increase of about 15%/year from 2002-2007 in these program expenses. The Storm Water Program had allocated a budget of \$1,735,500 for FY 2007-08 and proposed a budget of \$1,765,500 for FY 2008-2009³⁷. Below is a breakdown of the expenditure items and the corresponding percentage weight in the total budget.

The permittees identified the following budget for Fiscal Year (2008-2009):

³⁷ San Bernardino County Storm water Program, Annual Report for Reporting Year (Fiscal Year) July 2007-June 2008, Nov 2008.

EXPENDITURE ITEMS	AMOUNT (\$)	PERCENTAGE
Public Education Program	300000	18.69
Big Bear Lake TMDL	250,000	15.58
Administration	170,000	10.59
Chino Basin TMDL Implementation (Middle Santa Ana River)	160,000	9.97
MS4 Database Development	150,000	9.35
Storm Water Quality Standards Study (SAWPA)-Phase 3	150,000	9.35
Monitoring Program	100,000	6.23
Training	100,000	6.23
Participation in Regional Monitoring Program (SCCWRP)	70,000	4.36
Annual Report Preparation	50,000	3.12
Consultant Costs,	30,000	1.87
Participation in Statewide Storm Water Issues (CASQA),	30,000	1.87
HCOG Map and Documentation	25,000	1.56
Permit Renewal Tasks	20,000	1.25
Subtotal	1,605,000	
Approved Reserved Fund (2007-08)	160,500	
Total Budget	1,765,000	

- Individual Costs for ROWD/MSWMP Implementation for the third term permit: These are costs incurred by each Permittee for implementing programs that complement the NPDES program by reducing the potential for pollutants to enter the storm drain system. Most of these programs existed prior to the MS4 program and these include: (1) street sweeping; (2) hazardous waste collection and recycling; and (3) storm drain and other municipal facilities maintenance. The MSWMP required additional programs and policies to ensure that these activities were not a significant contributor of pollutants to the MS4s and the receiving waters. In 2006/07, the Permittees determined their total Individual Costs for these programs to be \$60.138 million.

Funding sources for the Storm Water Program for individual permittees are General Funds, capital funds, storm drain fees, sewer funds, storm water management fees,

development fees, licensing fees, plan check fees, NPDES construction inspection fees, business license fees, gas tax, utility tax, solid waste funds, and others.

XI. ANTIDegradation Analysis

The Regional Board has considered whether a complete antidegradation analysis, pursuant to 40 CFR 131.12 and State Board Resolution No. 68-16, is required for the storm water discharges. The Regional Board finds that the pollutant loading rates to the receiving waters will be reduced with the implementation of the requirements in this Order. As a result, the quality of storm water discharges and receiving waters will be improved, thereby improving protection for the beneficial uses of waters of the United States. Since this Order will not result in a lowering of water quality, a complete antidegradation analysis is not necessary, consistent with the federal and state antidegradation requirements.

XII. PUBLIC WORKSHOPS

The Regional Board recognizes the significance of San Bernardino County's Storm Water/Urban Runoff Management Program and will conduct, participate, and/or assist with any workshop during the term of this permit to promote and discuss the progress of the storm water management program. Details of the workshops will be posted on the Regional Board's website, published in local newspapers and/or mailed to interested parties. Persons wishing to be included in the mailing list for any of the items related to this Order may register their name, mailing address and phone number with the Regional Board office at the address given below.

The first public workshop on the proposed Order is scheduled as follows:

Date and time: July 10, 2009; meeting starts at 9:00 a.m.

Location: Orange County Sanitation District
10844 Ellis Avenue
Fountain Valley, CA 92708

XIII. PUBLIC HEARING

The Regional Board will hold a public hearing regarding the proposed waste discharge requirements during the second half of 2009. Further information regarding the conduct and nature of the public hearing concerning these waste discharge requirements may be obtained by writing or visiting the Santa Ana Regional Board office, 3737 Main Street, Suite 500, Riverside, CA 92501-3339. This and other information are also available at the website at: www.waterboards.ca.gov/santaana.

XIV. INFORMATION AND COPYING

Persons wishing further information may write to the above address or call Maria Macario at (951) 321-4583 or email at mmacario@waterboards.ca.gov. Copies of the application, proposed waste discharge requirements, and other documents (other than those which the Executive Officer maintains as confidential) are available at the

Regional Board office for inspection and copying by appointment scheduled between the hours of 8:30 a.m. and 4:00 p.m., Monday through Friday (excluding holidays).

XV. REGISTER OF INTERESTED PERSONS

Any person interested in a particular application or group of applications may leave his/her name, address, and phone number as part of the file for an application. Copies of tentative waste discharge requirements will be mailed to all interested parties.

E-mail registration:

http://www.waterboards.ca.gov/resources/email_subscriptions/reg8_subscribe.shtml

In addition to the permittees, comments were solicited from the following agencies and/or persons:

Government Agencies

- U. S. Environmental Protection Agency – John Kemmerer/Eugene Bromley (W-5-1)
- US Army District, Los Angeles, Corps of Engineers - Permits Section
- NOAA, National Marine Fisheries Service
- US Fish and Wildlife Service – Carlsbad
- U.S. Department of Agriculture - Forest Services, San Bernardino County National Forest
- California Department of Transportation (Cal Trans), District 8, Paul Lambert
- California Department of Parks and Recreation - Chino Hills State Park
- Inland Valley Development Agency, San Bernardino International Trade Center and Airport
- State Water Resources Control Board – David Rice, Office of the Chief Counsel
- State Water Resources Control Board – Bruce Fujimoto, Division of Water Quality
- State Department of Water Resources - Glendale
- California Regional Water Quality Control Board, North Coast Region (1) – Executive Officer
- California Regional Water Quality Control Board, San Francisco Bay Region (2) - Executive Officer
- California Regional Water Quality Control Board, Central Coast Region (3) - Executive Officer
- California Regional Water Quality Control Board, Los Angeles Region (4) - Executive Officer
- California Regional Water Quality Control Board, Central Valley Region (5S) - Executive Officer
- California Regional Water Quality Control Board, Central Valley Region (5R) – Assistant Executive Officer
- California Regional Water Quality Control Board, Central Valley Region (5F) – Assistant Executive Officer
- California Regional Water Quality Control Board, Lahontan Region (6SLT) - Executive Officer
- California Regional Water Quality Control Board, Lahontan Region (6V) – Assistant Executive Officer
- California Regional Water Quality Control Board, Colorado River Basin Region (7) - Executive Officer

California Regional Water Quality Control Board, San Diego Region (9) - Executive Officer
California Department of Fish and Game - Ontario
California Department of Public Health – San Bernardino
California Department of Parks and Recreation - Perris
South Coast Air Quality Management District - Diamond Bar
Riverside County Flood Control District – Jason Uhley
Orange County Public Works Department - Chris Crompton/Richard Boone

Interested Parties

AEI/CASC – Jeff Endicott
URS/Greiner - Bob Collacott
Building Industry Association –Mark Grey
Latham & Watkins – Paul Singarella/Shirin Zandipour
Best, Best, and Krieger
Southern California Association of Governments (SCAG), Los Angeles
San Bernardino Associated Governments (SANBAG)
Santa Ana Watershed Project Authority - Celeste Cantu
Inland Empire West Resource Conservation District - General Manager

Universities and Colleges (Chancellor)

California State University - California State University San Bernardino
San Bernardino Community College District - Chaffey College Campus
San Bernardino Community College District - Crafton Hills College Campus
San Bernardino Community College District - San Bernardino Valley College Campus
University of Redlands
Loma Linda University

School Districts (Superintendent)

Alta Loma Elementary School District
Bear Valley Unified School District
Central Elementary School District
Chaffey Joint Union High School District
Chino Valley Unified School District
Colton Joint Unified School District
Cucamonga Elementary School District
Etiwanda Elementary School District
Fontana Unified School District
Mountain View Elementary School District
Mt. Baldy joint Elementary School District
Ontario-Montclair Elementary School District
Rialto Unified School District
Rim of the World Unified School District

Redlands Unified School District
San Bernardino City Unified School District
Upland Unified School District
Yucaipa Joint Unified School District

Hospitals (Administrator)

Bear Valley Community Hospital
Chino Community Hospital
Doctors Hospital
Kaiser Foundation Hospital
Loma Linda Community Hospital
Loma Linda University Medical Center
Mountains Community Hospital
Ontario Community Hospital
Patton State Hospital
U.S. Department of Veterans Affairs - Jerry L. Pettis Memorial Veterans Medical Center
Redlands Community Hospital
St. Bernardine Medical Center
San Antonio Community Hospital
San Bernardino Community Hospital
San Bernardino County Hospital

Environmental Organizations

Lawyers for Clean Water – Daniel Cooper
Orange County Coastkeeper – Garry Brown
Inland Empire Waterkeeper - Autumn DeWoody
Defend the Bay – Bob Caustin
Sierra Club, San Geronimo Chapter
Natural Resources Defense Council (NRDC) – David Beckman/Bart Lounsbury
Cousteau Society
Audubon Sea & Sage Chapter

Newspapers

Press Enterprise
Inland Valley Daily Bulletin
Big Bear Grizzly
Chino-Chino Hills Champion Newspapers
Fontana Herald News
Highland Community News
Redlands Daily Facts
San Bernardino Sun
Los Angeles Times
Orange County Register

Railroads

AT&SF Railway Company
Southern Pacific Railroad Company

Water Districts (General Manager)

Big Bear Municipal Water District
Inland Empire Utilities Agency
Cucamonga County Water District
East Valley Water District
Monte Vista Water District
San Bernardino Valley Municipal Water District
West San Bernardino County Water District
Yucaipa Valley Water District Orange County Water District
Metropolitan Water District
Western Municipal Water District
Orange County Water District

Attachment 7: Notices of Intent and Termination