

**FACT SHEET/STAFF REPORT**  
**FOR THE**  
**COUNTY OF LOS ANGELES**  
**MUNICIPAL SEPARATE STORM SEWER SYSTEM**  
**NPDES PERMIT (CAS004001)**  
**ORDER No. R4-2011-XXX**

**April 7, 2011**

Los Angeles Regional Water Quality Control Board

## TABLE OF CONTENTS

<b>I. PURPOSE.....</b>	<b>3</b>
A. FACT SHEET/STAFF REPORT .....	3
B. PROPOSED PERMIT .....	3
<b>II. INTRODUCTION - THE NEED TO REGULATE DISCHARGES FROM MS4S .....</b>	<b>4</b>
A. IMPACTS .....	4
B. BENEFITS OF PERMIT PROGRAM IMPLEMENTATION .....	7
<b>III. STATUTORY AND REGULATORY HISTORY OF THE STORM WATER PROGRAM .....</b>	<b>8</b>
A. BASIS FOR PERMIT CONDITIONS .....	8
B. PUBLIC REVIEW AND PARTICIPATION PROCESS .....	9
<b>IV. BACKGROUND - LOS ANGELES COUNTY MS4.....</b>	<b>9</b>
A. LOS ANGELES COUNTY MS4 PERMIT HISTORY .....	9
B. LITIGATION HISTORY .....	11
C. LOS ANGELES COUNTY STORM DRAIN SYSTEM .....	13
D. SUMMARY OF WATER QUALITY ISSUES IN LOS ANGELES COUNTY WATERSHEDS .....	14
E. TOTAL MAXIMUM DAILY LOADS (TMDLS) .....	16
<b>V. DISCUSSION OF SPECIAL PROVISIONS.....</b>	<b>18</b>
A. PUBLIC INFORMATION AND PARTICIPATION PROGRAM (PIPP) .....	18
B. INDUSTRIAL/COMMERCIAL FACILITIES PROGRAM .....	20
C. CONSTRUCTION SITES PROGRAM .....	25
D. ILLICIT CONNECTIONS AND ILLICIT DISCHARGES ELIMINATION PROGRAM .....	27
E. PUBLIC AGENCY ACTIVITIES PROGRAM .....	30
F. NEW DEVELOPMENT AND SIGNIFICANT REDEVELOPMENT PROGRAM.....	32
<b>VI. MONITORING PROGRAM.....</b>	<b>37</b>

## **I. PURPOSE**

### **A. Fact Sheet/Staff Report**

The purpose of this Fact Sheet/Staff Report is to give the Permittees and interested parties an overview of the final NPDES municipal separate storm sewer system (MS4) permit for the County of Los Angeles and the incorporated cities therein (except Long Beach), adopted on April 7, 2011, as well as to provide the technical basis for the permit requirements. Sections I through IV describe water quality problems from storm water and urban runoff, and permit conditions to address these problems. Sections V and VI discuss each major element of the Permittees' Storm Water Quality Management Plan (SQMP), and are meant to be used as a companion reference document to the permit.

### **B. Proposed Permit**

This proposed permit would be issued for a limited-term of 18 months. (See 40 CFR §122.46(c)). The purpose of issuing a limited-term permit is to reincorporate the previously voided provisions implementing the Santa Monica Bay Dry Weather Bacteria TMDL (SMB Dry Weather Bacteria TMDL) summer dry weather WLA that were required to be voided and set aside in Order No. 01-182 by the Los Angeles Superior Court, as described in IV.B. below. While federal law requires permits to contain effluent limitations consistent with the assumptions and requirements of any available wasteload allocation (40 CFR § 122.44(d)(1)(vii)(B)), staff believes that it is inappropriate to delay reincorporation of the SMB Dry Weather Bacteria TMDL related provisions until such time as an updated MS4 permit is developed and adopted. Compliance with the SMB Dry Weather Bacteria TMDL was supposed to have been achieved by July 15, 2006. Over four years later, compliance has not been achieved. As a result, exceedances of bacteria objectives continue at Santa Monica beaches posing health risks to millions of beachgoers. Thus, staff believes that the SMB Dry Weather Bacteria TMDL provisions should be immediately reincorporated into the proposed permit prior to the start of this upcoming summer season

With the exception of certain modified or new findings to reflect existing facts or law, and new findings or definitions to support provisions related to TMDL implementation, the proposed permit contains the same substantive requirements that this Regional Board imposed in 2001 when it adopted Order No. 01-182, as well as amendments to Order No. 01-182 adopted in 2006, 2007, and 2009. While Order No. R4-2006-0074 was ultimately voided and set aside, the Permittees in the Santa Monica Bay watershed were required to comply with the requirements of that amendment for approximately 4 years until such time as those provisions were voided. Thus, the proposed permit does not require the Permittees to comply with any new requirements that it has not already been required to comply with in the past.

During the length of the proposed permit, staff of the Regional Board will continue to diligently work on development of an updated MS4 permit(s), which

will incorporate conditions consistent with the assumptions and requirements of all available and applicable Total Maximum Daily Loads (TMDLs) adopted by this Regional Board or by the United States Environmental Protection Agency (USEPA). The proposed permit requires the Permittees to submit updated Reports of Waste Discharge (ROWD) well in advance of the expiration date of the proposed permit so that staff of the Regional Board has adequate time to review the submitted ROWDs, as well as be able to use the information in the new ROWDs to develop the updated MS4 permit(s). Regional Board adoption of an updated MS4 permit(s) is expected to occur in late 2012.

## II. INTRODUCTION - THE NEED TO REGULATE DISCHARGES FROM MS4s

### A. Impacts

The quality of storm water and urban runoff is fundamentally important to the health of the environment and the quality of life in Southern California. Polluted storm water and urban runoff is a leading cause of water quality impairment in the Los Angeles Region. Storm water and urban runoff (during dry and wet weather) are often contaminated with pesticides, fertilizers, fecal bacteria and pathogens, trash, automotive byproducts, and many other toxic substances generated by activities in the urban environment. Water that flows over streets, parking lots, construction sites, and industrial, commercial, residential, and municipal areas carries these untreated pollutants through the storm drain network directly into the receiving surface waters of the Region. The water quality impacts and increased public health risks from Municipal Separate Storm Sewer System (MS4) discharges that affect receiving waters nationwide and Los Angeles County and its coastline are well documented.

The **National Urban Runoff Program** (NURP) Study (USEPA 1983) showed that MS4 discharges draining from residential, commercial, and light industrial areas contain significant loadings of total suspended solids and other pollutants. Although the NURP Study did not cover industrial sites, the study suggested that runoff from industrial sites may have significantly higher contaminant levels than runoff from other urban land use sites. Several studies tend to support this observation, for e.g., the City of Fresno, California, a NURP project site, industrial areas there had the poorest storm water quality of the four land-uses evaluated. The study found that pollutant levels from illicit discharges were high enough to significantly degrade receiving water quality, and threaten aquatic life, wildlife, and human health. The general findings and conclusions of the NURP Study are reiterated in the more recent 2008 National Research Council report "Urban Runoff Management in the United States".

The 1992, 1994, and 1996 National Water Quality Inventory Reports to Congress prepared by USEPA showed a trend of impairment in the Nation's waters from contaminated storm water and urban runoff. The 2004 National Water Quality Inventory (305(b) Report)<sup>1</sup> showed that urban runoff/storm water discharges contributes to the impairment of 22,559 miles of streams, the impairment of 701,024 acres of lakes, and the impairment of 867 square miles of estuaries in the United States. The Natural Resources Defense Council (NRDC) 1999 Report, "**Stormwater Strategies**,

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<sup>1</sup> *National Water Quality Inventory Report to Congress, 2004 Reporting Cycle*

**Community Responses to Runoff Pollution**<sup>2</sup> identifies two main causes of the storm water pollution problem in urban areas. Both causes are directly related to development in urban and urbanizing areas:

1. Increased volume and velocity of surface runoff. There are three types of human-made impervious covers that increase the volume and velocity of runoff: (i) rooftop, (ii) transportation imperviousness, and (iii) non-porous (impervious) surfaces. As these impervious surfaces increase, infiltration will decrease, forcing more water to run off the surface, picking up speed and pollutants.
2. The concentration of pollutants in the runoff. Certain activities, such as those from industrial sites, are large contributors of pollutant concentrations to the storm water system.

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

Studies conducted by the **United States Geological Survey (USGS)**<sup>3</sup> confirm the link between urbanization and water quality impairments in urban watersheds due to contaminated storm water runoff.

Furthermore, the water quality impacts of urbanization and urban storm water discharges have been summarized by several other recent USEPA reports.<sup>4</sup> Urbanization causes changes in hydrology and increases pollutant loads which adversely impact water quality and impair the beneficial uses of receiving waters. Increases in population density and imperviousness result in changes to stream hydrology including:

- a) increased peak discharges compared to predevelopment levels;
- b) increased volume of storm water runoff with each storm compared to pre-development levels;
- c) decreased travel time to reach receiving water; increased frequency and severity of floods;
- d) reduced stream flow during prolonged periods of dry weather due to reduced levels of infiltration;
- e) increased runoff velocity during storms due to a combination of effects of higher discharge peaks, rapid time of concentration, and smoother hydraulic surfaces from channelization; and

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<sup>2</sup> *Clean Water & Oceans: Water Pollution: In Depth Report Stormwater Strategies, Community Responses to Runoff Pollution*. Natural Resources Defense Council (NRDC), 1999.

<sup>3</sup> *Water Quality in the Puget Sound Basin, Washington and British Columbia, 1996-98*, Circular 1216 - USGS 2000; *Water Quality in the Long Island-New Jersey Coastal Drainages, New Jersey and New York, 1996-98*, Circular 1201 - USGS 2000

<sup>4</sup> *Storm Water Phase II Report to Congress* (USEPA 1995); Report to Congress on the Phase II Storm Water Regulations (USEPA 1999); Coastal Zone Management Measures Guidance (USEPA 1992); *Urban Runoff Management in the United States* (NRC 2008).

- f) decreased infiltration and diminished groundwater recharge.

The Los Angeles County MS4 program has conducted monitoring to:

1. quantify mass emissions for pollutants;
2. identify critical sources for pollutants of concern in storm water;
3. evaluate BMP effectiveness; and
4. evaluate receiving water impacts, including impacts to tributaries.

The monitoring indicates that instream concentrations of pathogen indicators (fecal coliform and streptococcus), heavy metals (such as Pb, Cu, Zn,) and pesticides (such as diazinon) exceed state and federal water quality criteria.<sup>5</sup> The mass emissions of pollutants to the ocean are significant from the urban WMAs such as the Los Angeles River WMA, Ballona Creek WMA, and Coyote Creek WMA, with the Los Angeles River WMA providing more than seventy percent of the loadings. Critical source data for facilities (such as auto-salvage yards, primary metal facilities, and automotive repair shops) show that total and dissolved heavy metals (Pb, Cu, Zn, and Cd), and total suspended solids (TSS) exceeded state and federal water quality criteria by as much as two orders of magnitude. The results are consistent with a limited term study conducted by the Regional Board to characterize storm water runoff in the Los Angeles region in 1988 before the issuance of first MS4 permit.<sup>6</sup> Storm water runoff data from predominant land uses in Los Angeles County showed similar patterns. Light industrial, commercial and transportation land uses showed the highest range of exceedances. A pesticide (diazinon) was detected in higher concentrations from residential land use. The data for polycyclic aromatic hydrocarbons (PAHs), a known pollutant of concern in urban storm water runoff, is inconclusive but improved analytical methods may yield more definitive results in the future. Receiving water impacts studies found that storm water discharges from urban watersheds exhibit toxicity that are attributable to heavy metals. Biosurveys of the benthic communities showed bioaccumulation of toxicants. Sediment analysis showed higher concentrations of pollutants, such as Pb and PAHs, in urban watersheds than in rural watersheds (2 to 4 times higher). In addition, toxicity of dry weather flows was observed with the cause of toxicity undetermined.<sup>7</sup> Other studies have found chemical concentration of pollutants that exceed state and federal water quality criteria in storm drains flowing to the ocean during dry weather,<sup>8</sup> and that there are adverse health impacts from swimming near them.<sup>9</sup>

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<sup>5</sup> *Los Angeles County 1998-1999 Storm Water Monitoring Report*, Los Angeles County Department of Public Works (1999). Data summarizes results of storm water monitoring for the most recent year and the past five years.

<sup>6</sup> *Storm Water Runoff in Los Angeles and Ventura Counties, Final Report* (1988), California Regional Water Quality Control Board, Los Angeles, SCCWRP Contribution C292. This study found the highest mean concentrations of pollutants of concern such as heavy metals in the urban watershed rivers and that they contributed significant loads to the ocean.

<sup>7</sup> *Toxicity of Dry Weather Flow from the Santa Monica Bay Watershed*, Bay, S. et al. (1996), Bull. Southern California Acad. Sci. 5(1), pp. 33-45. The paper describes preliminary results on dry weather toxicity, which have been confirmed by the MS4 monitoring program.

<sup>8</sup> *Chemical Contaminant Release into Santa Monica Bay, Final Report*, American Oceans Campaign, Santa Monica (1993)

<sup>9</sup> *The Health Effects of Swimming in Ocean Water Contaminated by Storm Drain Runoff*, Haile, R.W. et al. (1999), Epidemiology 10: 355-363). The study found higher risks of respiratory and gastrointestinal symptoms in swimmers who recreated near storm drain outfalls.

## B. Benefits of Permit Program Implementation

Implementation of the MS4 permit requirements will significantly reduce pollutants in urban storm water in a cost-effective manner. Implementation of Best Management Practices (BMPs) should also reduce pollutant discharges, and improve surface water quality. The expected benefits of implementing the provisions of the Los Angeles County MS4 NPDES permit include:

- **Enhanced Aesthetic Value:** Storm water affects the appearance and quality of a water body, and the desirability of working, living, traveling, or owning property near that water body. Reducing storm water pollution will increase benefits as these water bodies recover and become more desirable.
- **Enhanced Opportunities for Boating:** reducing sediment and other pollutants, and increasing water clarity, which enhances the boating experience for users, offer additional benefits.
- **Enhanced Commercial Fishing:** Important because commercial fisheries are a part of the region's economy, and 28% of the estuaries are reportedly impacted by storm water/urban runoff.
- **Enhanced Recreational and Subsistence Fishing:** Pollutants in storm water can eliminate or decrease the numbers, or size, of sport fish and shell fish in receiving waters.
- **Reduced Flood Damage:** Storm water runoff controls may mitigate flood damage by addressing problems due to the diversion of runoff, insufficient storage capacity, and reduced channel capacity from sedimentation.
- **Reduced Illness from Consuming Contaminated Seafood:** Storm water controls may reduce the presence of pathogens and other toxins in seafood caught by commercial or recreational anglers.
- **Reduced Illness from Swimming in Contaminated Water:** Epidemiological studies indicate that swimmers in water contaminated by storm water runoff are more likely to experience illness than those who swim farther away from a storm drain outfall.
- **Enhanced Opportunities for Non-contact Recreation:** Storm water controls reduce turbidity, odors, floating trash, and other pollutants, which then allow waters to be used as focal point for recreation, and enhance the experience of the users.
- **Drinking Water Benefits:** Pollutants from storm water runoff, such as solids, toxic pollutants, and bacteria may pose additional costs for treatment, or render the water unusable for drinking.
- **Water Storage Benefits:** Storm water is a major source of impairment for reservoirs. The heavy load of solids deposited by storm water runoff can lead to rapid sedimentation of reservoirs and the loss of needed water storage capacity.<sup>10</sup>
- **Ground Water Replenishment:** Storm water can be a significant resource that can be used to recharge ground water basins in the region and reduce its dependence on imported water.

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<sup>10</sup>Report to Congress on Phase II Storm Water Regulations. USEPA, Office of Water. EPA-833-R-99-001, Oct. 1999.

### III. STATUTORY AND REGULATORY HISTORY OF THE STORM WATER PROGRAM

From 1972 to 1990, water pollution control efforts focused primarily on certain process wastewater discharges from facilities such as factories and sewage treatment plants, with less emphasis on diffuse sources. The 1972 amendments to the Federal Clean Water Act (CWA) prohibit the discharge of any pollutant to waters from a point source, unless a NPDES permit authorizes the discharge. Because the focus on reducing pollutants was centered on industrial and sewage treatment discharges, the U.S. Congress amended the CWA in 1987, requiring the USEPA to create phased NPDES requirements for storm water discharges.

In response to the 1987 Amendments to the CWA, the USEPA developed Phase I of the NPDES Storm Water Program in 1990. Phase I requires NPDES permits for storm water discharges from: (i) "medium" and "large" MS4s generally serving, or located in incorporated places or counties with, populations of 100,000 or more people; and (ii) eleven categories of industrial activity (including construction activity that disturbs five acres or greater of land). Phase II, adopted in December 2000, requires operators of small MS4s and small construction sites (construction activity disturbing between 1 and 5 acres of land) in urban areas to control storm water runoff discharges.

#### A. Basis for Permit Conditions

1. **Statutory Basis for Permit Conditions.** The conditions established by this permit are based on CWA § 402(p)(3)(B) which mandates that a permit for discharges from MS4s must: effectively prohibit the discharges of non-storm water to the MS4; and require controls to reduce pollutants in discharges from MS4 to the maximum extent practicable (MEP) including best management practices, control techniques, and system, design and engineering methods, and such other provisions determined to be appropriate. MS4s are not exempted from compliance with Water Quality Standards. CWA § 301(b)(1)(C), which requires NPDES permits to incorporate effluent limitations, including those necessary to meet water quality standards, applies. The permit conditions have been developed to meet the statutory mandate of the CWA and, therefore, include Receiving Water Limitations and, in some cases, numeric effluent limitations.

The permit requires the implementation of a comprehensive Storm Water Quality Management Program (SQMP) through a selection of Best Management Practices (BMPs) (40 CFR 122.44(k)) as the mechanism to achieving the reduction of pollutants in storm water to the maximum extent practicable (MEP) (CWA. § 402(p)(3)(B)(iii)).

2. **Regulatory Basis for Permit Conditions.** As a result of the statutory requirements of the CWA, the USEPA promulgated MS4 permit application regulations (40 CFR 122.26(d)). These regulations describe in detail permit application information to be submitted by MS4s operators. The information in the application or Report of Waste Discharge (ROWD) is utilized to develop the permit conditions.
3. **Discharge limitations.** Numeric effluent limitations are established for trash within the Los Angeles River Watershed that are consistent with the assumptions and requirements of the wasteload allocations established in the Los Angeles River Watershed Trash Total Maximum Daily Load (TMDL). USEPA recommends the use of numeric effluent limitations where feasible as these types of effluent limitations create objective and accountable means for controlling stormwater discharges. Furthermore, USEPA states that where a TMDL includes WLAs for stormwater sources that provide numeric limits, the WLA should, where feasible, be translated into numeric water quality-based effluent limitations (WQBELs) in the applicable stormwater permits.<sup>11</sup>

## **B. Public Review and Participation Process**

Permittees and interested persons and agencies were provided a 30-day period to submit written comments and evidence on the draft tentative, and over forty-five days for review prior to Regional Board consideration. Comments on the draft tentative will be considered and incorporated as appropriate into a revised tentative draft, to be proposed for adoption by the Regional Board on April 7, 2011. At the Board Meeting, Regional Board staff will give a presentation of the proposed permit and significant changes, and then the Permittees and interested persons and agencies will be given an opportunity to make oral comments. The Regional Board members will then take action on the revised tentative draft. A public notice announcing the Regional Board hearing was published in the Los Angeles Times on February 1, 2011, more than 45 days prior to the date of the Board meeting.

## **IV. BACKGROUND - LOS ANGELES COUNTY MS4**

### **A. Los Angeles County MS4 Permit History**

In 1990, the Los Angeles Regional Board (Regional Board) adopted Order No. 90-079, the Los Angeles County MS4 Permit. That permit required the Los Angeles County Flood Control District, the County of Los Angeles and the incorporated cities in Los Angeles County to implement storm water pollution controls including amending ordinances, optimizing existing pollutant controls such as street sweeping, construction site controls, and others. The Regional Board required all Permittees to implement a minimum list of 13 BMPs for consistency across the County. The 1990 permit was issued on a system wide

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<sup>11</sup> USEPA (2010) "Revisions to the November 22, 2002 Memorandum 'Establishing Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for Storm Water Sources and NPDES Permit Requirements Based on Those TMDLs.'" Issued by James A. Hanlon, Director, Office of Wastewater Management and Denise Keehner, Director, Office of Wetlands, Oceans and Watersheds. November 12, 2010.

basis due to the highly interconnected storm drain system serving a population well in excess of 100,000 inhabitants.

On July 15, 1996, the Regional Board adopted Order No. 96-054, reissuing the LA County MS4 NPDES Permit. The 1996 LA County MS4 permit required model programs be developed and implemented by the Permittees for Public Information and Public Participation, Industrial/Commercial Activities, Development Construction, Illicit Connections and Illicit Discharges, Public Agency Activities, and Development Planning. These model programs were intended to be dynamic and expected to change with time, as more information on storm water impacts became available.

Following the adoption of Order No. 96-054, the City of Long Beach submitted an individual ROWD application requesting its own MS4 permit. The City of Long Beach MS4 Permit (Order No. 99-060) was adopted on June 30, 1999. Order No. 96-054 superseded the countywide permit requirements for the City of Long Beach, and the Long Beach now operates under its separate MS4 permit.

On January 31, 2001, the Los Angeles County Department of Public Works submitted an application for renewal of their MS4 permit for the third term in the form of an ROWD for the Los Angeles County Flood Control District, Los Angeles County, and the incorporated cities therein, except for the City of Long Beach. On December 13, 2001, the Regional Board adopted Order No. 01-182.

Order No. 01-182 was subsequently amended by the Regional Board on September 14, 2006 by Order No. R4-2006-0074 to incorporate conditions consistent with the assumptions and requirements of the Santa Monica Bay Beaches Dry Weather Bacteria TMDL wasteload allocations (WLA) (SMB Dry Weather Bacteria TMDL), on August 9, 2007 by Order No. R4-2007-0042 to incorporate conditions consistent with the assumptions and requirements of the Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL, and December 10, 2009 by Order No. R4-2009-0130 to incorporate conditions consistent with the assumptions and requirements of the Los Angeles River Watershed Trash TMDL. As described below, as a result of a legal challenge to Order No. R4-2006-0074, the Los Angeles Superior Court issued a peremptory writ of mandate on July 23, 2010 requiring the Regional Board to void and set aside Order No. R4-2006-0074 in Order No. 01-182.

On June 12, 2006, prior to the expiration date of Order No. 01-182, the Permittees filed four separate Reports of Waste Discharge (ROWD) applying for renewal of their waste discharge requirements that serve as an NPDES permit to discharge wastes to surface waters. Specifically, the Los Angeles County Flood Control District submitted a ROWD application on behalf of itself, the County of Los Angeles, and 78 other Permittees. Several Permittees under Order No. 01-182 elected to not be included as part of the Los Angeles County Flood Control District's ROWD. The City of Downey submitted an individual ROWD application requesting a separate MS4 Permit. The City of Signal Hill also submitted an individual ROWD application requesting a separate MS4 Permit. Lastly, the Upper San Gabriel River Watershed Coalition, comprised of the cities of Azusa, Claremont, Glendora, Irwindale, and Whittier also submitted a ROWD application

requesting a separate MS4 Permit for these cities. The Regional Board reviewed the four ROWDs filed on June 12, 2006 by the Permittees. On July 12, 2006, the Regional Board notified all of the Permittees that their ROWDs did not satisfy federal storm water regulations contained in the USEPA Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems; Final Rule, August 9, 1996 (61 Fed Reg. 41697). Because each ROWD did not satisfy federal requirements, the Regional Board deemed all four ROWDs incomplete. This proposed permit is, therefore, based on permit requirements, the SQMP, and monitoring program adopted as part of Order No. 01-182 and the 2007 and 2009 amendments thereto.

Though four separate ROWDs were submitted, the Regional Board retains discretion as the permitting authority to determine whether to issue permits for discharges from MS4s on a system-wide or jurisdiction-wide basis (40 CFR 122.26(a)(1)(v)). Because of the complexity and networking of the MS4 within Los Angeles County, the Regional Board has previously adopted a system-wide approach to permitting MS4 discharges within Los Angeles County. Since this proposed permit is a limited-term permit, with the purpose of reincorporating provisions implementing one TMDL prior to the summer season, the Regional Board is proposing to continue the system-wide approach in this permit. The Regional Board will evaluate the merits and appropriateness of permitting discharges from MS4s within Los Angeles County on a system-wide or jurisdiction-wide basis or a combination as it develops an updated MS4 permit(s).

## **B. Litigation History**

On December 13, 2001, this Regional Board issued waste discharge requirements in Order No. 01-182. Seven petitions for review were filed with the State Water Resources Control Board (State Board) challenging Order No. 01-182. In 2002, those petitions were dismissed by operation of law. In January 2003, six Petitions for Writ of Mandate were filed in Los Angeles Superior Court challenging Order No. 01-182. The City of Los Angeles dismissed its petition in September 2003. The remaining five cases were designated as *In re Los Angeles County Municipal Storm Water Permit Litigation* [*Cities of Arcadia, et al. v. RWQCB*, LASC Case No. BS 080548; *City of Los Angeles v. RWQCB*, LASC Case No. BS080753; *County of Los Angeles v. RWQCB*, LASC Case No. BS080758; *City of Alhambra v. RWQCB*, LASC Case No. BS080791; *Los Angeles County EDC v. RWQCB*, LASC Case No. BS080792; and *City of Monrovia, et al. v. RWQCB*, LASC Case No. BS080807]. Natural Resources Defense Council, Heal the Bay, and Santa Monica BayKeeper joined the litigation as Intervenor on behalf of the Regional Board and State Board, who was also named as a defendant in some of the actions. The five cases proceeded to a two-phased trial. On March 24, 2005, judgments upholding Order No. 01-182 were entered in favor of the Regional Board, State Board, and the Intervenor in all five cases.

Thirty-three cities, the County of Los Angeles, the Los Angeles County Flood Control District, the Building Industry Legal Defense Fund, and the Construction Industry Coalition on Water Quality appealed the March 24, 2005 judgments to the Second District Court of Appeal. In an October 5, 2006 opinion and a

November 6, 2006 order modifying the opinion, the Court of Appeal unanimously affirmed the judgment in its entirety rejecting all challenges to the permit. (*County of Los Angeles et al. v. California State Water Resources Control Board et al.* (2006) 143 Cal.App.4<sup>th</sup> 985). The County of Los Angeles, the Los Angeles County Flood Control District, twenty-two cities, the Building Industry Legal Defense Foundation, and the Construction Industry Coalition on Water Quality filed two petitions for review with the California Supreme Court seeking to overturn the Court of Appeal's decision. The California Supreme Court declined to review either appeal.

In 2003 and 2007, the County of Los Angeles and fourteen cities submitted test claims (03-TC-04, 03-TC-19, 03-TC-20, and 03-TC-21) to the Commission on State Mandates ("Commission"). The test claims asserted that provisions of Order No. 01-182 constitute reimbursable state mandates, specifically the permit provisions that required the Permittees to install and maintain trash receptacles at specified transit stops and to inspect certain industrial, construction, and commercial facilities for compliance with local and/or state storm water requirements. On September 3, 2009, the Commission issued a final decision that partially approved the test claims. The Commission found that only the requirement for placement of trash receptacles at transit stops was a reimbursable state mandate. While the Commission found that the inspection requirements were state mandates, the Permittees have sufficient fee authority to carry out the mandated activities. (*In re Test Claim on: Los Angeles Regional Quality Control Board Order No. 01-182, Case Nos.: 03-TC-04, 03-TC-19, 03-TC-20, 03-TC-21*).

On July 20, 2010, the State of California Department of Finance, the State Board, and the Regional Board filed a petition for writ of mandate in Sacramento Superior Court seeking a writ directing the Commission to set aside, in part, its final decision and to issue a new decision. (*State of California Department of Finance et al., v. Commission on State Mandates*, Sacramento County Superior Court Case No. 34-2010-80000605). The Regional Board continues to believe that the Commission wrongly applied existing court decisions to conclude that the exercise of discretion mandated by federal law established a reimbursable state mandate. The matter is currently awaiting a trial date.

The Commission's decision only concerns funding of the mandated activities and not the validity of Order No. 01-182 or the proposed permit, or any provisions contained therein.

On September 14, 2006, the Regional Board issued Order No. R4-2006-0074, which amended Order No. 01-182 by incorporating requirements to implement the Santa Monica Bay Beaches Summer Dry Weather Bacteria TMDL (SMB Dry Weather Bacteria TMDL). The next month, the County of Los Angeles and the Los Angeles County Flood Control District (collectively, the "County") filed a petition for review with the State Board, but asked that it be held in abeyance. At the request of the County, it remained in abeyance until 2008. In 2009, the State Board issued Order WQ-2009-0008, which upheld the Regional Board's amendments.

On September 10, 2009, the County filed a petition for a writ of mandate with the Los Angeles County Superior Court seeking to set aside Order No. R4-2006-0074. They alleged that the process used in the Regional Board permit proceeding violated the Administrative Procedure Act, and that the permit provisions themselves are not supported by the weight of the evidence. On July 16, 2010, the Court concluded that the permit proceeding at which Order No. R4-2006-0074 was adopted was procedurally deficient. The Court did not address the substantive merits of the amendments themselves, and thus made no determination about the substantive validity of Order No. R4-2006-0074. As a result of the Court's judgment, the Court issued a peremptory writ of mandate directing the Regional Board to set aside and void Order No. R4-2006-0074 amending Order No. 01-182. The Court also required the State Board to void and set aside Order WQ-2009-0008. (*County of Los Angeles and Los Angeles County Flood Control District v. State Water Resources Control Board and Los Angeles Regional Water Quality Control Board*, Los Angeles Superior Court Case No. BS122724).

**C. Los Angeles County Storm Drain System**

The MS4 covered by this proposed permit for the County of Los Angeles Flood Control District (FCD), County of Los Angeles, and 84 incorporated cities drains the coastal slopes of the Transverse Mountain Ranges, and flows into the Santa Monica Bay and the Los Angeles/Long Beach Harbor. The storm drain structure consists of thousands of catch basins, thousands of miles of underground storm drains, as well as open channels, all owned and operated separately by Permittees. The length of the system, and the locations of all storm drain connections, are not known exactly, as a comprehensive map for the storm drain system does not exist. Rough estimates, based on information from the FCD and large municipalities (population > 100,000), indicate that the length exceeds 4,300 miles, as shown below.

Permittee	Area (Square Miles)	Catch Basins	Storm Drain Length	Open Channel Length
LA County	3,100	73,000	2,650 miles	450 miles
City of LA	469	30,000	1,600 miles	31 miles
El Monte	10	316	11 miles	0.4 mile
Glendale	30.6	1,100	Unknown	Unknown
Inglewood	9	1,157	12 miles	Unknown
Pasadena	26	1,050	30	Unknown
Santa Monica	8.3	850	Unknown	Unknown

Permittee	Area (Square Miles)	Catch Basins	Storm Drain Length	Open Channel Length
Torrance	20	2,000	20 miles	3 miles
<b>TOTAL</b>		<b>109,473</b>	<b>4,323</b>	<b>484.4</b>

**D. Summary of Water Quality Issues in Los Angeles County Watersheds**

Watersheds are geographic areas draining into a river system, ocean or other bodies of water through a single outlet. There are six Watershed Management Areas (WMAs) that represent the six major watersheds covered by the Los Angeles County MS4 NPDES permit. The following is a summary of some significant issues in each watershed.<sup>12</sup>

**Dominguez Channel/Los Angeles-Long Beach Harbor Watershed**

Permitted stormwater discharges

- 418 dischargers covered under an industrial stormwater permit
- 81 dischargers covered under a construction stormwater permit

Potential sources of pollution

- Historical deposits of DDT and PCBs in sediment
- Spills from ships and industrial facilities
- Leakages contaminating groundwater
- **Urban and storm water runoff**
- Impairments: metals, PCBs, PAHs, historic pesticides, coliform, trash, and nitrogen

**Los Angeles River Watershed**

Permitted stormwater discharges

- 1,320 dischargers covered under an industrial stormwater permit
- 270 dischargers covered under a construction stormwater permit

Potential sources of pollution

- Nitrogen and coliform contributions from septic systems
- Other nonpoint sources (horse stables, golf courses)
- Leakage of MTBE from underground storage tanks

<sup>12</sup> *Watershed Management Initiative Chapter*. California Regional Water Quality Control Board – Los Angeles Region. Dec. 2000.

- **Urban and storm water runoff**
- Impairments: nitrogen, trash, selenium, other metals, coliform, PCBs, historic pesticides, chlorpyrifos

### **San Gabriel River Watershed<sup>13</sup>**

#### Permitted stormwater discharges

- 640 dischargers covered under an industrial stormwater permit
- 136 dischargers covered under a construction stormwater permit

#### Potential sources of pollution

- Excessive trash in recreational areas of upper watershed
- Nonpoint source loadings from nurseries and horse stables
- **Urban and storm water runoff**
- Impairments: nitrogen and effects, trash, metals, historic pesticides, coliform, chlorides, and PCBs

### **Santa Monica Bay Watershed**

#### Permitted stormwater discharges

- 88 dischargers covered under an industrial stormwater permit
- 169 dischargers covered under a construction stormwater permit

#### Potential sources of pollution

- Discharges from Ballona and Malibu Creeks contribute to impairments in the Santa Monica Bay and its beaches.
- Impairments: mercury, selenium, other metals, historical pesticides, PAHs, PCBs, nitrogen, coliform, trash, TBT, habitat alteration, exotic vegetation, and salts

### **Coastline**

- **Acute health risk associated with swimming in runoff contaminated surfzone waters**
- Chronic risk associated with consuming seafood from areas impacted by DDT and PCB contamination
- Historic deposits of DDT and PCBs in sediment

### **Ballona Creek Watershed**

- Trash loading from creek
- Sediment contamination by heavy metals from creek to Marina del Rey Harbor and offshore
- **Toxicity of both dry weather and storm water runoff in creek**
- High bacterial indicators at mouth of creek

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<sup>13</sup> *San Gabriel Watershed State of The Watershed* - RWQCB - LA Region - June 2000

### **Malibu Creek Watershed**

- Excessive freshwater, nutrients, and coliform in lagoon; contribution from POTW and other sources
- **Urban runoff from upper watersheds**
- Septic tanks in lower watershed

### **Santa Clara River Watershed**

#### Permitted stormwater discharges

- 46 dischargers covered under an industrial stormwater permit
- 66 dischargers covered under a construction stormwater permit

#### Potential sources of pollution

- Agriculture
- Increasing loads of nitrogen and salts in supplies of ground water
- POTW discharges
- Increasing development and channelization that results in increased runoff volumes and velocities, erosion, and loss of habitat
- Septic tanks
- Impairments: chloride, nutrients (nitrogen), coliform, trash (in parts of watershed)

## **E. Total Maximum Daily Loads (TMDLs)**

### *Clean Water Act Section 303(d): Impaired Waters and TMDLs*

The CWA §303(d)(1)(A) requires each State to conduct a biennial assessment of its waters, and identify those waters for which technology based effluent limitations are not stringent enough to implement water quality standards. These waters are identified as impaired waters on the State's 303(d) list of water quality limited segments. The CWA also requires States to establish a priority ranking for waters on the 303(d) list and to develop and implement TMDLs for these waters.

"A TMDL defines the specified maximum amount of a pollutant which can be discharged or 'loaded' into [impaired waters] from all combined sources" and still allow the waterbody to meet water quality standards (*Dioxin/Organochlorine Center v. Clarke* (9<sup>th</sup> Cir. 1995) 57 F.3d 1517, 1520). A TMDL allocates the acceptable pollutant load to point and nonpoint sources. The elements of a TMDL are described in 40 CFR 130.2 and 130.7. A TMDL is defined as "the sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background" (40 CFR 130.2).

Upon establishment of TMDLs by the State or the U.S. EPA, the State is required to incorporate the TMDLs into the State Water Quality Management Plan (40 CFR 130.6 (c) (1), 130.7). The Water Quality Control Plan for the Los Angeles Region (Basin Plan), and applicable statewide plans, serves as the

State Water Quality Management Plan governing the watersheds under the jurisdiction of the Regional Board.

Essentially, TMDLs serve as a backstop provision of the CWA designed to implement water quality standards when other provisions have failed to achieve water quality standards.

*Clean Water Act Section 402(p): NPDES Permits for MS4s*

The Federal Clean Water Act (CWA) generally prohibits the “discharge of any pollutant,” 33 U.S.C. § 1311(a), from a “point source” into waters of the United States. 33 U.S.C. § 1362(12)(A). An entity can, however, obtain a National Pollutant Discharge Elimination System (NPDES) permit that allows conditionally for the discharge of some pollutants. 33 U.S.C. § 1342(a)(1). The CWA defines point sources as “discernible, confined and discrete conveyances, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure” such as a pipe, ditch, container, rolling stock, concentrated animal feeding operation, landfill leachate collection system, vessel or other floating craft from which pollutants are or may be discharged. 33 U.S.C. § 1362; 40 CFR 122.2.

In 1987, the U.S. Congress enacted the Water Quality Act recognizing both the environmental threats posed by storm water runoff and the U.S. EPA’s problems in implementing regulations for storm water discharges (NRDC II, 966 F.2d at 1296). These Amendments to the CWA established new statutory requirements to control industrial and municipal storm water discharges to waters of the United States (CWA § 402(p).) The amendments require NPDES permits for storm water discharges from Municipal Separate Storm Sewer Systems (MS4s) to waters of the United States, and classify MS4s as a “point source”.

The NPDES permits for MS4s (i) may be issued on a system- or jurisdiction-wide basis; (ii) shall include a requirement to effectively prohibit [unauthorized] non-storm water discharges into the storm sewers; and (iii) shall require controls to reduce the discharge of pollutants from storm water 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. (See CWA §402(p)(3)(B).)

On November 16, 1990, pursuant to CWA § 402(p), the U.S. EPA promulgated regulations at 40 CFR 122.26 which established requirements for MS4 discharges under the NPDES program.

Generally, discharges of pollutants that are covered under a NPDES permit must comply with (i) effluent limitations necessary to achieve compliance with technology based standards **as well as** (ii) **any more stringent effluent limitation “necessary to meet water quality standards”** (emphasis added) (33 U.S.C. § 1311(b)(1)(C)). In the case of MS4 NPDES discharge permits, federal courts have ruled that the CWA grants the permitting agency discretion to determine what pollutant controls are appropriate for discharges from MS4s. The federal courts held that the permitting agency has discretionary authority under “33 U.S.C. § 1342(p)(2)(E) to determine that ensuring strict compliance

with state water-quality standards is necessary to control pollutants, or to require less than strict compliance with state water-quality standards, such as a BMP approach” (*Defenders of Wildlife v. Browner*, 191 F.3d 1159 (9<sup>th</sup> Cir., 1999)). Under 33 U.S.C. § 1342(p)(3)(B)(iii), the permitting authority has the choice to include either best management practices or numeric effluent limitations in the permits. NRDC II, 966 F.2d at 1308 (“Congress did not mandate a minimum standards approach or specify that [the] EPA develop minimal performance requirements.”).

Even early in the regulatory program for MS4s, the U.S. EPA stated that if the Permittee(s) fails to implement adequate BMPs to prevent exceedance of the receiving water objectives, the permitting authority “may have to consider other approaches to water quality protection” (61 Fed. Reg. 43761; *Interim Permitting Approach*, Response #6, EPA 833-D-96-00, 1996; Order WQ 91-03).

## V. DISCUSSION OF SPECIAL PROVISIONS

The Special Provisions in the next section are - for the most part - based on the Permittees’ existing model programs, which they have been implementing since at least 1999.

### A. Public Information and Participation Program (PIPP)

#### Legal Authority:

CWA § 402(p)(3)(B)(ii-iii), CWC section 13377, and NPDES regulations at 40 CFR 122.26(d)(2)(I)(B, C, E, and F) and 40 CFR 122.26(d)(2)(iv).

NPDES regulation 40 CFR 122.26(d)(2)(iv)(A)(6) provides that the proposed management program include “A description of a program to reduce to the maximum extent practicable, pollutants in discharges from MS4s associated with the application of pesticides, herbicides, and fertilizer which will include, as appropriate, controls such as educational activities, permits, certifications, and other measures for commercial applicators and distributors, and controls for application in public right-of-ways and at municipal facilities.”

NPDES regulation 40 CFR 122.26(d)(2)(iv)(B)(6) provides that the proposed management program include “ A description of education activities, public information activities, and other appropriate activities to facilitate the proper management and disposal of used oil and toxic materials.”

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

**Background:**

Implementation of a PIPP is a critical BMP and a necessary component of a storm water management program. The State Board Technical Advisory Committee "recognizes that education with an emphasis on pollution prevention is the fundamental basis for solving nonpoint source pollution problems." The USEPA Phase II Fact Sheet 2.3 (Fact Sheet 2.3) finds that "An informed and knowledgeable community is critical to the success of a storm water management program since it helps insure the following: (i) greater support for the program as the public gains a greater understanding of the reasons why it is necessary and important, and (ii) greater compliance with the program as the public becomes aware of the personal responsibilities expected of them and others in the community, including the individual actions they can take to protect or improve the quality of area waters."<sup>14</sup>

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

- Broader public support since residents who participate in the development and decision making process are partially responsible for the program and, therefore, are more likely to take an active role in its implementation;
- Shorter implementation schedules due to fewer obstacles in the form of public and legal challenges and increased sources in the form of residents volunteers;
- A broader base of expertise and economic benefits since the community can be a valuable, and free, intellectual resource; and
- A conduit to other programs as residents involved in the storm water program development process make important cross-connections and relationships with other community and government programs. This benefit is particularly valuable when trying to implement a storm water program on a watershed basis.

The first five-year public education program initiated in 1996 was successful at studying segments of Los Angeles County residents to identify those who pose the greatest threat to storm water quality and those who represent the greatest opportunity to respond positively to a public education program, as well as providing a baseline measurement of residents' storm water-related practices and habits. This information was used to target the residents who are most likely to change their behaviors to improve storm water quality. Using various communication tactics and activities, the program successfully reached 83% of County residents with pollution prevention messages through the Storm Water/Urban Runoff Public Education Program Five-Year Storm Water Public Education Strategic Analysis (Five-Year Strategy).<sup>15</sup>

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<sup>14</sup> *Storm Water Phase II Final Rule - Public Education and Outreach Minimum Control Measure*. USEPA Fact Sheet 2.3, January 2000.

<sup>15</sup> *Storm Water/Urban Runoff Public Education Program Five-Year Storm Water Public Education Strategic Analysis*, Los Angeles County of Public Works, July 31, 2000.

It is generally more cost-effective to have numerous operators coordinate to use an existing program than all developing their own local programs. Therefore, Permittees should build on the regional program with additional information specific to local needs.

Pursuant to Order No. 96-054, the Principal Permittee conducted educational site visits to Phase I industrial facilities, auto repair shops, retail gasoline outlets, and restaurants.

Pursuant to Order No. 01-182, the Principal Permittee implemented a corporate outreach program to educate corporate management at gas stations and restaurant chains about storm water regulations.<sup>16</sup>

According to the Principal Permittee's Year Four (1999-2000) Highlights, approximately 85 million impressions were made through advertising, media relations, customized coffee jackets, corporate partnerships, special events, and business outreach. Hits on the [www.888CleanLA.com](http://www.888CleanLA.com) web site have been consistently increasing, indicating a growing public interest, as well as greater awareness. Also, increased media attention and public interest in current issues, such as trash TMDLs, is expected. Los Angeles County has committed to making a minimum of 35 million impressions per year.

#### **Program Performance Measures:**

The Principal Permittee is required to: (a) ensure that a minimum of 35 million impressions per year are made on the general public about storm water via print, local TV access, local radio, or other appropriate media; and (b) provide all School Districts within its jurisdiction with materials, including videos, live presentations, brochures, and other media necessary to educate a minimum of fifty percent of all school children (K-12) every 2 years on storm water pollution.

### **B. Industrial/Commercial Facilities Program**

#### **Legal Authority:**

The Phase I regulations require, in part, that the applicant (i) develop adequate legal authority, (ii) perform a source identification, and (iv) develop a management program to reduce the discharge of pollutants to the maximum extent practicable using management practices, control techniques and system design and engineering methods, and such other provisions which are appropriate.<sup>17</sup> Specifically, with regards to industrial controls, the management plan shall include the following.

40 CFR 122.26(d)(2)(iv)(C), A description of a program to monitor and control pollutants in storm water discharges to municipal systems from municipal landfills, hazardous waste treatment, disposal and recovery facilities, industrial facilities that are subject to section 313 of Title III of the Superfund Amendments

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<sup>16</sup> Permit, Part 4, section B.2.a.

<sup>17</sup> 40 CFR 122.26(d)(2)

and Reauthorization Act of 1986 (SARA), and industrial facilities that the municipal permit applicant determines are contributing a substantial pollutant loading to the municipal storm sewer system. The program shall:

- (1) *Identify priorities and procedures for inspections and establishing and implementing control measures for such discharges.*
- (2) *Describe a monitoring program for storm water discharges associated with industrial facilities [...]*

### **Background:**

The municipality is ultimately responsible for discharges from the MS4. Because industrial awareness of the program may not be complete, there may be facilities within the MS4 area that should be permitted but are not (non-filers). In addition, the Phase I regulations that require industries to obtain permit coverage for storm water discharges is largely based on SIC Code. This has been shown to be incomplete in identifying industries that may be significant sources of storm water pollution ("industries" includes commercial businesses). The word "industries" is used in a broad sense. Another concern is that the permitting authority may not have adequate resources to provide the necessary oversight of permitted facilities. Therefore, it is in the municipality's best interest to assess the specific situation and implement an industrial/commercial inspection/site visit and enforcement program to control the contribution of pollutants to the MS4 from all high risk sources.

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

*"...Municipal operators of large and medium municipal separate storm sewer systems are responsible for obtaining system-wide or area permits for their system's discharges. These permits are expected to require that controls be placed on storm water discharges associated with industrial activity which discharge through the municipal system."* The USEPA also notes in the preamble that *"... municipalities will be required to meet the terms of their permits related to industrial dischargers."*

Similarly, in the USEPA's Guidance Manual (Chapter 3.0), it is specified that MS4 applicants must demonstrate that they possess adequate legal authority to:

- Control construction site and other industrial discharges to MS4s;
- Prohibit illicit discharges and control spills and dumping;
- Carry out inspection, surveillance, and monitoring procedures.<sup>18</sup>

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

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<sup>18</sup> *Guidance Manual For the Preparation of Part 2 of the NPDES Permit Applications for Discharges from Municipal Separate Storm Sewer Systems - USEPA -November 1992*

In the same Guidance Manual<sup>19</sup> (Chapter 6.3.3), it is stated that the municipality is ultimately responsible for discharges from their MS4. Consequently, the MS4 applicant must describe how the municipality will help the USEPA and authorized NPDES States to:

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

At the request of certain Permittees, the US EPA facilitated two day-long sessions, on November 9<sup>th</sup> and 29<sup>th</sup>, 2000 during which discussions among Permittees, Regional Board staff, and environmental representatives focused on inspection requirements. Participants made diligent attempts to understand various positions and limitations and, as a result came to a potential consensus regarding industrial/commercial inspection requirements.

The consensus derived requirement blended elements of the other options previously submitted to the Board and to the public, provides greater clarity with regard to Regional Board expectations and responds to Permittees' concerns over funding by better coordinating State (i.e. Regional Board) inspection efforts with those of the Permittees.

The requirements clarified and reduced the scope of inspections. In general, frequencies have been reduced from once every 24 months to once every 30 months. In addition, Phase I facilities have been separated in Tier 1 and Tier 2 sites and further reduced the frequency of inspections for Tier 2 category to once every 5 years. The facilities with no exposure of industrial activity to storm water need not be inspected, after the initial determination of no-exposure, during the term of the permit.

Another significant adjustment was the addition of a provision relieving permittees of the responsibility to inspect those Phase I facilities that the Regional Board has inspected within the previous 24 months. In regards to the level of inspection, it was clarified that the Permittees are expected to check during inspections for compliance with the implementation of minimum BMPs, as previously approved by Board Order 98-08, and compliance with the local storm water ordinances.

The inspection requirements also provides better clarity concerning the scope of enforcement. A progressive enforcement procedure was outlined including minimum steps that Permittees must take in their program to enforce their

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<sup>19</sup> *Id.*

municipalities' storm water requirements. In recognition of some of the Permittees concerns regarding the resource intensive efforts needed to elevate enforcement actions, a mechanism was provided through which Permittees can refer cases to the Regional Board, and for violations of the State's General Industrial Activities Storm Water permit, the referral can be expedited.

### **Discussion:**

Recognizing that the municipality is ultimately responsible for the quality of storm water discharges from the MS4, the municipalities must evaluate industrial/commercial facilities and determine their compliance with the permit requirements, as well as their contribution to the MS4 and potential impacts to the receiving waters. The following areas are to be addressed in order to implement a meaningful industrial/commercial inspection/site visit and enforcement program.

- **Source Identification**
  - Identification of industrial/commercial sites discharging to the MS4 (by SIC codes and narrative if needed)
  - Characterization of activities, materials used, and potential for contributing pollutants along with the type of pollutants
  
- **Pollution Prevention**
  - Key concepts are many times overlooked: Prevent, before it happens, and be pro-active rather than reactive. It is more difficult to treat after the pollutant is released or mixes with storm water. BMPs and other site-specific controls are often most appropriate for reducing pollutants in storm water discharges from industrial and commercial facilities.
  
- **Threat to Water Quality Prioritization**
  - Identify impaired water bodies by pollutants and link with activities and industrial/commercial sites that may contribute those particular pollutants (or potentially contribute to) the water quality impairment
  
- **Through existing ordinance, order, or similar means, the ability to**
  - enter premises;
  - conduct inspections;
  - review and evaluate SWPPPs and monitoring results review;
  - require control methods (BMPs) implementation; and,
  - take appropriate enforcement actions, if necessary.

It may be necessary to update existing ordinances if they do not provide sufficient legal authority to implement the above mentioned components as required by the regulations.

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

Recognizing the dual coverage envisioned by the USEPA regulations<sup>20</sup>, and suggested partnership between local and State authorities, municipalities shall coordinate with State activities for the implementation of the General Industrial Activities Storm Water Permit (GIASP). The goal is to control industrial sources and other sources not specifically covered under Phase I storm water regulations but identified as significant contributors of pollutants by the municipalities through their identification and prioritization studies. The net result should be a better and improved coordinated program with greater impact on limiting and eliminating (as a final goal) the contribution of pollutants to the receiving water while maintaining and/or restore the capacity of the receiving water to sustain the beneficial uses without impairments.

The *Critical Source Selection and Monitoring Report*<sup>21</sup> identified seven highest ranked pollution potential activities to be, in order of ranking: (i) wholesale trade (scrap, auto dismantling), (ii) *automotive repair/parking*, (iii) fabricated metal products, (iv) motor freight (including trucking), (v) chemical and allied products, (vi) automotive dealers/gas stations, (vii) primary metals products. The report also outlined a complete study plan to be implemented by the Permittees during the permit term. It is significant to note that five out of seven categories of activities are subject to Phase I industrial storm water regulations. Although *automotive repair/parking* and automotive dealers/gas stations categories were not the focus of the Phase I storm water regulations, the study identified these commercial categories as significant potential pollutant contributors based on the criteria developed in the critical source criteria study.

Rank (pollution potential) <sup>22</sup>	Industrial Category	SIC Code	No. Facilities (estimated)
1	Wholesale trade (scrap, auto dismantling)	50	587
2	<i>Automotive repair/parking</i>	75	6,067
3	Fabricated metal products	34	3,283
4	Motor freight (including trucking)	42	872
5	Chemical and allied products	28	1,069
6	<i>Automotive Dealers/Gas Stations</i>	55	2,744
7	Primary Metals Products	33	703

It is also important to note that heavy metals are significant pollutants transported in storm water discharges and cause impairment of receiving waters in the Los Angeles Region. The above table identifies at least two industrial

<sup>20</sup> Federal Register Vol. 55, No 222, pp. 48000; USEPA Storm Water Phase II Compliance Assistance Guide, 2000, pp. 4-32 and 5-11, where it clarifies the dual responsibility

<sup>21</sup> Critical Source Selection and Monitoring Report, Woodward-Clyde, 1997

<sup>22</sup> *Critical Source Selection and Monitoring Report (Table 1-3)* - Woodward-Clyde 1996

categories that have the highest potential to contribute those pollutants: fabricated metal products and primary metal products. During the previous permit term, Los Angeles County conducted a Critical Source Study (1998-2000). The aim of the study was to monitor for two years the previously identified five priority industrial and/or commercial critical source categories. The results of the study confirmed that the critical source industries are indeed high risk. Storm water discharges exceeded water quality standards for almost all toxic pollutants in all categories.

The municipalities are required to (i) control the storm water discharges associated with industrial activities and other commercial facilities identified as significant contributors of pollutants, and (ii) assist the Regional Board in ensuring that industrial activities are covered by the general industrial storm water permit. This requirement is consistent with the nationwide approach used by the USEPA in issuing *second term* MS4 permits.<sup>23</sup> Also, this requirement is consistent with other MS4 permits issued in California: San Diego and Santa Clara MS4 permits. Business education and outreach should be continued under the auspices of the Public Education program.

The strategy builds on the State/municipalities partnership by focusing their limited resources on the following activities:

- The Permittees will take a lead role in inspecting restaurants, automotive service facilities, retail gasoline outlets, industrial facilities mandated specifically by the regulations, top five highest ranking industrial categories identified by the Permittees through their critical sources identification and monitoring studies and site visits at the remaining industrial categories identified through their critical sources identification study while
- The Regional Board will be the lead agency for inspections of facilities covered or in need of coverage under GIASP;
- The Permittees will assist Regional Board in its activities to fully enforce the GIASP through spot check inspections, referrals, data information research, joint inspections;
- The Regional Board and Permittees will coordinate their information systems and task scheduling to avoid duplication and strengthen harmonization of activities;
- The Regional Board may, based on available funding, enter into agreement with Permittees to contract some of the inspection activities required by the GIASP to be done by the Permittees.

### **C. Construction Sites Program**

#### **Legal Authority:**

USEPA storm water regulations at 40 CFR 122.26(d)(2)(iv)(D) provide that a proposed management program must include "a description of a program to implement and maintain structural and non-structural best management

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<sup>23</sup> MS4 NPDES Permits issued to Palm Beach County, Broward County, Sarasota County, Florida, Tulsa, Oklahoma, Denver, Colorado.

practices to reduce pollutants in storm water runoff from construction sites to the municipal storm sewer system".

### **Background:**

There are several environmental impacts associated with construction activity. As stated in the *California Storm Water Best Management Practice Handbook for Construction Activity* (BMP Handbook), "Construction usually increases the amount of impervious area causing more of the rainfall to runoff, and increasing the speed at which runoff occurs. Unless properly managed, this increased runoff will erode natural and/or unprotected watercourses causing the watercourse to widen...Sedimentation can also contribute to accelerated filling of reservoirs, harbors, and drainage systems."<sup>24</sup>

### **Discussion:**

The prevention of erosion is a key objective of the permit modifications to the construction program. The Permittees currently oversee construction sites within their respective jurisdiction. The oversight of smaller construction sites (those sites under five acres) is inconsistent among Permittees. Some Permittees have incorrectly assumed that responsibility begins only after a discharge of pollutants, sediments for example, has left the site. USEPA storm water regulations do not support such interpretations. Regional Board staff has clarified this in the permit to require that the municipalities better coordinate oversight of construction activity within their jurisdiction. The Permittees are ultimately responsible for what enters and exits the MS4 that they own and/or operate. It is in the best interest of the Permittees to control what enters their storm drain system.

The need for proper erosion and sediment controls is very apparent during, and immediately after, the rains that occur in Southern California. The environmental effects of erosion are well documented. Erosion can be prevented or reduced with the proper planning and implementation of appropriate BMPs.

Erosion occurs when land is exposed and the sediments are mobilized. With adequately engineered and implemented structural or non-structural BMPs, the detrimental environmental effects can be eliminated or minimized. Currently, there are many manuals and guidance handbooks available to guide a developer. The municipalities, in general, are aware of these BMPs, and can work with Regional Board staff to ensure that they are being implemented.

### **Requirements:**

REQUIREMENT: The permit requires that Permittees promote the use of effective erosion and sediment controls at construction sites regardless of size.

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<sup>24</sup> *California Storm Water Best Management Practice Handbook for Construction Activity*. 1993.

**REQUIREMENT:** The permit requires source control and treatment control BMPs for controlling runoff at construction sites

**REQUIREMENT:** Each Permittee shall require the preparation, submittal, and implementation of a Local SWPPP prior to issuance of a grading permit for construction projects that meet one or more of the following criteria: will result in soil disturbance of one acre or more in size.

**REQUIREMENT:** The Permittees shall review, approve, and enforce any erosion control plan submitted to the Permittee for implementation at construction sites, regardless of size and GCASP coverage of the sites. Local SWPPPs shall be required for projects of one acre or more in size.

**REQUIREMENT:** For sites that require a construction storm water permit, Permittees are required to ensure that a Notice of Intent (NOI) has been filed with the State Board prior to issuing a grading permit.

**REQUIREMENT:** Wet weather inspections are required of all construction sites one acre or greater. The Permittees need to conduct wet weather inspections to ensure compliance with local ordinances.

#### **D. Illicit Connections and Illicit Discharges Elimination Program**

##### **Legal Authority:**

A proposed management program “shall be based on a description of a program, including a schedule, to detect and remove (or require the discharger to the municipal storm sewer to obtain a separate NPDES permit for) illicit discharges and improper disposal into the storm sewer,” per 40 CFR 122.26(d)(2)(iv)(B). A Permittee must include in its proposed management program “a program, including inspections, to implement and enforce an ordinance, orders or similar means to prevent illicit discharges to the municipal storm sewer system,” per subsection (1) of the above regulation.

##### **Background:**

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

The objective of a municipality's illicit connection/illicit discharge (IC/ID) elimination program should be to detect illicit connections and illicit discharges to the storm drain system, and to promptly remove such discharges and connections. Municipalities typically employ the approaches listed below to achieve this objective:

1. Permitting connections to the municipal storm drain.
2. Mapping the storm drain system, locations of catch basins, outfalls, permitted connections, and the names and locations of all waters of the U.S. that receive discharges from the outfalls.
3. Adopting a storm water/ urban runoff ordinance to prohibit unauthorized non-storm water discharges into the MS4, and implementing appropriate enforcement procedures and actions.
4. Implementing a program to detect and eliminate non-storm water discharges to the MS4, including illegal dumping.
5. Educating public employees, businesses, and the general public about the dangers associated with illegal discharges and improper disposal.
6. Establishing a public reporting hotline or other mechanism to report illicit discharges and illegal dumping.
7. Establishing measurable goals to evaluate successful program implementation.

The Regional Board approved a model IC/ID elimination program for the Permittees' SQMP on March 23, 1999. However, only vague performance standards were specified in this model program.

By July 1999, all Permittees reported that they implemented an IC/ID elimination program. For the most part, however, this was a passive program, and relied upon IC/ID detection during regularly scheduled maintenance. Most Permittees are unable to estimate the extent of their storm drain they have screened during regularly scheduled maintenance.

Prior to 2001, Permittees with storm drain systems under their management relied upon field screening, during regularly scheduled maintenance of the storm drain system, to locate illicit connections. At that time most Permittees could not estimate the length of the storm drain system that was field-screened; nor did the Regional Board require reporting such information.

### **Discussion:**

#### **Existing IC/ID Elimination Program**

For the 2009/2010 annual reporting period, very few Permittees reported illicit connections and almost all the Permittees certified the completion of field screening of their storm water conveyance system. The numbers of illicit connections varied widely among Permittees, with more than half reporting no illicit connections, and with the County reporting 410 suspected illicit connections. Part of the reason for this range is that the County Flood Control District is responsible for maintaining over half<sup>25</sup> of the storm drain system. Also, several Permittees believe that few – if any – illicit connections have been

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<sup>25</sup> The exact length of storm drain systems operated by most cities is unknown.

identified in many cities because: (a) many cities are primarily residential, and illicit connections are unlikely to occur from residential land use; and (b) cities in the County of Los Angeles are relatively new vis a vis their eastern counterparts, and adequate controls were in place at the time storm drain connections were installed. The most recent information regarding the number of illicit connections reported by Permittees can be found at:

[http://www.waterboards.ca.gov/losangeles/water\\_issues/programs/stormwater/municipal/los\\_angeles\\_ms4/lams4annualreport.shtml](http://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/los_angeles_ms4/lams4annualreport.shtml)

**Illicit Discharges:** As designed in the model program, Permittees eliminate illicit discharges by preventing spills and, for those that do occur, by responding promptly. To prevent spills, Permittees enacted ordinances prohibiting non-storm water runoff, and are implementing spill prevention guidance. To respond to discharges, Permittees implement containment and cleanup procedures, coordinate with other agencies, investigate the cause of the discharge and – when the source and responsible party is known – take enforcement action. Additionally, employee training is provided on all of the above.

As with illicit connections, the numbers of illicit discharges varies widely for the annual reporting period 2009/2010. The County reported a total of 118 suspected illicit discharges. Among the Cities, results at the upper end include 570 in the City of Los Angeles, and 137 in Santa Monica. At the other end of the range, many cities reported no incidents of suspected illicit discharges. Based on information provided to date, staff cannot account for this wide range. Audits of the Permittees' programs in the future should help clarify this. The most recent information regarding the number of illicit discharges reported by Permittees can be found at:

[http://www.waterboards.ca.gov/losangeles/water\\_issues/programs/stormwater/municipal/los\\_angeles\\_ms4/lams4annualreport.shtml](http://www.waterboards.ca.gov/losangeles/water_issues/programs/stormwater/municipal/los_angeles_ms4/lams4annualreport.shtml)

**Reporting:** As designed in the model program, Permittees have implemented procedures to receive reports of illicit discharge and disposal incidents, and to promptly respond and report such incidents. Most rely upon the countywide hotline system, which is maintained by the County. For hazardous substances, Permittees implement additional reporting procedures.

### **IC/ID Elimination Program Requirements**

The Special Provisions Section of the permit (Board Order No. R4-2011-XXX) requires the Permittees to meet the following requirements:

- General requirements, among which include the updating the listing of permitted connections to the storm drain system, the tracking of illicit connections and discharges, and compilation of this information in coordination with the Principal Permittee, as well as identification of priority areas for proactive screening.
- Illicit connection requirements for proactive screening of the storm drain system over the term of the Order, including:

- The continuation of field screening of open channels and underground pipes (with a diameter of 36 inches or greater);<sup>26</sup>
- Permit screening, to ensure that all facilities with connections are effectively implementing the prohibition on non-storm water discharges;
- Requirements to investigate and terminate illicit connections, including response times; and
- Illicit discharge requirements, specifying response times for abatement and cleanup (within one business day), and investigation (as soon as practicable).

As Permittees have pointed out, and as staff acknowledges, residential land uses are less likely to have illicit connections. However, staff remains concerned that adequate controls be in place at all times to prevent improper connections to the storm drain system. Staff's concern is based upon the wide range of illicit connections reported by Permittees with no apparent relation to land use, the poor water quality of dry weather flows in inland receiving waters, and also incidents of illicit connections reported separately or directly to the Regional Board.

#### **E. Public Agency Activities Program**

##### **Legal Authority:**

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

##### **Background:**

Many Permittees provide services that ultimately result in the enhancement of the lives of the residents. Some of these services include but are not limited to: sewage system operations; public construction activities; vehicle maintenance; material storage; street and road maintenance; landscaping; recreational facility management; parking facility management; public industrial activities; and many other activities.

##### **Justifications for Key Requirements:**

**REQUIREMENT:** In sewage system operations, each Permittee is required to implement a response plan in case of an overflow of the sewage system to the storm drain system.

**JUSTIFICATION:** The response plan will have different requirements dependent upon whether the Permittee owns or operates the sanitary sewer system.

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<sup>26</sup> As set forth on page 3-3 and in Appendix I of the Permittees' model program, screening tools for the proactive program will include dye tests, smoke tests, and TV inspections.

**REQUIREMENT:** All requirements in the Development Construction Program apply to public construction activities.

**JUSTIFICATION:** This is proposed to reduce the possibility of a public construction site from becoming a source of pollutants. A public construction site should be a model of what to do efficiently and effectively (preceding a discharge).

**REQUIREMENT:** Each Permittee with a construction site that meets the size requirements for a GCASP must obtain coverage under the general permit for construction activity. Currently the size threshold is 5 acres but will change to 1 acre on March 10, 2003. However, a municipality of less than 100,000 people (1990 Census) need not apply for coverage for a construction activity until March 10, 2003.

**JUSTIFICATION:** This change is consistent with USEPA Phase II storm water regulations, and will assist in the tracking of construction sites operated by Permittees.

**REQUIREMENT:** Each Permittee is required to ensure that public facilities are designed and constructed using construction and post-construction BMPs consistent with the Standard Urban Storm Water Mitigation Plans (SUSMPs) required in the Development Planning section of the permit.

**JUSTIFICATION:** This requirement ensures consistency with the planning, design, and construction requirements for private projects. Public projects will be treated the same as private projects.

**REQUIREMENT:** For Permittee owned or operated vehicle maintenance, material storage areas, and corporation yards the Permittees will implement site specific SWPPPs to minimize pollutants in storm water discharges. Vehicle and equipment wash areas will be required to be self contained or covered, equipped with a clarifier, or other pretreatment device, and/or properly connected to the sanitary sewer. This requirement will take effect when a new facility is constructed or when an existing site is remodeled or reconstructed.

**JUSTIFICATION:** This requirement ensures consistency with the City of Long Beach MS4 and the Ventura County MS4 permits.

**REQUIREMENT:** For storm drain operation and maintenance, Permittees are now required to prioritize all catch basins and clean them out according to the permit requirements (Part 4.F.5, Permit). The previous permit required catch basins to be inspected and cleaned once a year. Also, any catch basin greater than 40% full must be cleaned, and after July 1, 2003, any catch basin greater than 25% full must be cleaned. In addition to catch basin cleaning, Permittees must also implement other trash reduction measures. These measures include

placing trash receptacles at all transit stops and implementing special actions to cleanup trash when hosting a special event.

Permittees subject to a trash TMDL (Los Angeles River and Ballona Creek WMAs) may continue with their current catch basin cleaning schedule until TMDL implementation measures are developed. The TMDL implementation measures may be different than permit provisions, and requiring Permittees subject to a TMDL to implement different permit requirements would be premature and result in unnecessary expenses for these Permittees. However, if TMDL implementation measures are not in place by October 2003, Permittees subject to a trash TMDL must implement all permit requirements to control trash.

At the December 13, 2001 Board Meeting, concern was raised regarding the storm drain operation and management requirements described above. At the time of the Board Meeting, the requirement did not include a clause in case TMDL implementation measures were not implemented as currently scheduled. Therefore, it was possible that Permittees in the Los Angeles River and Ballona Creek WMAs would be allowed to continue their current practices without any additional trash reduction requirements. This issue was discussed, and the Board approved inserting a phrase that required the TMDL subject Permittees to implement regular storm drain operation and management requirements in the case that the TMDL implementation phase has not begun by 2003.

**REQUIREMENT:** For storm drain maintenance each Permittee must visually monitor their open channels for debris and identify and prioritize areas of illicit discharge for regular inspection and at least annually remove trash and debris from the channels. Permittees must properly dispose of removed material.

**REQUIREMENT:** The streets and roads maintenance section (Part 4.F.6, Permit) requires each Permittee to designate streets based on the volume of trash that is consistently generated. Priority A (highest) streets must be swept twice a month. Priority B (medium) streets must be swept once a month, and Priority C (lowest) streets must be swept as necessary, but no less than once a year. The basis of prioritization was left for the Permittees to establish and implement.

**JUSTIFICATION:** The new streets and roads maintenance requirements will allow Permittees to more efficiently use resources to target high priority areas.

## **F. New Development And Significant Redevelopment Program**

### **Impacts from New Development:**

Treatment control BMP requirements on new development and redevelopment offer the most cost-effective strategy to reduce pollutant loads to surface waters. Retrofit of existing development will be expensive and may be considered on a targeted basis. Studies on the economic impacts of watershed protection

indicate that storm water quality management has a positive or at least neutral economic effect while greatly improving the quality of surface waters.<sup>27</sup>

USEPA storm water regulations at 40 CFR 122.26 require that pollutants in storm water be reduced to MEP. The USEPA's definition is intentionally broad to provide maximum flexibility in MS4 permitting and to give municipalities the opportunity to optimize pollutant reductions on a program-to-program basis.<sup>28</sup> The definition of MEP has generally been applied to mean implementation of economically achievable management practices. Because storm water runoff rates can vary from storm to storm, the statistical probabilities of rainfall or runoff events become economically significant and are central to the control of pollutants through cost effective BMPs. Further, it is recommended that storm water BMPs be designed to manage both flows and water quality for best performance.<sup>29</sup> It is equally important that treatment control BMPs once implemented be routinely maintained.

Financing the MS4 program offers a considerable challenge for municipalities. A proven successful financing mechanism is the establishment of a storm water utility.<sup>30</sup> Utility fees, which are assessed on the property owner based on some estimate of storm water runoff generated for the site, are a predictable and dedicated source of funds. Utility fees can also provide a mechanism to provide incentives to commercial and industrial property owners to reduce impervious surface areas. Such incentives offer flexibility to property owners to choose the better economic option – paying more fees or making improvements to reduce runoff from the site.

### **Review of Design Standards:**

The American Society of Civil Engineers (ASCE) and the Water Environment Federation (WEF) have recommended a numerical BMP design standard for storm water that is derived from a mathematical equation to maximize treatment of runoff volume for water quality based on rainfall/ runoff statistics and which is economically sound.<sup>31</sup> The maximized treatment volume is cut-off at the point of diminishing returns for rainfall/ runoff frequency. On the basis of this equation the maximized runoff volume for eighty-five percent treatment of annual runoff volumes in California can range from 0.08 to 0.86 inches depending on the imperviousness of the watershed area and the mean rainfall.<sup>32</sup>

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<sup>27</sup> *The Economics of Watershed Protection*, T. Schueler (1999), Center for Watershed Protection, Endicott, MD. The article summarizes nationwide studies to support the statement that watershed planning and storm water management provides positive economic benefits.

<sup>28</sup> *Storm Water Phase II Final Rule – Pre-Federal Register Version*, p 87 (USEPA 1999). See USEPA's discussion in response to challenges that the definition is sufficiently vague to be deemed adequate notice for purposes of compliance with the regulation.

<sup>29</sup> *Urban Runoff Pollution – Summary Thoughts – The State of Practice Today and For the 21<sup>st</sup> Century*. Wat. Sci. Tech. 39(2) pp. 353-360. L.A. Roesner (1999)

<sup>30</sup> *Preliminary Data Summary of Urban Storm Water Best Management Practices* (1999), Report No. USEPA-821-R-99-012, USEPA. The document reviews municipal financing mechanisms and summarizes experience in the U.S. to date.

<sup>31</sup> *In Urban Runoff Quality Management, WEF Manual of Practice No. 23, ASCE Manual and Report on Engineering Practice No. 87*. WEF, Alexandria, VA; ASCE, Reston, VA. 259 pp. (1998).

<sup>32</sup> *Sizing and Design Criteria for Storm Water Treatment Controls, Presentation to California Storm Water Quality Task Force*, November 13, 1998, Sacramento, CA. L.A. Roesner, Camp Dresser McKee.

Other methods of establishing numerical BMP design standards include: (i) Percent treatment of the annual runoff; (ii) Full treatment of runoff from rainfall event equal to or less than a predetermined size; and (iii) Percent reduction in runoff based on a rainfall event of standard size.<sup>33</sup> These numerical design standards have been applied to Development Planning in Puget Sound, WA; Alexandria, VA; Montgomery County, MD; Denver, CO; Orlando, FL; Portland, OR; and Austin, TX.

The City of Seattle requires that where new development coverage is 750 square feet or more, storm water detention be provided based on a 25 year storm return frequency, and a peak discharge rate not to exceed 0.2 cubic feet per second.<sup>34</sup> Additionally, for projects that add more than 9,000 square feet in developmental coverage, the peak drainage water discharge rate is limited to 0.15 cubic feet per second per acre for a two-year storm. The City of Denver requires new residential, commercial, and industrial developments to capture and treat the 80<sup>th</sup> percentile runoff event. This capture and proper treatment is estimated to remove 80 to 90 percent of the annual TSS load which is a surrogate measure for heavy metal and petroleum hydrocarbon pollutants.<sup>35</sup>

Some States have established numerical standards for sizing storm water post-construction BMPs for new development and significant redevelopment. The State of Maryland has established storm water numerical criteria for water quality of 0.9 to 1 inch, and BMP design standards in a unified approach combining water quality, stream erosion potential reduction, groundwater recharge, and flood control objectives.<sup>36</sup> The State of Florida has used numerical criteria to require treatment of storm water from new development since 1982, including BMPs sized for 80 percent reduction (95 percent for impaired waters) in annual TSS loads derived from the 90 percent (or greater for impaired waters) annual runoff treatment volume method for water quality.<sup>37</sup> The State of Washington has proposed at least six different approaches of establishing storm water numerical mitigation criteria for new development, which add 10,000 square feet of impervious surface or more for residential development, and 5,000 square feet of impervious surface or more for other types of development.<sup>38</sup> Other mitigation criteria options include the 90<sup>th</sup> percentile 24-hour rainfall event (used by the State of Maryland) and the six month 24 hour rainfall event (used by the State of Washington).

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<sup>33</sup> *Sizing and Design Criteria for Storm water Quality Infrastructure, Presentation at California Regional Water Quality Control Board Workshop on Standard Urban Storm Water Mitigation Plans*, August 10, 1999, Alhambra, CA., R.A. Brashear, Camp Dresser McKee.

<sup>34</sup> *City of Seattle Municipal Code, Chapter 22.802.015* – Storm water, drainage and erosion control requirements.

<sup>35</sup> *Urban Storm Drainage, Criteria Manual – Volume 3, Best Management Practices, Urban Drainage and Flood Control District, Denver, CO* (1999). Manual provides detail design criteria for new development for the Denver Metropolitan area.

<sup>36</sup> *Maryland Storm Water Design Manual* - (Maryland Department of the Environment 2000).

<sup>37</sup> *Florida Development Manual: A Guide to Sound Land and Water Management* (Florida Department of Environmental Protection 19xx). The manual describes structural and non-structural construction and post construction BMPs design criteria.

<sup>38</sup> *Storm Water Management in Washington State Volumes 1 – 5*. (Washington Department of Ecology 2001). The volumes 1,3 and 5 are most relevant to new development standards and cover Hydrologic and Flow Control Designs, Minimum Technical Requirements and Treatment BMPs. The volumes were adopted as statewide standards in late 2001.

On a national level, the USEPA is planning to standardize minimum BMP design and performance criteria for post-construction BMPs, and will likely build from the experience of effective state and local programs to establish national criteria.<sup>39</sup> The USEPA, based on the NURP, supports the first half-inch of rainfall as generating first flush runoff.<sup>40</sup> First flush runoff is associated with the highest pollutant concentrations, and not pollutant load. The USEPA considers the first flush treatment method, the rainfall volume method, and the runoff capture volume method as common approaches for sizing of water quality BMPs.

**Background:**

On April 22, 1999, the Regional Board approved a List of BMPs for MS4 Permittees to select from and required implementation of the most effective BMPs in their Development Planning and Development Construction programs.<sup>41</sup>

The Final SUSMP was issued on March 8, 2000. It established new development and significant redevelopment conditions for all projects in the following categories:

- 10 or more home subdivision;
- 100,000+ square-foot commercial development;
- Automotive repair facilities;
- Retail Gasoline Outlets;
- Restaurants;
- Parking lots more than 5,000 square feet or more than 25 parking spaces
- Hillside located single-family dwelling,
- Construction projects adjacent to, in, or discharging directly to Environmentally Sensitive Areas

The SUSMP included numerical design criteria for structural and treatment control BMPs. These criteria are:

Mitigate (infiltrate or treat) storm water runoff from either:

- a) the 85<sup>th</sup> percentile 24-hour runoff event, determined as the maximized capture storm water volume for the area from the formula recommended by the WEF and ASCE study<sup>42</sup>;

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<sup>39</sup> *Storm Water Phase II Final Rule* – 64 Fed. Reg. 68759. See USEPA’s discussion on construction and post-construction BMP requirements for Phase II.

<sup>40</sup> *A Watershed Approach to Urban Runoff: Handbook for Decisionmakers*, Terrene Institute and USEPA Region 5 (1996). See discussion on sizing rules for water quality purposes, p 36.

<sup>41</sup> (Board Resolution No. 99-03).

<sup>42</sup> *In Urban Runoff Quality Management, WEF Manual of Practice No. 23, ASCE Manual and Report on Engineering Practice No. 87*. WEF, Alexandria, VA; ASCE, Reston, VA. (1998).

- b) the annual runoff volume, based on unit basin storage water quality volume, to achieve 80 percent or more volume treatment by the method recommended in the BMP Handbook;<sup>43</sup>
- c) the volume of runoff produced from each and every storm event up to and including 0.75 inch of rainfall, prior to its discharge to a storm water conveyance system; or
- d) the volume of runoff produced from each and every storm event up to and including a historical-record based reference 24-hour rainfall criterion for “treatment” (0.75 inch average for the Los Angeles County area) that achieves approximately the same reduction in pollutant loads achieved by the 85<sup>th</sup> percentile 24-hour runoff event; and/or
- e) the flow of runoff produced from a rain event equal to at least 0.2 inches per hour intensity; or
- f) the flow of runoff produced from a rain event equal to at least two times the 85<sup>th</sup> percentile hourly rainfall intensity for Los Angeles County; or
- g) the flow of runoff produced from a rain event that will result in treatment of the same portion of runoff as treated using volumetric standards above.

The State Board issued a precedential decision<sup>44</sup> on the matter in Order WQ 2000-11, largely sustaining the SUSMP as approved by the Regional Board. The State Board amended the SUSMP to limit its application to discretionary projects as defined by CEQA, eliminated the category for projects in environmentally sensitive areas, and set aside the requirement for retail gasoline outlets to treat storm water until a threshold is developed in the future. In addition, the State Board articulated its support for regional solutions and the mitigation banking.

The SUSMP requirements were amended to clarify implementation, make it consistent with recent Regional Board actions, and where appropriate correct procedural and other deficiencies identified by the State Board in its SUSMP ruling. The changes included:

- SUSMPs for hillside developments that are 1 acre or more. Hillside residential homes below the threshold would be required to incorporate BMPs to facilitate drainage and pollutant removal but would not be subject to the numerical mitigation criteria. Currently, all hillside developments regardless of size are subject to the numerical mitigation criteria. This change normalizes post-construction controls for home developments irrespective of location.

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<sup>43</sup> *California Storm water Best Management Practices Handbook – Industrial/ Commercial*, (1993)

<sup>44</sup> *State Water Board Order WQ 2000-11: SUSMP*; Memorandum from Chief Counsel to Regional Board Executive Officers, (December 26, 2000) discusses statewide policy implications of the decision.

- Numerical design criteria retail gasoline stations, where they meet both thresholds, (i) projected average daily traffic of 100 cars or more; and (ii) 5,000 square feet or more of surface area.
- Clarify that the 100,000 square feet commercial development includes heavy industrial development. The category is designated 'industrial/commercial'.
- Lower the industrial/commercial category threshold from 100,000 square feet to 1-acre (43,560 square feet) beginning March 9, 2003, to be consistent with the USEPA Phase 2 storm water regulations for small construction projects.
- SUSMP requirements apply to all developments, both ministerial and discretionary. As presently implemented the SUSMP requirements apply to only discretionary projects as defined under CEQA.
- SUSMP requirements apply to projects situated in, adjacent to, or discharging directly to environmentally sensitive areas where the development (a) creates 2,500 square feet or more of impervious area, and (b) discharge storm water and urban runoff that is likely to impact a sensitive biological species or habitat.
- Redevelopment clarification.

## VI. MONITORING PROGRAM

### **Background:**

Using data collected from a monitoring program, storm water management efforts can be prioritized, helping limited resources be most effective in improving receiving water quality. For example, a monitoring program can provide data that can allow for specific receiving waters and watersheds to be targeted for urban runoff management and education efforts based on their need. Particular pollutants and their sources can also be identified and targeted using monitoring data. In addition, monitoring data can be useful in assessing the effectiveness of an urban runoff management program. Successful efforts that have resulted in receiving water quality improvements can be analyzed for use elsewhere, while areas that need follow-up efforts can also be identified. In general, a comprehensive monitoring program can supply a wealth of data that can be used in a wide range of applications for improving water quality.

### **Storm Water Monitoring History:**

In the 1994-95 storm season, the Los Angeles County Department of Public Works began monitoring storm water quality in Los Angeles County. The first two years of monitoring were conducted pursuant to the 1990 permit. Over the past five years, the Los Angeles County storm water monitoring program consisted of four main components: mass emission monitoring, land use monitoring, critical source monitoring, and a Santa Monica Bay receiving water study. The results of each objective are summarized below.

- **Mass Emission Monitoring**

Mass emissions were monitored for four major watersheds: Ballona Creek, Malibu Creek, Los Angeles River, and San Gabriel River. The County also monitored mass emissions from Coyote Creek, although it was not a requirement of Order 96-045. The mass emission monitoring identified the Los Angeles River as consistently contributing the most zinc, copper, and suspended solids<sup>45</sup>. Sixteen chemical constituents of concern were identified from the comparison of mass emission annual concentrations to the objectives of the Ocean Plan, Basin Plan, and the CTR (several other constituents of concern were identified through research)<sup>1</sup>. The mass emission monitoring was also successful at identifying toxic levels of zinc and copper from Ballona Creek discharge, toxicity in the Los Angeles and San Gabriel Rivers, and the extent of severity of bacterial indicators in both dry and wet weather.

- **Land Use Monitoring**

The County selected eight land use types to be monitored to identify sources of pollutants in storm water monitoring. These land uses include retail/commercial, vacant, high-density single family residential, transportation, light industrial, education, multifamily residential, and mixed residential. The land use monitoring identified light industrial, transportation, and retail/commercial land uses as producing the highest median concentrations for total and dissolved zinc<sup>1</sup>. Light industrial and transportation displayed the highest median concentrations for total and dissolved copper, and light industrial produced the highest concentrations of suspended solids. The majority of the Land Use monitoring requirement was completed, however, Event Mean Concentrations (EMCs) for several constituents (many due to the lowering of method detection limits) were not achieved. Pesticide, nutrient, and PAHs are among the constituents that do not have EMCs for most land uses.

- **Critical Source Monitoring**

Five critical sources, including industrial and commercial facilities, were monitored to evaluate the effectiveness of voluntary good housekeeping and preventative BMPs. The critical sources included in the study were motor freight, auto dealers, chemical manufacturing, machinery manufacturing, and rubber/plastics. The critical source monitoring program identified fabricated metal businesses as producing the highest median concentrations for zinc, copper, and suspended solids<sup>46</sup>. The inability to require or control the implementation of BMPs made this study somewhat ineffective at evaluating BMP effectiveness. In most cases, there was no significant difference in pollutant levels from critical sources with and without BMPs. However, levels of total and dissolved copper at the fabricated metal industry were significantly reduced with the implementation of BMPs<sup>1</sup>.

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<sup>45</sup> Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report, Los Angeles County Department of Public Works

<sup>46</sup> *Ibid.*

- **Receiving Water Study**

A three-year study was conducted to assess the impacts of urban storm water runoff, specifically ecosystem health, on the receiving waters of the Santa Monica Bay. The study examined plume characteristics, water column and seafloor biology. Ballona and Malibu Creek were compared to evaluate the effects of different watershed types. The study discerned the presence of well-developed plumes containing toxic materials, identified zinc and copper as contaminants in Ballona Creek, and concluded that sediments offshore of Ballona Creek generally had higher concentrations of urban contaminants. These findings demonstrate the need for further studies and for the identification of sources of toxic pollutants.

**New Storm Water Monitoring Program:**

The objectives of the Storm Water Monitoring Program include, but are not limited to: 1) assessing compliance with the MS4 permit; 2) measuring and improving the effectiveness of the SQMP; 3) assessing the chemical, physical, and biological impacts of receiving waters resulting from urban runoff; 4) characterization of storm water discharges; 5) identifying sources of pollutants; and 6) assessing the overall health and evaluating long-term trends in receiving water quality.

**Mass Emissions Monitoring**

Seven mass emissions stations will continue to be monitored, including stations in: Ballona Creek, Malibu Creek, Los Angeles River, San Gabriel River, Coyote Creek, Dominguez Channel, and the Santa Clara River.

**Method Detection Limits**

The Minimum Levels (MLs) listed in Appendix 4 of the State Board Policy for Implementation of Toxics Standards for Inland Surface Water, Enclosed bays, and Estuaries of California, 2000 (SIP) represent the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix interferences.<sup>47</sup> These MLs must be incorporated into all water quality monitoring programs to detect priority toxic pollutants. The MLs are the only established criteria that take into consideration recent improvements in chemical analytical methods. If they are not used in the storm water program, concentrations of concern of priority toxic pollutants may not be detected, which has occurred throughout the history of the Los Angeles County storm water monitoring program. Detection and control of toxic pollutants in surface waters is necessary to achieve the CWA's goals and objectives.<sup>48</sup> Numeric criteria for toxic pollutants is necessary to evaluate the adequacy of existing and potential control measures to protect aquatic ecosystems and human health.<sup>49</sup> Also, using MLs will provide quantifiable data that is necessary to better assess water quality and to develop Waste Load Allocations and Load Allocations for TMDLs. Furthermore, non-detects cannot be used to accurately determine mass loadings. The criteria established in the CTR are legally applicable in the State of California for inland surface waters, enclosed bays and estuaries for all purposes and

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<sup>47</sup> SIP

<sup>48</sup> 65 Fed. Reg. 31683

<sup>49</sup> *Id.*

programs under the CWA.<sup>50</sup> Section 402(p)(3)(B)(iii) gives USEPA and states the authority to incorporate appropriate water quality-based effluent limitations in NPDES permits for discharges from MS4s.<sup>51</sup> The MLs have been incorporated in Attachment U-1 of the Monitoring and Reporting Program.

### TSS Monitoring

Every storm greater than 0.25 inch shall be sampled and analyzed for TSS. The purpose of this requirement is to consider the high variability of storm water discharges and determine more accurate average mass emission values. The high variability of storm water makes it unlikely to characterize a storm season based on a few mass emission samples. Studies show that the median event mean concentration for storm water programs that do not sample every storm is consistently biased low, relative to the annual flow-weighted mean<sup>52</sup>. To adequately characterize a storm and capture central tendencies, many storms would need to be sampled. However, this is cost-prohibitive. Therefore, the correlation between TSS and trace metals should be used. Studies have indicated that runoff contaminants tend to be highly correlated with suspended solids in large rivers and creeks throughout southern California<sup>53</sup>. TSS measurements are one-tenth the cost of trace metal analyses. However, TSS concentrations accounted for up to 95% of the variability in some trace metal concentrations in a study of the Santa Ana River (urbanized watershed in Orange County) conducted by the Southern California Coastal Water Research Project (SCCWRP)<sup>2</sup>.

### Water Column Toxicity Monitoring

Storm water samples were found to be toxic in the Los Angeles River, the San Gabriel River, Ballona Creek, and the Santa Monica Bay, demonstrating the need for this toxicity monitoring requirement.

Toxicity testing is used to assess the impact of storm water pollutants on the overall quality of aquatic systems<sup>54</sup>. It can be a very useful tool for storm water managers. The Center for Watershed Protection rated toxicity testing as a "very useful" indicator for assessing municipal storm water programs. Toxicity testing can also be used to evaluate the effectiveness of storm water BMPs and other storm water pollution reduction measures<sup>55</sup>. Managers can use the results of toxicity testing to identify areas of high concern and to establish priority locations for BMPs. Furthermore, Toxicity Identification Evaluations (TIEs) and Toxicity Reduction Evaluations (TREs) can be used to identify specific pollutants and their sources so that management actions can be more specifically prioritized.

Previous toxicity testing was only conducted using the *Strongylocentrotus purpuratus* (sea urchin) fertilization test, a marine species. Toxicity testing using multiple species is

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<sup>50</sup> 65 Fed. Reg. 31682

<sup>51</sup> 65 Fed. Reg. 31703

<sup>52</sup> Temporal variability patterns of stormwater concentrations in urban stormwater runoff. Leisl L. Tiefenthaler, Kenneth C. Schiff, and Molly Leecaster, Southern California Coastal Water Research Project (SCCWRP) annual Report 2000.

<sup>53</sup> SCCWRP. 1992. Surface Runoff to the Southern California Bight.

<sup>54</sup> Center for Watershed Protection, Environmental Indicators to Assess Stormwater Control Programs and Practices (1996).

<sup>55</sup> Ibid.

needed to provide a more complete assessment of the causes of toxicity in storm water<sup>56</sup>. The identification of zinc and copper as contaminants of concern in previous studies in the County were based primarily on studies with the sea urchin. Reliance on single species tests may not provide an accurate assessment of toxicity<sup>57</sup>. Because different species vary in their sensitivity to contaminants, tests with multiple species are needed to determine if other contaminants are present at toxic concentrations<sup>58</sup>. Specifically, an organism that is sensitive to pesticides, which have been found to be important factors in the toxicity of storm water from other watersheds, should be used<sup>59</sup>. USEPA recommends the use of the *Ceriodaphnia dubia* (water flea) reproduction and survival test for the measurement of receiving water toxicity. The water flea is one of the most sensitive aquatic species to diazinon, whereas the sea urchin fertilization test is insensitive to organophosphorus pesticides<sup>60</sup>. By contrast, sea urchin sperm are approximately 10 times more sensitive to trace metals than are water fleas.

Furthermore, the toxicity component of the Monitoring Program should include toxicity identification procedures so that potential constituents of concern can be confirmed and others can be discounted. TIEs are needed to prioritize management actions.

Two wet weather and two dry weather samples will be analyzed for toxicity from each mass emission station every year. When a sample is substantially toxic to either test species, a Phase I TIE will begin immediately. Substantial toxicity means the amount of toxicity necessary to successfully conduct a Phase I TIE. For example, *Ceriodaphnia* TIEs require at least 50% mortality in undiluted sample at any time during the 7-day duration of the initial chronic bioassay.<sup>61</sup> If enough toxicity is not present at the beginning of a TIE, it cannot be successfully completed. The City of Long Beach Storm Water Monitoring Program has been modified to include similar TIE procedures.

Based on the results from the Long Beach Monitoring Report, the Regional Board determined that using consecutive hits of toxicity in storm water as a trigger for a TIE does not yield adequate results. For example, every single storm event sampled at the Long Beach mass emission stations was toxic to some extent to at least one of the three species tested, but only one TIE was conducted on one species.<sup>62</sup> Also, due to the high variability of storm water, there is no guarantee that substantial toxicity will be present after the two consecutive hits. To increase the chances of a successful TIE and to better identify all causes of toxicity in storm water, TIEs should begin immediately when substantial toxicity is detected in a sample.

Furthermore, after a toxic pollutant or class of pollutants is identified as causing at least 50% of the toxic responses in at least 3 samples at a sampling location, Toxicity Reduction Evaluations (TRE) will be conducted. If a Phase I TIE only identifies a broad category of toxicants (i.e., nonpolar organics), additional TIE analysis, to the extent possible, will be conducted until the source of toxicity is identified. The purpose of this requirement is to evaluate the extent and causes of toxicity in inland and coastal receiving waters, and to eliminate or reduce the sources of toxicity in storm water.

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<sup>56</sup> Bay, Jones, Schiff. Study of the Impact of Stormwater Discharge on Santa Monica Bay (1999).

<sup>57</sup> Center for Watershed Protection

<sup>58</sup> Bay, et al.

<sup>59</sup> Bay, et al.

<sup>60</sup> Kinetic Laboratories, inc., City of Long Beach Storm Water Monitoring Report (2000-2001).

<sup>61</sup> SCCWRP

<sup>62</sup> City of Long Beach Storm Water Monitoring Report, 2000-2001. Kinetic Labs, Inc. and SCCWRP

TRE development and implementation is directly tied to the SQMP, to ensure that management actions are taken when problems are identified. The Principal Permittee expressed concern to Regional Board staff that the TRE requirement could potentially be too involved and costly to be completed with the available funds and resources during the course of the Order. To address this concern, the Regional Board clarified the TRE language. It was decided that a third party should be involved in the source analysis and BMP recommendations, and that each Permittee shall be responsible for the implementation of BMPs in their areas of jurisdiction that are causing or contributing to toxicity. The Principal Permittee is responsible for retaining a neutral third party to evaluate possible sources of toxicity and recommend appropriate BMPs, based on available information. Regional Board staff agreed with the Principal Permittee's proposed funding limit for TRE development, to ensure that the majority of the monitoring budget is not used for TRE purposes.

In addition to the funding limit, the Principal Permittee is also encouraged to coordinate TREs with concurrent TMDLs where overlap exists. If a TMDL is being developed or implemented for an identified toxic pollutant, much of the work necessary to meet the objectives of a TRE may already be underway, and information and implementation measures should be shared.

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

### **Tributary/Source Identification Monitoring**

Based on the results of previous storm water quality monitoring and toxicity testing, there is a need to monitor subwatersheds to determine pollutant sources and prioritize management actions. Exceedances of various pollutants, including toxic levels of zinc and copper in the Ballona Watershed, have been occurring at the mass emission stations for many years, but there has not yet been an effort to monitor tributaries to determine where the pollutants are actually coming from.<sup>63</sup> Regional Board staff worked with Los Angeles County staff, and other interested stakeholders, to design a tributary monitoring program.

### **Shoreline Monitoring**

The City of Los Angeles has conducted shoreline and nearshore water quality monitoring off the Santa Monica Bay since the 1950s under the monitoring program for the Hyperion Waste Water Treatment Plant (NPDES No. CA0109991). The monitoring results indicate that effluent from Hyperion's 5-Mile Outfall does not impinge the shoreline, and that elevated bacterial counts are associated with runoff from storm drains and discharges from piers. In 1994, the Regional Board approved the relocation of Hyperion's shoreline stations to implement a bay-wide, regional shoreline monitoring program associated with storm drain outfalls in the Santa Monica Bay. The City of Los Angeles requested that the shoreline monitoring requirement be incorporated in this

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<sup>63</sup> Los Angeles County 1994-2000 Integrated Receiving Water Impacts Report, July 31, 2000. LA County DPW, SCCWRP, Woodward Clyde.

Order. Regional Board staff and the County of Los Angeles determined that the shoreline monitoring is an appropriate requirement for the storm water monitoring program, per the conditions listed in Section D of the Monitoring Program.

### **Trash Monitoring**

Trash is a pollutant that impacts storm water runoff, and a trash monitoring program is included in the MS4 permit. The permit requirements are consistent with the monitoring language in the trash TMDLs for the Los Angeles River Watershed and the Ballona Creek Watershed<sup>64</sup>.

### **Regional Monitoring**

Regional Monitoring efforts address public health concerns, monitor trends in natural resources and nearshore habitats, and assess regional impacts from all pollutant sources. Los Angeles County is a major discharger in this region and should participate in regional programs. Also, participation in Regional Monitoring, such as the SCCWRP Bight-wide study in 2003, can accomplish several goals of the Monitoring Program.

### **Bioassessment**

Bioassessment data can be an important indicator of stream health and storm water impacts. It can detect impacts that chemical and physical monitoring cannot. In the Interpretive Policy Memorandum on Reapplication Requirements for Municipal Separate Storm Sewer Systems, EPA encourages permitting authorities to consider requiring biological monitoring methods to fully characterize the nature and extent of storm water problems. Therefore, this Regional Board and other Regional Boards commonly require bioassessment monitoring in storm water and point source NPDES permits.

However, the fact that a biological index does not yet exist for this region is an issue that Regional Board staff took into consideration for this requirement. Without a biological index, including reference conditions and knowledge of background variability, data cannot be fully analyzed to accurately indicate stream health or impacts. However, it can be used to determine trends in the biological community, and it is necessary for index development. Also, bioassessment data can be analyzed in the future, after an index is developed.

Considering the importance of bioassessment and the need for an index, the Principal Permittee is required to develop a bioassessment program as part of a regional effort (Southern California Stormwater Research/Monitoring Program) and to coordinate with the Surface Water Ambient Monitoring Program (SWAMP), organized by the Regional Board. This is to ensure that the most useful data is collected for the purposes of detecting biological trends in receiving waters and for developing a biological index.

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<sup>64</sup> Trash Total Maximum Daily Loads for the Los Angeles River Watershed, August 9, 2007, Regional Board Resolution R07-012, and for the Ballona Creek Watershed, March 4, 2004, Regional Board Resolution R04-023

### **BMP Effectiveness Study**

The BMP Effectiveness Study is an integral part of the storm water monitoring program. It is necessary to document the effectiveness of treatment control BMPs so that the storm water management agency can make informed decisions on the use of BMPs.

**ATTACHMENT A  
TO  
FACT SHEET SUPPORTING ORDER NO. R4-2011-XXX**

INCORPORATION OF PERMIT CONDITIONS CONSISTENT WITH THE ASSUMPTIONS AND  
REQUIREMENTS OF THE SUMMER DRY WEATHER WASTELOAD  
ALLOCATIONS FOR BACTERIA ESTABLISHED IN THE  
SANTA MONICA BAY BEACHES BACTERIA TMDL

**Introduction**

The following attachment describes and provides the rationale for the manner in which the Los Angeles Regional Water Quality Control Board (Regional Board) staff proposes to incorporate permit conditions into the LA County Municipal Separate Storm Sewer System (MS4) Permit consistent with the assumptions and requirements of the Santa Monica Bay Beaches Bacteria (SMB Beaches Bacteria) Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for summer dry weather discharges from the MS4 to Santa Monica Bay beaches as required by federal and state laws and regulations. The incorporation of the summer dry weather WLAs allows the enforcement of these WLAs during the upcoming summer months, when beach usage is at its highest and the risk to public health from non-compliance with the WLAs is greatest.

**TMDL History**

The Regional Board adopted a dry weather bacteria TMDL, including WLAs, to address documented bacteriological water quality impairments at 44 beaches along the Santa Monica Bay from the Los Angeles/Ventura County line, to the northwest, to Outer Cabrillo Beach, just south of the Palos Verdes Peninsula. The WLAs for bacteria during summer dry weather (April 1 to October 31) for the LA County MS4 Permittees that discharge to the Santa Monica Bay are set at zero allowable exceedance days of the single sample bacteria objectives and no exceedances of the geometric mean bacteria objectives at each beach location for the protection of public health. These WLAs are based on local and national epidemiological studies, the results of which have shown increased risk of illness above the indicator bacteria thresholds used in the TMDL (Haile et al. 1999; USEPA 1984).

Dry weather is defined in the TMDL as those days with less than 0.1 inch of rainfall, and more than three days after a rain day (consistent with the 72-hour period used by the County Department of Health Services to post beaches with rain advisories). The TMDL defines rain days as those days with greater than or equal to 0.1 inch of rainfall (0.1 inch of rainfall is the minimum amount of rainfall that will produce runoff and is also the smallest unit of measure on standard rain gauges operated by flood management agencies). Discharge from the MS4 to SMB beaches on a summer dry weather day is identified as a category of non-storm water discharge.

The summer dry weather bacteria TMDLs were adopted to reduce the risk of illness associated with swimming in marine waters contaminated with human sewage and other sources of bacteria. Over 55 million beachgoers visit SMB Beaches annually. The summer dry weather period (April 1 to October 31) is the highest period of beach use. A recent study estimated that there is a substantial economic and public health cost associated with swimming in waters contaminated with bacteria. Regionally, this study estimated that between 627,800 and 1,479,200 excess gastrointestinal illness cases may occur annually among swimmers in Los

Angeles County and Orange County beaches as a result of enterococci contaminated waters. The corresponding economic loss annually has been estimated to range from \$21 million to \$51 million. (*Regional Public Health Cost Estimates of Contaminated Coastal Waters: A Case Study of Gastroenteritis at Southern California Beaches*, Given S., L.H. Pendelton, and A.B. Boehm. Env. Sci. Technol. (2006).)

The Regional Board adopted the SMB Beaches Bacteria TMDL in 2002 as an amendment to the Los Angeles Region's Basin Plan (Resolution No. 2002-004). This TMDL was subsequently approved by the State Water Resources Control Board, Office of Administrative Law, and the United States Environmental Protection Agency and became effective on July 15, 2003. This TMDL required compliance with the summer dry weather WLAs by July 15, 2006. The SMB Beaches Bacteria TMDL specifies that the WLAs will be implemented through MS4 permits. TMDLs are not self-executing, but instead rely upon further Board orders to impose pollutant restrictions on dischargers to achieve the TMDL's WLAs. Federal regulations require that NPDES permits must include conditions consistent with the assumptions and requirements of any available waste load allocation (40 CFR 122.44(d)(vii)(B)). Similarly, state law requires both that the Regional Board implement its Basin Plan when adopting waste discharge requirements (WDRs) and that NPDES permits apply "any more stringent effluent standards or limitations necessary to implement water quality control plans..." (Wat. Code §§ 13263, 13377).

#### *Summary of Permit Requirements to Implement SMB Beaches Summer Dry Weather WLAs for Bacteria*

The tentative permit incorporates the SMB Beaches Bacteria summer dry weather WLAs as receiving water limitations and a supporting prohibition on summer dry weather discharges from the MS4 that cause or contribute to exceedances of the receiving water limitations. The LA County MS4 Permit already prohibits discharges that cause or contribute to the exceedance of water quality standards. The proposed changes make more specific that prohibition as it relates to summer dry weather discharges containing bacteria that could impair water quality at Santa Monica Bay beaches during summer dry weather. The proposed permit establishes permit conditions that are consistent with the assumptions and requirements of the SMB Beaches summer dry weather WLAs for bacteria and will, therefore, ensure the attainment of the TMDL's WLAs as required by the Los Angeles Region Basin Plan.

The proposed changes will affect the following LA County MS4 Permittees: County of Los Angeles, Los Angeles County Flood Control District, the Cities of Agoura Hills, Beverly Hills, Calabasas, Culver City, El Segundo, Hermosa Beach, Hidden Hills, Inglewood, Los Angeles, Malibu, Manhattan Beach, Palos Verdes Estates, Rancho Palos Verdes, Redondo Beach, Rolling Hills, Rolling Hills Estates, Santa Monica, Torrance, West Hollywood, and West Lake Village.

### **Statutory History and Requirements**

#### *Clean Water Act Section 303(d): Impaired Waters and TMDLs*

The CWA §303(d)(1)(A) requires each State to conduct a biennial assessment of its waters, and identify those waters for which technology based effluent limitations are not stringent enough to achieve water quality standards. These waters are identified as impaired waters on the State's 303(d) list of water quality limited segments. The CWA also requires States to establish a priority ranking for waters on the 303(d) list and to develop and implement TMDLs for these waters.

“A TMDL defines the specified maximum amount of a pollutant which can be discharged or ‘loaded’ into [impaired waters] from all combined sources” and still allow the waterbody to meet water quality standards (*Dioxin/Organochlorine Center v. Clarke* (9<sup>th</sup> Cir. 1995) 57 F.3d 1517, 1520). A TMDL allocates the acceptable pollutant load to point and nonpoint sources. The elements of a TMDL are described in 40 CFR 130.2 and 130.7. A TMDL is defined as “the sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background” (40 CFR 130.2).

Upon establishment of TMDLs by the State or the U.S. EPA, the State is required to incorporate the TMDLs into the State Water Quality Management Plan (40 CFR 130.6 (c) (1), 130.7). The Water Quality Control Plan for the Los Angeles Region (Basin Plan), and applicable statewide plans, serves as the State Water Quality Management Plan governing the watersheds under the jurisdiction of the Regional Board. When adopting TMDLs as a part of its Basin Plan, the Regional Board includes, as part of the TMDL, a program for implementation of the wasteload allocations for point sources and load allocations for nonpoint sources.

Essentially, TMDLs serve as a backstop provision of the CWA designed to implement water quality standards when other provisions have failed to achieve water quality standards.

#### *Clean Water Act Section 402(p): NPDES Permits for MS4s*

The Federal Clean Water Act (CWA) generally prohibits the “discharge of any pollutant,” 33 U.S.C. § 1311(a), from a “point source” into the navigable waters of the United States. 33 U.S.C. § 1362(12)(A). An entity can, however, obtain a National Pollutant Discharge Elimination System (NPDES) permit that allows conditionally for the discharge of some pollutants. 33 U.S.C. § 1342(a)(1). The CWA defines point sources as “discernible, confined and discrete conveyances, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure” such as a pipe, ditch, container, rolling stock, concentrated animal feeding operation, landfill leachate collections system, vessel or other floating craft from which pollutants are or may be discharged. 33 U.S.C. § 1362; 40 CFR 122.2.

In 1987, the U.S. Congress enacted the Water Quality Act recognizing both the environmental threats posed by storm water runoff and the U.S. EPA’s problems in implementing regulations for storm water discharges (NRDC II, 966 F.2d at 1296). These Amendments to the CWA established new statutory requirements to control industrial and municipal storm water discharges to waters of the United States (CWA § 402(p).) The amendments require NPDES permits for storm water discharges from Municipal Separate Storm Sewer Systems (MS4s) to waters of the United States, and classify discharges from MS4s as a “point source”.

The storm water discharge permits for MS4s (i) may be issued on a system- or jurisdiction-wide basis; (ii) shall include a requirement to effectively prohibit [unauthorized] non-storm water discharges into the storm sewers; and (iii) shall require controls to reduce the discharge of pollutants from storm water to the maximum extent practicable, 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. (See CWA §402(p) (3) (B)).

Generally, discharges of pollutants that are covered under a NPDES permit must comply with (i) effluent limitations necessary to achieve compliance with technology based standards **as well as** (ii) **any more stringent effluent limitation “necessary to meet water quality standards”**

(emphasis added) (33 U.S.C. § 1311(b)(1)(C)). In the case of MS4 NPDES discharge permits, federal courts have ruled that the CWA grants the permitting agency discretion to determine what pollutant controls are appropriate for discharges from MS4s. The federal courts held that the permitting agency has discretionary authority under “33 U.S.C. § 1342(p)(2)(E) to determine that ensuring strict compliance with state water-quality standards is necessary to control pollutants, or to require less than strict compliance with state water-quality standards, such as a BMP approach” (*Defenders of Wildlife v. Browner*, 191 F.3d 1159 (9<sup>th</sup> Cir., 1999)). Under 33 U.S.C. § 1342(p)(3)(B)(iii), the permitting authority has the choice to include either best management practices or numeric limitations in the permits. NRDC II, 966 F.2d at 1308 (“Congress did not mandate a minimum standards approach or specify that [the] EPA develop minimal performance requirements.”).

Even early in the regulatory program for MS4s, the U.S. EPA stated that if the Permittee(s) fails to implement adequate BMPs to prevent exceedance of the receiving water objectives, the permitting authority “may have to consider other approaches to water quality protection” (61 Fed. Reg. 43761; *Interim Permitting Approach*, Response #6, EPA 833-D-96-00, 1996; Order WQ 91-03).

### **Regulatory Scheme**

On November 16, 1990, pursuant to CWA § 402(p), the U.S. EPA promulgated regulations at 40 CFR 122.26 which established requirements for storm water discharges under the NPDES program. The U.S. EPA defines storm water at 40 CFR 122.26 (b)(13) as ‘storm water runoff, snow melt runoff, and surface runoff and drainage’ [related to storm events or snow melt] (55 Fed. Reg. 47990, 47995). Non storm water discharges to the MS4 are to be “effectively prohibited” by the MS4 owner/operator. “Effective prohibition” meant that the MS4 Permittee was to implement programs to eliminate non-stormwater discharges to the storm drain system unless authorized under NPDES permits issued independent of the MS4 permit (55 Fed. Reg. 47995). The storm water regulations also intended to not hold MS4 Permittees responsible for certain categories of non storm water discharges, such as uncontaminated ground water infiltration, natural springs, rising groundwater, stream and diversions, from the MS4 **as long as they are not a source of pollutants and their exempt status is consistent with antidegradation policies and TMDLs**. Such discharges might need to be addressed under independent NPDES permits when specifically identified on a case-by-case basis by the MS4 Permittee or the permitting authority.

Early in the stormwater regulatory program, the U.S. EPA encouraged states to primarily address storm water discharges from the MS4 through the implementation of BMPs on an iterative approach because of the intermittent and variable nature of storm flows and pollutant concentrations as well as insufficient data rather than numerical effluent limitations (61 FR 43761). However, the U.S. EPA’s scheme for **non-storm water discharges from the MS4** is to bring them under the existing framework of the NPDES program at 40 CFR 122.44(d). (55 Fed. Reg. 47995). Non-numerical limitations such as BMPs for non-storm water discharges may be authorized only where numerical limits are not feasible (40 CFR 122.44(k)). In any case, if the Permittee fails to implement adequate BMPs to prevent exceedance of the receiving water objectives, the permitting authority “may have to consider other approaches to water quality protection” (61 Fed. Reg. 43761; *Interim Permitting Approach*, Response #6, EPA 833-D-96-00, 1996).

The U.S. EPA has issued guidance for establishing WLAs for storm water discharges in TMDLs and their incorporation as numerical limitations in MS4 Permits (U.S. EPA. 2010. “Revisions to the November 22, 2002 Memorandum ‘Establishing Total Maximum Daily Load Wasteload

Allocations for Storm Water Sources and NPDES Permit Requirements Based on those WLAs’.” Office of Wastewater Management and Office of Wetlands, Oceans and Watersheds. November 12, 2010.).

Since provisions in NPDES permits must reflect the assumptions and requirements of available TMDLs (40 CFR 122.44 (d)(1)(vii)(B)), the NPDES permit must incorporate the WLAs as numeric Water Quality Based Effluent Limitations (WQBEL), where feasible, or as BMPs (reasonably expected to achieve the WLAs when implemented and properly maintained), under specified circumstances (40 CFR 122.44(k)(2) & (3)). USEPA’s current position is that, “[w]here the TMDL includes WLAs for stormwater sources that provide numeric pollutant load or numeric surrogate pollutant parameter objectives, the WLA should, where feasible, be translated into numeric WQBELs in the applicable stormwater permits” (USEPA 2010). Where a non-numeric requirement is selected, if a numeric WQBEL is not feasible, the permit’s administrative record must support the expectation that the BMPs are sufficient to achieve the WLAs. (40 CFR 124.8, 124.9, and 124.18.) The guidance, however, does not address non-storm water discharges from an MS4.

### **State Regulatory Authority and Permit History**

The State of California is one of forty-five States with duly delegated authority under the CWA to implement the NPDES permitting program. The Porter-Cologne Act (California Water Code) authorizes the State Board, through the nine regional boards, to issue NPDES permits, and regulate and control the discharge of pollutants into waters of the State.

The LA County MS4 Permit requires Permittees to develop, and implement a timely, comprehensive storm water pollution control program to reduce the discharge of pollutants in storm water to the Maximum Extent Practicable (MEP) to the waters of the U.S. and to effectively prohibit non-stormwater discharges to the MS4. In addition, it states that discharges from the MS4 to waters of the U.S. including Santa Monica Bay are required to meet water quality standards. Upon establishment of TMDLs by the State or the U.S. EPA, the State is required to incorporate the TMDLs into the State Water Quality Management Plan (40 CFR 130.6 (c) (1), 130.7). The Water Quality Control Plan for the Los Angeles Region (Basin Plan), and applicable statewide plans, serves as the State Water Quality Management Plan governing the watersheds under the jurisdiction of the LA Water Board. Regional Board-issued NPDES permits must contain provisions consistent with the State Water Quality Management Plan (Wat. Code § 13263).

### **Related State Administrative Actions**

The State Water Board has issued standard receiving water limitations language to be included in municipal storm water permits. (State Board WQO 99-05, which amended WQO 98-01). The State Board affirmed that NPDES storm water permits must prohibit discharges that cause or contribute to violations of water quality standards (See WQ 98-01, at p. 8). The State Water Board had ruled earlier that municipal storm water permits must include effluent limitations necessary to achieve water quality standards (State Board Orders WQ 91-03 and WQ 91-04).<sup>1</sup> The State Board concluded that these may be non-numerical, but also pointed out that if the Permittee(s) fails to implement adequate BMPs to prevent exceedance of the receiving water objectives, the regional boards may have to consider other approaches to water quality protection (Order WQ 91-03).

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<sup>1</sup> In Order WQ 91-04, the State Board reviewed a complaint brought by the environmental community that the 1990 LA County MS4 Permit lacked numerical effluent limits and violated federal law.

Also, Discharge Prohibitions need not be iterative (State Board Order WQ 2001-15, see footnote 18). The State Water Board modified the prohibition in WQO 2001-15, because the plain text in the San Diego County MS4 Permit prohibited the discharge of storm water containing pollutants exceeding water quality standards to the MS4, not non-storm water discharges. The discharge of non storm waters to waters of the U.S. from an MS4 must strictly comply with 33 U.S.C. § 1311(b)(1)(C).

### **Current Status and Basis for Action**

Twenty-one years have passed since adoption of the first MS4 permit for Los Angeles County, while ten years have passed since adoption of the 2001 LA County MS4 permit. LA County MS4 Permittees have had over three permit terms (1990 – present) to implement their stormwater program, including source control programs and an illicit connections/ illicit discharges elimination (IC/IDE) program, and have been accorded ample opportunity to eliminate unauthorized non-storm water discharges from the MS4 that are causing or contributing to the exceedance of a water quality objective, or to require operators of such discharges to be permitted through the Regional Board's NPDES program. In 2001, the LA Water Board revised its single sample and geometric mean water quality objectives for bacteria to reflect U.S. EPA recommended criteria and the findings of a peer-reviewed local epidemiological study (Regional Board Resolution 2001-018)<sup>2</sup> and Permittees should have revised their stormwater management programs to eliminate the exceedances of these Basin Plan objectives. However, few Permittees have made changes to their Storm Water Quality Management Programs in response to exceedances of bacteria objectives at SMB beaches. Dry weather discharges from the MS4 continue to cause violations of bacterial water quality standards at the Santa Monica Bay beaches.

In view of the above, Regional Board staff concludes that it is necessary and feasible to (i) make more specific the prohibition on non-stormwater MS4 discharges, (ii) include numeric receiving water limitations equivalent to the Basin Plan bacteria objectives, and (iii) establish a final date for achieving bacteria water quality objectives in order to ensure the timely elimination of the existing water quality impairment at SMB beaches and, thus, guarantee the protection of public health. This approach is consistent with the recent USEPA memorandum, which encourages the use of numeric limitations in stormwater permits to clarify permit requirements and improve accountability and enforceability (USEPA 2010).

### **Options for Summer Dry Weather WLA Compliance**

Technical options for compliance with the dry weather WLAs for SMB Beaches have been previously analyzed by many Permittees (Santa Monica Bay Beaches Bacteria TMDL Implementation Plan for Jurisdictional Groups 2 and 3, (Feb 2005); Marina del Rey Harbor Mother's Beach and Back Basins Bacteria TMDL Dry- and Wet Weather Implementation Plan (March 2005)). Potential solutions include (i) Institutional (Non Structural source controls) such as public education and restaurant inspections; (ii) Local (Distributed or Decentralized) controls such as small scale infiltration and limited treatment; (iii) Regional controls such as capture, storage and treatment systems including bio-infiltration systems and disinfection system, and (iv) flow diversion to waste water treatment plants. The LA County MS4 Permittees within the Santa Monica Bay Watershed have submitted TMDL Implementation Plans for the LA Water Board's review. The Board reviewed and acknowledged support for these plans under Resolutions 2006-005, 2006-006, 2006-007, and 2006-008.

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<sup>2</sup> As far back as the 1994 update, the Basin Plan included single sample and geometric mean water quality objectives for a subset of the fecal indicator bacteria included in the 2001 amendments.

### **State Grants and Bond Funds for Implementation**

As of 2006, the State Water Board and the LA Regional Water Board have funded a total of 27 projects costing \$18.7 million within the Santa Monica Bay Watershed to address bacterial contamination. Six of these projects worth \$3.5 million dollars are for the treatment of bacteria or pathogens as the primary pollutant. In addition, there are twenty-one Clean Beach Initiative Projects worth \$15.1 million, primarily dry-weather diversion projects, within the Santa Monica Bay. These are managed by the State Water Board and are for bacteria reduction. Most of the projects are underway and are at various stages of completion. Similarly, the Santa Monica Bay Restoration Commission has issued grant funds of about \$5.8 million for 16 projects to treat dry weather flows to Santa Monica Bay, eight of which have been completed.

### **Opportunity for Public Comment**

When approving the Santa Monica Bay Beaches Dry Weather Bacteria TMDL, the State Water Board included findings that state: "The [LA Water Board] will develop permit requirements [to implement the TMDL] through a subsequent permit action that will allow all interested persons, including but not limited to municipal storm water dischargers, to provide input as to how the waste load allocations will be translated into permit requirements." (State Board Resolution 2002-0149.) The LA Water Board sought input on how the summer dry weather WLAs for bacteria would be translated into permit requirements in a public notice circulated on May 18, 2006, which requested comments by June 20, 2006. Numerous commenters requested more time to evaluate the proposed action, a more detailed explanation of how the permit conditions were derived, and consideration of a variety of different approaches to incorporation. As a result, the July 13, 2006 board consideration was postponed, and LA Water Board staff held a workshop on July 21, 2006, to solicit from Permittees and other interested persons the most appropriate way(s) to incorporate the provisions of the TMDL. Specifically suggestions were requested about how the summer dry weather waste load allocations of no exceedance days at the Santa Monica Bay beaches should be translated into enforceable permit requirements in an NPDES permit. Commenters attended the workshop or submitted written comments, all of which have been considered by LA Water Board staff.

### **Recommended Action**

The LA MS4 Permit includes provisions to effectively prohibit unauthorized non-stormwater discharges. Permittees may achieve the effective prohibition by implementing source control measures and an IC/ID Elimination program to remove unauthorized non-stormwater discharges or to get them permitted through the Regional Board's NPDES program. Given the fact that the proposed action seeks to prohibit discharges during summer dry weather from MS4s to SMB Beaches, and that compliance is determined by receiving water limitations, it is a reasonable action by the LA Water Board to protect water quality and human health. Language is included in permit findings to clarify how compliance with the relevant limitations will be determined. The LA Water Board's administrative record adequately supports the proposed approach as being sufficient to meet the SMB beaches summer dry weather WLAs.

The recommended approach includes provisions in Findings; Part 1. Discharge Prohibitions Section; Part 2. Receiving Water Limitations Section; and Part 5. Definitions to incorporate permit conditions consistent with the assumptions and requirements of the SMB Beaches Bacteria Summer Dry Weather WLAs. The provisions include receiving water limitations for bacteria and a prohibition against summer dry weather discharges from the MS4 to Santa Monica Bay that result in an exceedance of the bacteria receiving water limitations.

**ATTACHMENT B  
TO  
FACT SHEET SUPPORTING ORDER NO. R4-2011-XXX**

**INCORPORATION OF PERMIT CONDITIONS CONSISTENT WITH THE  
ASSUMPTIONS AND REQUIREMENTS OF THE SUMMER DRY WEATHER  
WASTELOAD  
ALLOCATIONS FOR BACTERIA ESTABLISHED IN THE  
MARINA DEL REY HARBOR MOTHERS' BEACH AND BACK BASINS BACTERIA  
TMDL**

**Introduction**

The following attachment describes and provides the rationale for the manner in which the Los Angeles Regional Water Quality Control Board (Regional Board) staff proposes to incorporate permit conditions into the LA County Municipal Separate Storm Sewer System (MS4) Permit consistent with the assumptions and requirements of the Marina del Rey Harbor Mothers' Beach<sup>1</sup> and Back Basins Bacteria (MDR Bacteria) Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) for summer dry weather discharges from the MS4 to Marina del Rey Harbor (MDRH) as required by federal and state laws and regulations. The incorporation of the summer dry weather WLAs allows the enforcement of these WLAs during the upcoming summer months, when beach usage is at its highest and the risk to public health from non-compliance with the WLAs is greatest.

**TMDL History**

The Regional Board adopted the MDR Bacteria TMDL, including WLAs, to address documented bacteriological water quality impairments at Mothers' Beach and Basins D, E, and F in Marina del Rey Harbor. The WLAs for bacteria during summer dry weather (April 1 to October 31) for the LA County MS4 Permittees that discharge to Marina del Rey Harbor are set at zero allowable exceedance days of the single sample bacteria objectives and no exceedances of the geometric mean bacteria objectives at each sampling location for the protection of public health. These WLAs are based on local and national epidemiological studies, the results of which have shown increased risk of illness above the indicator bacteria thresholds used in the TMDL (Haile et al. 1999; USEPA 1984).

Dry weather is defined in the TMDL as those days with less than 0.1 inch of rainfall, and more than three days after a rain day (consistent with the 72-hour period used by the County Department of Health Services to post beaches with rain advisories). The TMDL defines rain days as those days with greater than or equal to 0.1 inch of rainfall. (One-tenth inch of rainfall is the minimum amount of rainfall that will produce runoff and is the smallest unit of measure on standard rain gauges operated by flood management agencies.) Discharge from the MS4 to Marina del Rey Harbor on a summer dry weather day is identified as a category of non-storm water discharge.

The MDR Bacteria TMDLs were adopted to reduce the risk of illness associated with swimming in marine waters contaminated with human sewage and other sources of bacteria.

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<sup>1</sup> Mothers' Beach is referred to as Marina Beach in the *Marina del Rey Harbor Mothers' Beach and Back Basins Bacterial TMDL Coordinated Monitoring Plan* and the *Marina del Rey Harbor Mothers' Beach and Back Basins Bacteria TMDL Dry- and Wet-Weather Implementation Plan*.

Approximately 200,000 beachgoers visit Mothers' Beach annually and Mothers' Beach is popular among mothers with children because of the absence of surf tides. The summer dry weather period (April 1 to October 31) is the highest period of beach use. In addition, Marina del Rey Harbor is the homeport for over 5,000 pleasure boats, 6 yacht clubs, and 19 anchorages. A recent study estimated that there is a substantial economic and public health cost associated with swimming in waters contaminated with bacteria. Regionally, this study estimated that between 627,800 and 1,479,200 excess gastrointestinal illness cases may occur annually among swimmers in Los Angeles County and Orange County beaches as a result of enterococci contaminated waters. The corresponding economic loss annually has been estimated to range from \$21 million to \$51 million. (*Regional Public Health Cost Estimates of Contaminated Coastal Waters: A Case Study of Gastroenteritis at Southern California Beaches*, Given S., L.H. Pendelton, and A.B. Boehm. Env. Sci. Technol. (2006).)

The Regional Board adopted the MDR Bacteria TMDL in 2003 as an amendment to the Los Angeles Region's Basin Plan (Resolution No. 2003-012). This TMDL was subsequently approved by the State Water Resources Control Board Resolution No. 2003-0072, Office of Administrative Law, and the United States Environmental Protection Agency and became effective on March 18, 2004. This TMDL required compliance with the summer dry weather WLAs, and winter dry weather WLAs, by March 18, 2007.

The MDRH Bacteria TMDL specifies that the WLAs will be implemented through MS4 permits. TMDLs are not self-executing, but instead rely upon further Board orders to impose pollutant restrictions on dischargers to achieve the TMDL's WLAs. Federal regulations require that NPDES permits must include conditions consistent with the assumptions and requirements of any available waste load allocation (40 CFR 122.44(d)(vii)(B)). Similarly, state law requires both that the Regional Board implement its Basin Plan when adopting waste discharge requirements (WDRs) and that NPDES permits apply "any more stringent effluent standards or limitations necessary to implement water quality control plans..." (Wat. Code §§ 13263, 13377).

#### *Summary of Permit Requirements to Implement MDRH TMDL Summer Dry Weather WLAs for Bacteria*

The tentative permit incorporates the MDR Bacteria summer dry weather WLAs as receiving water limitations and a supporting prohibition on summer dry weather discharges from the MS4 that cause or contribute to exceedances of the receiving water limitations. The LA County MS4 Permit already prohibits discharges that cause or contribute to the exceedance of water quality standards. The proposed changes make more specific that prohibition, as it relates to summer dry weather discharges containing bacteria that could impair water quality at Mothers' Beach and the back basins of Marina del Rey Harbor during summer dry weather. The proposed permit establishes permit conditions that are consistent with the assumptions and requirements of the MDR Harbor summer dry weather WLAs for bacteria and will, therefore, ensure the attainment of the TMDL's WLAs as required by the Los Angeles Region Basin Plan.

The proposed changes will affect the following LA County MS4 Permittees: County of Los Angeles, the Los Angeles County Flood Control District, and the Cities of Los Angeles and Culver City.

Although the Marina del Rey Watershed is a subwatershed of the Santa Monica Bay Watershed, there are separate Bacteria TMDLs for each because of MDRH's unique characteristics as an enclosed bay. However, all of the responsible agencies under the MDR

Bacteria TMDL are also responsible agencies under the SMB Beaches Bacteria TMDL. The proposed action is identical to that proposed to incorporate permit conditions consistent with the assumptions and requirements of the SMB Beaches Bacteria summer dry weather WLAs, as described in Attachment A.

This proposed permit does not impose any new requirements on the Permittees to comply with this TMDL. On August 9, 2007, the Regional Board adopted Order No. R4-2007-0042, amending Order No. 01-182 to incorporate conditions consistent with the assumptions and requirements of the WLAs for the MDRH Bacteria TMDL. The conditions in this proposed permit are the same as those established by Order No. R4-2007-0042. Thus, they are existing requirements.

## **Statutory History and Requirements**

### *Clean Water Act Section 303(d): Impaired Waters and TMDLs*

The CWA §303(d)(1)(A) requires each State to conduct a biennial assessment of its waters, and identify those waters for which technology based effluent limitations are not stringent enough to achieve water quality standards. These waters are identified as impaired waters on the State's 303(d) list of water quality limited segments. The CWA also requires States to establish a priority ranking for waters on the 303(d) list and to develop and implement TMDLs for these waters.

"A TMDL defines the specified maximum amount of a pollutant which can be discharged or 'loaded' into [impaired waters] from all combined sources" and still allow the waterbody to meet water quality standards (*Dioxin/Organochlorine Center v. Clarke* (9<sup>th</sup> Cir. 1995) 57 F.3d 1517, 1520). A TMDL allocates the acceptable pollutant load to point and nonpoint sources. The elements of a TMDL are described in 40 CFR 130.2 and 130.7. A TMDL is defined as "the sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background" (40 CFR 130.2).

Upon establishment of TMDLs by the State or the U.S. EPA, the State is required to incorporate the TMDLs into the State Water Quality Management Plan (40 CFR 130.6 (c) (1), 130.7). The Water Quality Control Plan for the Los Angeles Region (Basin Plan), and applicable statewide plans, serves as the State Water Quality Management Plan governing the watersheds under the jurisdiction of the Regional Board. When adopting TMDLs as a part of its Basin Plan, the Regional Board includes, as part of the TMDL, a program for implementation of the wasteload allocations for point sources and load allocations for nonpoint sources.

Essentially, TMDLs serve as a backstop provision of the CWA designed to implement water quality standards when other provisions have failed to achieve water quality standards.

### *Clean Water Act Section 402(p): NPDES Permits for MS4s*

The Federal Clean Water Act (CWA) generally prohibits the "discharge of any pollutant," 33 U.S.C. § 1311(a), from a "point source" into the navigable waters of the United States. 33 U.S.C. § 1362(12)(A). An entity can, however, obtain a National Pollutant Discharge Elimination System (NPDES) permit that allows conditionally for the discharge of some pollutants. 33 U.S.C. § 1342(a)(1). The CWA defines point sources as "discernible, confined and discrete conveyances, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure" such as a pipe, ditch, container, rolling stock, concentrated animal feeding operation,

landfill leachate collections system, vessel or other floating craft from which pollutants are or may be discharged. 33 U.S.C. § 1362; 40 CFR 122.2.

In 1987, the U.S. Congress enacted the Water Quality Act recognizing both the environmental threats posed by storm water runoff and the U.S. EPA's problems in implementing regulations for storm water discharges (NRDC II, 966 F.2d at 1296). These Amendments to the CWA established new statutory requirements to control industrial and municipal storm water discharges to waters of the United States (CWA § 402(p).)

The amendments require NPDES permits for storm water discharges from Municipal Separate Storm Sewer Systems (MS4s) to waters of the United States, and classify discharges from MS4s as a "point source".

The storm water discharge permits for MS4s (i) may be issued on a system- or jurisdiction-wide basis; (ii) shall include a requirement to effectively prohibit [unauthorized] non-storm water discharges into the storm sewers; and (iii) shall require controls to reduce the discharge of pollutants from storm water to the maximum extent practicable, 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. (See CWA §402(p) (3) (B)).

Generally, discharges of pollutants that are covered under a NPDES permit must comply with (i) effluent limitations necessary to achieve compliance with technology based standards **as well as (ii) any more stringent effluent limitation "necessary to meet water quality standards"** (emphasis added) (33 U.S.C. § 1311(b)(1)(C)). In the case of MS4 NPDES discharge permits, federal courts have ruled that the CWA grants the permitting agency discretion to determine what pollutant controls are appropriate for discharges from MS4s. The federal courts held that the permitting agency has discretionary authority under "33 U.S.C. § 1342(p)(2)(E) to determine that ensuring strict compliance with state water-quality standards is necessary to control pollutants, or to require less than strict compliance with state water-quality standards, such as a BMP approach" (*Defenders of Wildlife v. Browner*, 191 F.3d 1159 (9<sup>th</sup> Cir., 1999)). Under 33 U.S.C. § 1342(p)(3)(B)(iii), the permitting authority has the choice to include either best management practices or numeric limitations in the permits. NRDC II, 966 F.2d at 1308 ("Congress did not mandate a minimum standards approach or specify that [the] EPA develop minimal performance requirements.").

Even early in the regulatory program for MS4s, the U.S. EPA stated that if the Permittee(s) fails to implement adequate BMPs to prevent exceedance of the receiving water objectives, the permitting authority "may have to consider other approaches to water quality protection" (61 Fed. Reg. 43761; *Interim Permitting Approach*, Response #6, EPA 833-D-96-00, 1996; Order WQ 91-03).

### **Regulatory Scheme**

On November 16, 1990, pursuant to CWA § 402(p), the U.S. EPA promulgated regulations at 40 CFR 122.26 which established requirements for storm water discharges under the NPDES program. The U.S. EPA defines storm water at 40 CFR 122.26 (b)(13) as 'storm water runoff, snow melt runoff, and surface runoff and drainage' [related to storm events or snow melt] (55 Fed. Reg. 47990, 47995). Non-storm water discharges to the MS4 are to be "effectively prohibited" by the MS4 owner/operator. "Effective prohibition" meant that the MS4 Permittee was to implement programs to eliminate non-stormwater discharges to the storm drain system unless authorized under NPDES permits issued independent of the MS4 permit (55 Fed. Reg.

47995). The storm water regulations also intended not to hold MS4 Permittees responsible for certain categories of non-storm water discharges, such as uncontaminated ground water infiltration, natural springs, rising groundwater, stream and diversions, from the MS4 **as long as they are not a source of pollutants and their exempt status is consistent with antidegradation policies and TMDLs**. Such discharges might need to be addressed under independent NPDES permits when specifically identified on a case-by-case basis by the MS4 Permittee or the permitting authority.

Early in the stormwater regulatory program, the U.S. EPA encouraged states to primarily address storm water discharges from the MS4 through the implementation of BMPs on an iterative approach because of the intermittent and variable nature of storm flows and pollutant concentrations as well as insufficient data rather than numerical effluent limitations (61 FR 43761). However, the U.S. EPA's scheme for **non-storm water discharges from the MS4** is to bring them under the existing framework of the NPDES program at 40 CFR 122.44(d). (55 Fed. Reg. 47995). Non-numerical limitations such as BMPs for non-storm water discharges may be authorized only where numerical limits are not feasible (40 CFR 122.44(k)). In any case, if the Permittee fails to implement adequate BMPs to prevent exceedance of the receiving water objectives, the permitting authority "may have to consider other approaches to water quality protection" (61 Fed. Reg. 43761; *Interim Permitting Approach*, Response #6, EPA 833-D-96-00, 1996).

The U.S. EPA has issued guidance for establishing WLAs for storm water discharges in TMDLs and their incorporation as numerical limitations in MS4 Permits (U.S. EPA. 2010. "Revisions to the November 22, 2002 Memorandum 'Establishing Total Maximum Daily Load Wasteload Allocations for Storm Water Sources and NPDES Permit Requirements Based on those WLAs'." Office of Wastewater Management and Office of Wetlands, Oceans and Watersheds. November 12, 2010.).

Since provisions in NPDES permits must reflect the assumptions and requirements of available TMDLs (40 CFR 122.44 (d)(1)(vii)(B)), the NPDES permit must incorporate the WLAs as numeric Water Quality Based Effluent Limitations (WQBEL), where feasible, or as BMPs (reasonably expected to achieve the WLAs when implemented and properly maintained), under specified circumstances (40 CFR 122.44(k)(2) & (3)). USEPA's current position is that, "[w]here the TMDL includes WLAs for stormwater sources that provide numeric pollutant load or numeric surrogate pollutant parameter objectives, the WLA should, where feasible, be translated into numeric WQBELs in the applicable stormwater permits" (USEPA 2010). Where a non-numeric requirement is selected, if a numeric WQBEL is not feasible, the permit's administrative record must support the expectation that the BMPs are sufficient to achieve the WLAs. (40 CFR 124.8, 124.9, and 124.18.) The guidance, however, does not address non-storm water discharges from an MS4.

### **State Regulatory Authority and Permit History**

The State of California is one of forty-five States with duly delegated authority under the CWA to implement the NPDES permitting program. The Porter-Cologne Water Quality Control Act (California Water Code) authorizes the State Board, through the nine regional boards, to issue NPDES permits, and regulate and control the discharge of pollutants into waters of the State. To comply with the CWA, the last iteration of the permit was adopted on December 13, 2001 (Order No. 01-182; NPDES Permit No. CAS004001). On August 9, 2007, the Regional Board adopted Order No. R4-2007-0042, amending the LA County MS4 Permit (Order No. 01-182) to incorporate conditions consistent with the assumptions and requirements of the WLAs for the

MDRH Bacterial TMDL. The Regional Board's action incorporating the TMDL provisions was never challenged either administratively or judicially by any Permittee.

The LA County MS4 Permit requires Permittees to develop, and implement a timely, comprehensive storm water pollution control program to reduce the discharge of pollutants in storm water to the Maximum Extent Practicable (MEP) to the waters of the U.S. and to effectively prohibit non-stormwater discharges to the MS4. In addition, it states that discharges from the MS4 to waters of the U.S. (which includes Marina del Rey Harbor) are required to meet water quality standards. Upon establishment of TMDLs by the State or the U.S. EPA, the State is required to incorporate the TMDLs into the State Water Quality Management Plan (40 CFR 130.6 (c) (1), 130.7). The Water Quality Control Plan for the Los Angeles Region (Basin Plan), and applicable statewide plans, serves as the State Water Quality Management Plan governing the watersheds under the jurisdiction of the LA Water Board. Regional Board-issued NPDES permits must contain provisions consistent with the State Water Quality Management Plan (Wat. Code § 13263).

### **Related State Administrative Actions**

The State Water Board has issued standard receiving water limitations language to be included in municipal storm water permits. (State Board WQO 99-05, which amended WQO 98-01). The State Board affirmed that NPDES storm water permits must prohibit discharges that cause or contribute to violations of water quality standards (See WQ 98- 01, at p. 8). The State Water Board had ruled earlier that municipal storm water permits must include effluent limitations necessary to achieve water quality standards (State Board Orders WQ 91-03 and WQ 91-04).<sup>2</sup> The State Board concluded that these may be non-numerical, but also pointed out that if the Permittee(s) fails to implement adequate BMPs to prevent exceedance of the receiving water objectives, the regional boards may have to consider other approaches to water quality protection (Order WQ 91-03). Also, Discharge Prohibitions need not be iterative (State Board Order WQ 2001-15, see footnote 18). The State Water Board modified the prohibition in WQO 2001-15, because the plain text in the San Diego County MS4 Permit prohibited the discharge of storm water containing pollutants exceeding water quality standards to the MS4, not non-storm water discharges. The discharge of non-storm waters to waters of the U.S. from an MS4 must strictly comply with 33 U.S.C. § 1311(b)(1)(C).

### **Current Status and Basis for Action**

Twenty-one years have passed since adoption of the first MS4 permit for Los Angeles County, while ten years have passed since adoption of the 2001 LA County MS4 permit. LA County MS4 Permittees have had over three permit terms (1990 – present) to implement their stormwater program, including source control programs and an illicit connections/ illicit discharges elimination (IC/IDE) program, and have been accorded ample opportunity to eliminate unauthorized non-storm water discharges from the MS4 that are causing or contributing to the exceedance of a water quality objective, or to require operators of such discharges to be permitted through the Regional Board's NPDES program. In 2001, the LA Water Board revised its single sample and geometric mean water quality objectives for bacteria to reflect U.S. EPA recommended criteria and the findings of a peer-reviewed local epidemiological study (Regional Board Resolution 2001-018)<sup>3</sup> and Permittees should have revised their stormwater management programs to eliminate the exceedances of these Basin Plan objectives. However,

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<sup>2</sup> In Order WQ 91-04, the State Board reviewed a complaint brought by the environmental community that the 1990 LA County MS4 Permit lacked numerical effluent limits and violated federal law.

<sup>3</sup> As far back as the 1994 update, the Basin Plan included single sample and geometric mean water quality objectives for a subset of the fecal indicator bacteria included in the 2001 amendments.

few Permittees have made changes to their Storm Water Quality Management Programs in response to exceedances of bacteria objectives in MDRH. However, dry weather discharges from the MS4 continue to cause violations of bacterial water quality standards at Marina del Rey Harbor Basins D, E, and F and Mother's Beach.

In view of the above, Regional Board staff concludes that it is necessary and feasible to (i) make more specific the prohibition on non-stormwater MS4 discharges, (ii) include numeric receiving water limitations equivalent to the Basin Plan bacteria objectives, and (iii) establish a final date for achieving bacteria water quality objectives in order to ensure the timely elimination of the existing water quality impairments in MDRH and at Mother's Beach and, thus, guarantee the protection of public health. This approach is consistent with the recent USEPA memorandum, which encourages the use of numeric limitations in stormwater permits to clarify permit requirements and improve accountability and enforceability (USEPA 2010).

### **Options for Summer Dry Weather WLA Compliance**

The MS4 permittees in the MDR Watershed have already begun taking actions to reduce bacteria impairments in MDRH, including at Mothers' Beach. Technical options for compliance with the dry weather WLAs for MDRH have been previously analyzed by the Permittees (Marina del Rey Harbor Mother's Beach and Back Basins Bacteria TMDL Dry- and Wet-Weather Implementation Plan (January 2007); Santa Monica Bay Beaches Bacteria TMDL Implementation Plan for Jurisdictional Groups 2 and 3, (Feb 2005)). Potential solutions include (i) institutional controls (non-structural source controls) such as public education and restaurant inspections; (ii) sub-regional (distributed or decentralized) controls such as small-scale infiltration and limited treatment; (iii) regional controls such as capture, storage and treatment systems or constructed wetlands; and (iv) low-flow diversion to waste water treatment plants. The LA County MS4 Permittees within the MDR Watershed have already submitted an Implementation Plan, to achieve the MDR Bacteria TMDL, for the LA Water Board's review. In April of 2006, the Board reviewed and acknowledged support for this plan under Resolution 2006-009.

### **State Grants and Bond Funds for Implementation**

As of 2007, the State Water Board and the LA Regional Water Board have funded a total of 27 projects costing \$18.7 million within the Santa Monica Bay Watershed, of which the MDR Watershed is a part, to address bacterial contamination. Accordingly, some of the monies granted to the SMB Watershed are directed toward MDRH projects. Six of these projects worth \$3.5 million dollars are for the treatment of bacteria or pathogens as the primary pollutant. In addition, there are twenty-one Clean Beach Initiative (CBI) Projects worth \$15.1 million, primarily dry-weather diversion projects, within the Santa Monica Bay. These projects are managed by the State Water Board and are for bacteria reduction. Most of the projects are underway and are at various stages of completion. Similarly, the Santa Monica Bay Restoration Commission (SMBRC) has issued grant funds of about \$5.8 million for 16 projects to treat dry weather flows to Santa Monica Bay, eight of which have been completed.

Within the MDR Watershed, the Marina Beach Water Quality Improvement Project received \$2 million as a CBI Project to increase the water circulation at Marina (Mothers') Beach and to divert sheet flow from Basin D. The circulation phase of the project was completed in October 2006. In addition, the SMBRC provided \$200,000 through Proposition 50 for the Boone-Olive Plant low-flow diversion project, which was completed in December 2006.

**Opportunity for Public Comment**

The notice of the LA Water Board's 2007 proceedings to incorporate the MDR Bacteria TMDL summer dry weather WLAs into the LA County MS4 Permit was circulated on May 11, 2007, for a 45-day comment period prior to the board's consideration at its August 2007 board meeting.

**Recommended Action**

The LA MS4 Permit includes provisions to effectively prohibit unauthorized non-stormwater discharges. Permittees may achieve the effective prohibition by implementing source control measures and an IC/IDE program to remove unauthorized non-storm water discharges or to get them permitted through the Regional Board's NPDES program. Given the fact that the proposed action seeks to prohibit discharges during summer dry weather from MS4s to Mothers' Beach and Basins D, E, and F in MDRH and that compliance is determined by receiving water limitations, it is a reasonable action by the LA Water Board to protect water quality and human health. Language is included in permit findings to clarify how compliance with the relevant limitations will be determined. The LA Water Board's administrative record adequately supports the proposed approach as being sufficient to meet the MDR Bacteria TMDL summer dry weather WLAs.

The recommended approach includes provisions in Findings; Part 1. Discharge Prohibitions Section; Part 2. Receiving Water Limitations Section, and Part 5. Definitions to incorporate permit conditions consistent with the assumptions and requirements of the MDR Bacteria summer dry weather WLAs. The provisions include receiving water limitations for bacteria and a prohibition against summer dry weather discharges from the MS4 to MDRH Basins D, E, and F that result in an exceedance of the bacteria receiving water limitations.

**ATTACHMENT C  
TO  
FACT SHEET SUPPORTING ORDER NO. R4-2011-XXX**

INCORPORATION OF PERMIT CONDITIONS CONSISTENT WITH THE  
ASSUMPTIONS AND REQUIREMENTS OF WASTELOAD ALLOCATIONS FOR  
TRASH ESTABLISHED IN THE  
LOS ANGELES RIVER WATERSHED TRASH TMDL

## TABLE OF CONTENTS

<b>Introduction .....</b>	<b>3</b>
<b>Background: Summary of Impairments and TMDL Elements .....</b>	<b>5</b>
<b>Statutory History and Requirements .....</b>	<b>7</b>
<b>State Regulatory Authority .....</b>	<b>9</b>
<b>Current Status and Basis for Action.....</b>	<b>11</b>
<b>Recommended Action .....</b>	<b>13</b>
<b>Opportunity for Public Comment.....</b>	<b>15</b>

## Introduction

This attachment describes and provides the rationale for the manner in which the Regional Board incorporated permit conditions into the LA County Municipal Separate Storm Sewer System (MS4) Permit consistent with the assumptions and requirements of the Los Angeles River Watershed Trash Total Maximum Daily Load (TMDL) Wasteload Allocations (WLAs) and associated provisions for discharges from the MS4 to the Los Angeles River and its tributaries as required by federal and state laws and regulations.<sup>1</sup>

### *Summary of LA River Trash TMDL*

The LA River Trash TMDL was established to address the documented impairments in the Los Angeles River Watershed due to trash that were identified on the State's Clean Water Act Section 303(d) List of impaired waters, and to ultimately achieve the narrative water quality objectives contained in the Basin Plan for both "Floating Material" and "Solid, Suspended, or Settleable Materials" that require:

*"Waters shall not contain floating materials, including solids, liquids, foams, and scum, in concentrations that cause nuisance or adversely affect beneficial uses"; and*  
*"Waters shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses."*

The TMDL requires progressive annual reductions in discharges of trash from the MS4 from an established baseline for each permittee identified as a responsible jurisdiction in the TMDL, until the final numeric target of zero trash discharge is attained. The compliance deadlines for the interim waste load allocations are at the end of each storm period (October 1 to September 30). Compliance with the final waste load allocations is required by September 30, 2016. The proposed permit requirements rely upon the translation of Basin Plan Tables 7-2.2 into jurisdiction-specific waste load allocations (see Tables 3 and 4, hereto). The waste load allocations in Appendix 1 have been translated into effluent limitations, contained in Appendix 7-1 of the permit, by calculating the corresponding three-year rolling average.

### *TMDL History*

The Los Angeles River Trash TMDL was initially adopted by the Regional Board on September 19, 2001. Twenty-two cities<sup>2</sup> ("Cities") sued the Regional Board and State Board to set aside the TMDL, stopping progress towards halting the thousands of tons of garbage that is discharged to the Los Angeles River and its tributaries. The trial court entered an order deciding some claims in favor of the Regional Board and State Board and some in favor of the Cities. Both sides appealed, and on January 26, 2006, the Court of Appeal decided every one of the Cities' claims in favor of the Boards, except with respect to CEQA compliance (*City of Arcadia et al. v. Los Angeles Regional Water Quality Control Board et al.* (2006) 135 Cal.App.4th 1392).<sup>3</sup>

The Court of Appeal rejected the following claims litigated by the Cities:

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<sup>1</sup> Tributaries to the Los Angeles River include but are not limited to Pacoima Wash, Tujunga Wash, Burbank Western Channel, Verdugo Wash, Arroyo Seco, the Rio Hondo, and Compton Creek.

<sup>2</sup> The cities include Arcadia, Baldwin Park, Bellflower, Cerritos, Commerce, Diamond Bar, Downey, Irwindale, Lawndale, Monrovia, Montebello, Monterey Park, Pico Rivera, Rosemead, San Gabriel, Santa Fe Springs, Sierra Madre, Signal Hill, South Pasadena, Vernon, West Covina, and Whittier.

<sup>3</sup> The Cities filed a petition for review by the California Supreme Court, but on April 19, 2006, the Supreme Court declined to hear any of the Cities' claims.

- a. The Court rejected the Cities' claim that the target of zero trash is unattainable and inordinately expensive. (135 Cal.App.4<sup>th</sup> at 1413 and 1427-1430.)
- b. The Court rejected the Cities' claim that an assimilative capacity study was required before the Boards could determine how much trash, a pollutant that does not assimilate, would violate the narrative objectives. (135 Cal.App.4<sup>th</sup> at 1409-1413.)
- c. The Court rejected the Cities' claim that the Boards were required, but failed, to conduct a cost/benefit analysis and consideration of economic factors. (135 Cal.App.4<sup>th</sup> at 1415-1418.)
- d. The Court rejected the Cities' claim that the Boards were prohibited from establishing a TMDL for the Los Angeles River Estuary until it was formally listed on the 303(d) list. (135 Cal.App.4<sup>th</sup> at 1418-1420.)
- e. The Court rejected the Cities' claims that TMDLs for storm water may not require agencies to perform better than the "maximum extent practicable", and must allow compliance through best management practices. (135 Cal.App.4<sup>th</sup> at 1427-1430.)
- f. The Court rejected the Cities' claim that the Boards were required to implement load allocations for nonpoint sources of trash pollution. (135 Cal.App.4<sup>th</sup> at 1430-1432.)
- g. The Court rejected the Cities' claim that the Boards failed to adhere to the data collection and analysis required by federal and state law (135 Cal.App.4<sup>th</sup> at 1433-34.)
- h. The Court rejected the Cities' claim that the Boards relied on nonexistent, illegal, and irrational uses to be made of the Los Angeles River. (135 Cal.App.4<sup>th</sup> at 1432-33.)
- i. The Court rejected the Cities' claim that the Boards violated the Administrative Procedures Act (APA). (135 Cal.App.4<sup>th</sup> at 1434-35.)

The Court did find, however, that the Boards did not adequately complete the environmental checklist, and that evidence of a "fair argument" of significant impacts existed such that the Boards should have performed an EIR level of analysis. (135 Cal.App.4<sup>th</sup> at 1420-26.) The Court therefore declared the Trash TMDL void, and issued a writ of mandate that ordered the Boards to set aside and not implement the TMDL, until it has been brought into compliance with California Environmental Quality Act.

As a result of the appellate court's decision, in 2006 the Regional Board set aside its 2001 action incorporating the TMDL into the Basin Plan (Resolution R06-013) (*City of Arcadia et al. v. Los Angeles Regional Water Quality Control Board et al.* (2006) 135 Cal.App.4<sup>th</sup> 1392). After conducting the required CEQA analysis, the Regional Board readopted the Los Angeles River Watershed Trash TMDL on August 9, 2007 (Resolution No. 2007-0012).<sup>4</sup> This TMDL was subsequently approved by the State Water Resources Control Board (Resolution No. 2008-0024), the Office of Administrative Law (File No. 2008-0519-02 S), and the United States Environmental Protection Agency, and became effective on September 23, 2008.

### *Summary of LA River Trash TMDL Permit Requirements*

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<sup>4</sup> The Regional Board first adopted the Los Angeles River Trash TMDL in September 2001 (Resolution R01-013). As a result of a court decision, in 2006 the Regional Board set aside its 2001 action incorporating the TMDL into the Basin Plan (Resolution R06-013) (*City of Arcadia et al. v. Los Angeles Regional Water Quality Control Board et al.* (2006) 135 Cal.App.4<sup>th</sup> 1392). In 2007, the Regional Board readopted the TMDL with the revised CEQA analysis ordered by the court (Resolution R07-012).

The tentative permit incorporates the interim and final WLAs, expressed as annual reductions in discharges of trash from individual jurisdictional areas within the Los Angeles River Watershed, into the LA County MS4 Permit as numeric effluent limitations consistent with USEPA's recent memorandum (USEPA 2010). This memorandum states that, "[w]here the TMDL includes WLAs for stormwater sources that provide numeric pollutant load or numeric surrogate pollutant parameter objectives, the WLA should, where feasible, be translated into numeric WQBELs in the applicable stormwater permits" (USEPA 2010).

Additionally, the tentative permit incorporates provisions that specify alternative means of determining compliance with the interim and final effluent limitations. These include:

- (i) a technology-based approach whereby BMPs meeting the design standard of "full capture" may be properly installed and maintained to demonstrate compliance with the effluent limitations,
- (ii) a numeric effluent limitation based approach whereby "partial capture" BMPs and institutional controls not meeting the design standard of "full capture" may be implemented in drainage areas, in which case compliance with the applicable effluent limitation shall be demonstrated by measuring actual reductions in trash discharges in these areas.

Either or both approaches may be used within a jurisdictional area.

The incorporation of interim and final effluent limitations based upon the TMDL WLAs is consistent with the iterative process of implementing BMPs that has been employed in the previous LA County MS4 Permit in that compliance with the final effluent limitations may be achieved over the course of nine years. However, because the waterbodies in the Los Angeles River Watershed are impaired due to trash discharges from the MS4, it is necessary to establish more specific provisions in order to (i) ensure measurable reductions in trash discharges resulting in progressive water quality improvements during the iterative process and (ii) establish a final date for completing implementation of BMPs and, ultimately, achieving effluent limitations and water quality standards.

The Los Angeles River Watershed Trash TMDL was lawfully adopted as an amendment to the Los Angeles Region's Basin Plan and required compliance with interim WLAs as of September 30, 2008. Most Basin Plan provisions, including TMDLs adopted as amendments to the Basin Plan, are not self-implementing. Therefore, federal and state laws and regulations require that permits incorporate requirements consistent with the TMDL WLAs.

This proposed permit does not impose any new requirements on the Permittees to comply with this TMDL. On December 10, 2009, the Regional Board adopted Order No. R4-2009-0130, amending Order No. 01-182 to incorporate conditions consistent with the assumptions and requirements of the WLAs for the Los Angeles River Watershed Trash TMDL. The conditions in this proposed permit are the same as those established by Order No. R4-2009-0010. Thus, they are existing requirements.

### **Background: Summary of Impairments and TMDL Elements**

Trash in waterways causes significant water quality problems. Small and large floatables inhibit the growth of aquatic vegetation, decreasing habitat and spawning areas for fish and other living organisms. Wildlife living in rivers and in riparian areas can be harmed by ingesting or becoming entangled in floating trash. Except for large items, settleables are not always obvious to the eye. They include glass, cigarette butts, rubber, and construction debris, among other things. Settleables can be a problem for bottom feeders and can contribute to sediment contamination. Some debris (e.g. diapers, medical and household waste, and chemicals) are a

source of bacteria and toxic substances. Floating debris that is not trapped and removed will eventually end up on the beaches or in the open ocean, keeping visitors away from our beaches and degrading coastal waters.

Trash is a serious and pervasive water quality problem in the Los Angeles River Watershed. The Regional Board has determined that current levels of trash exceed the existing water quality objectives contained in the Basin Plan that are necessary to protect the beneficial uses of the river. Regional Board staff regularly observes trash in the waterways of the Los Angeles River Watershed. Non-profit organizations such as Heal the Bay, Friends of the Los Angeles River (FoLAR) and others organize volunteer clean-ups periodically, and document the amount of trash collected. Data on quantities of trash removed from waterways and downstream beaches are provided in the Administrative Record for the Los Angeles River Trash TMDL.

Long Beach collects large amounts of trash at the mouth of the Los Angeles River, as much of the trash carried down the Los Angeles River ends up at the river's mouth in Long Beach. Debris tonnage at the mouth of the Los Angeles River is listed in Table 1.

Table 1. Storm Debris Collection Summary for Long Beach (tons)<sup>5</sup>

Storm Year	First Quarter (July-Sept.)	Second Quarter (Oct.-Dec.)	Third Quarter (Jan.-March)	Fourth Quarter (April-June)	Total
1994-95	436	509	3,576	702	5,224
1995-96	504	344	3,100	645	4,593
1996-97	350	2,361	601	681	3,993
1997-98	647	3,650	4,016	977	9,290
1998-99	565	720	532	1,274	3,091
1999-00	781	176	1,664	1,223	3,844
2000-01	757	581	2,625	474	4,437
2001-02	424	739	288	407	1,858
2002-03	430	752	2,564	884	4,630
2003-04	299	779	607	951	2,636
2004-05	273	4,390	6,176	1,416	12,255
2005-06	561	495	862	670	2,591

Trash discharged to waterbodies discourages recreational activity, degrades aquatic habitat, threatens wildlife through ingestion and entanglement, and also poses risks to human health. Existing beneficial uses impaired by trash in the Los Angeles River are contact recreation (REC-1) and non-contact recreation (REC-2); warm fresh water habitat (WARM); wildlife habitat (WILD); estuarine habitat (EST) and marine habitat (MAR); rare, threatened or endangered species (RARE); migration of aquatic organisms (MIGR) and spawning, reproduction and early development of fish (SPWN); commercial and sport fishing (COMM); wetland habitat (WET); and cold freshwater habitat (COLD).

The Regional Board adopted a trash TMDL for the Los Angeles River Watershed to eliminate the documented water quality impairment resulting from significant amounts of trash discharged to the Los Angeles River and its tributaries, and by doing so to restore the beneficial uses of the

<sup>5</sup> City of Long Beach L.A. River Debris Summary (as of June 2006).

river. The TMDL establishes a numeric target of zero discharge of trash, and identifies discharges from the MS4 as the major source of trash to the Los Angeles River and its tributaries.

To achieve the numeric target of zero discharge of trash, the TMDL sets interim and final wasteload allocations (WLAs) for trash discharges in the Los Angeles River Watershed, expressed as progressive annual percentage reductions from a predetermined baseline WLA assigned to each responsible jurisdiction, until the final waste load allocation of zero discharge is allocated in 2014. The TMDL allows for compliance with these annual percentage reductions to be determined based on a two-year rolling average of the interim waste load allocations in the second year of implementation, and based on a three-year rolling average in subsequent years, resulting in a final compliance date of 2016.

Co-permittees under the LA County MS4 Permit that are identified as responsible jurisdictions in the Los Angeles River Trash TMDL include the County of Los Angeles, the County of Los Angeles Flood Control District, and the Cities of Alhambra, Arcadia, Bell, Bell Gardens, Bradbury, Burbank, Calabasas, Carson, Commerce, Compton, Cudahy, Downey, Duarte, El Monte, Glendale, Hidden Hills, Huntington Park, Irwindale, La Cañada Flintridge, Los Angeles, Lynwood, Maywood, Monrovia, Montebello, Monterey Park, Paramount, Pasadena, Pico Rivera, Rosemead, San Fernando, San Gabriel, San Marino, Santa Clarita, Sierra Madre, Signal Hill, South El Monte, South Gate, South Pasadena, Temple City, and Vernon.

The Los Angeles River Trash TMDL specifies under “Implementation” that the WLAs will be implemented through MS4 permits. TMDLs are not self-executing, but instead rely upon further Board orders to impose pollutant restrictions on dischargers to achieve the TMDL’s WLAs. Federal regulations require that NPDES permits must include conditions consistent with the assumptions and requirements of any available waste load allocation (40 CFR 122.44(d)(vii)(B)). Similarly, state law requires both that the Regional Board implement its Basin Plan when adopting waste discharge requirements (WDRs) and that NPDES permits apply “any more stringent effluent standards or limitations necessary to implement water quality control plans...” (Wat. Code §§ 13263, 13377).

## **Statutory History and Requirements**

### *Clean Water Act Section 303(d): Impaired Waters and TMDLs*

The CWA §303(d)(1)(A) requires each State to conduct a biennial assessment of its waters, and identify those waters for which technology based effluent limitations are not stringent enough to achieve water quality standards. These waters are identified as impaired waters on the State’s 303(d) list of water quality limited segments. The CWA also requires States to establish a priority ranking for waters on the 303(d) list and to develop and implement TMDLs for these waters.

“A TMDL defines the specified maximum amount of a pollutant which can be discharged or ‘loaded’ into [impaired waters] from all combined sources” and still allow the waterbody to meet water quality standards (*Dioxin/Organochlorine Center v. Clarke* (9<sup>th</sup> Cir. 1995) 57 F.3d 1517, 1520). A TMDL allocates the acceptable pollutant load to point and nonpoint sources. The elements of a TMDL are described in 40 CFR 130.2 and 130.7. A TMDL is defined as “the sum of the individual waste load allocations for point sources and load allocations for nonpoint sources and natural background” (40 CFR 130.2).

Upon establishment of TMDLs by the State or the U.S. EPA, the State is required to incorporate the TMDLs into the State Water Quality Management Plan (40 CFR 130.6 (c) (1), 130.7). The Water Quality Control Plan for the Los Angeles Region (Basin Plan), and applicable statewide plans, serves as the State Water Quality Management Plan governing the watersheds under the jurisdiction of the Regional Board. When adopting TMDLs as a part of its Basin Plan, the Regional Board includes, as part of the TMDL, a program for implementation of the wasteload allocations for point sources and load allocations for nonpoint sources.

Essentially, TMDLs serve as a backstop provision of the CWA designed to implement water quality standards when other provisions have failed to achieve water quality standards.

#### *Clean Water Act Section 402(p): NPDES Permits for MS4s*

The federal Clean Water Act (CWA) generally prohibits the “discharge of any pollutant,” 33 U.S.C. § 1311(a), from a “point source” into waters of the United States. 33 U.S.C. § 1362(12)(A). An entity can, however, obtain a National Pollutant Discharge Elimination System (NPDES) permit that allows conditionally for the discharge of some pollutants. 33 U.S.C. § 1342(a)(1). The CWA defines point sources as “discernible, confined and discrete conveyances, including but not limited to, any pipe, ditch, channel, tunnel, conduit, well, discrete fissure” such as a pipe, ditch, container, rolling stock, concentrated animal feeding operation, landfill leachate collections system, vessel or other floating craft from which pollutants are or may be discharged. 33 U.S.C. § 1362; 40 CFR 122.2.

In 1987, the U.S. Congress enacted the Water Quality Act recognizing both the environmental threats posed by storm water runoff and the U.S. EPA’s problems in implementing regulations for storm water discharges (NRDC II, 966 F.2d at 1296). These Amendments to the CWA established new statutory requirements to control industrial and municipal storm water discharges to waters of the United States (CWA § 402(p).) The amendments require NPDES permits for storm water discharges from Municipal Separate Storm Sewer Systems (MS4s) to waters of the United States, and classify discharges from MS4s as a “point source”.

The NPDES permits for MS4s (i) may be issued on a system- or jurisdiction-wide basis; (ii) shall include a requirement to effectively prohibit [unauthorized] non-storm water discharges into the storm sewers; and (iii) shall require controls to reduce the discharge of pollutants from storm water 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. (See CWA §402(p)(3)(B).)

On November 16, 1990, pursuant to CWA § 402(p), the U.S. EPA promulgated regulations at 40 CFR 122.26 which established requirements for MS4 discharges under the NPDES program.

Generally, discharges of pollutants that are covered under a NPDES permit must comply with (i) effluent limitations necessary to achieve compliance with technology based standards **as well as** (ii) **any more stringent effluent limitation “necessary to meet water quality standards”** (emphasis added) (33 U.S.C. § 1311(b)(1)(C)). In the case of MS4 NPDES discharge permits, federal courts have ruled that the CWA grants the permitting agency discretion to determine what pollutant controls are appropriate for discharges from MS4s. The federal courts held that the permitting agency has discretionary authority under “33 U.S.C. § 1342(p)(2)(E) to determine that ensuring strict compliance with state water-quality standards is necessary to control pollutants, or to require less than strict compliance with state water-quality standards, such as a

BMP approach” (*Defenders of Wildlife v. Browner*, 191 F.3d 1159 (9<sup>th</sup> Cir., 1999)). Under 33 U.S.C. § 1342(p)(3)(B)(iii), the permitting authority has the choice to include either best management practices or numeric effluent limitations in the permits. NRDC II, 966 F.2d at 1308 (“Congress did not mandate a minimum standards approach or specify that [the] EPA develop minimal performance requirements.”).

Even early in the regulatory program for MS4s, the U.S. EPA stated that if the Permittee(s) fails to implement adequate BMPs to prevent exceedance of the receiving water objectives, the permitting authority “may have to consider other approaches to water quality protection” (61 Fed. Reg. 43761; *Interim Permitting Approach*, Response #6, EPA 833-D-96-00, 1996; Order WQ 91-03).

### **State Regulatory Authority**

In California, trash that is discharged to waterbodies is regulated by Regional Boards through their Basin Plans. In the Basin Plans, trash is identified as both a “floatable material” and a “solid, suspended or settleable material.” The Basin Plans establish narrative water quality objectives for both, stating in general terms that *waters shall not contain these materials in concentrations that cause nuisance or adversely affect beneficial uses*. These narrative objectives are consistent with water quality criteria recommended under CWA section 304(a) by the U.S. EPA (1986).

The Regional Boards implement these narrative objectives for trash through a variety of mechanisms depending upon the primary source of the trash discharges. Until recently, attempts were made to implement these narrative objectives for trash primarily through standard provisions in NPDES permits for discharges from MS4s (discussed below). Where an individual waterbody is identified as impaired due to trash, *additional* regulatory requirements are established in a TMDL and incorporated into the Basin Plan, as described earlier.

The State of California is one of forty-five States that have been granted authority under the CWA to implement the NPDES permitting program in lieu of US EPA. The Porter-Cologne Act (California Water Code) authorizes the State Board, through the nine regional boards, to issue NPDES permits, and regulate and control the discharge of pollutants into waters of the State. Regional Board-issued NPDES permits must contain provisions consistent with the State Water Quality Management Plan (Wat. Code § 13263).

### *Related State Administrative Actions*

The State Board has affirmed that NPDES MS4 permits must prohibit discharges that cause or contribute to violations of water quality standards contained in Basin Plans or Statewide Water Quality Control Plans (See WQ 98-01, at p. 8). In 1999, the State Board issued standard receiving water limitations language to be included in municipal storm water permits across the State consistent with this affirmation (Order WQO 99-05, which amended Order WQO 98-01).

The State Water Board had ruled earlier that municipal storm water permits must include effluent limitations necessary to achieve water quality standards (State Board Orders WQ 91-03 and WQ 91-04)<sup>6</sup>. The State Board concluded that these may be non-numerical, but also pointed out that if the Permittee(s) fails to implement adequate BMPs to prevent exceedance of the

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<sup>6</sup> In Order WQ 91-04, the State Board reviewed a complaint brought by the environmental community that the 1990 LA County MS4 Permit lacked numerical effluent limits and violated federal law.

receiving water objectives, the regional boards may have to consider other approaches to water quality protection (Order WQ 91-03).

Later, the State Board in Order WQ 2001-15 stated that “where urban runoff is causing or contributing to exceedances of water quality standards, it is appropriate to require improvements to BMPs that address those exceedances” (Order WQ 2001-15, p. 8).

*LA County MS4 Permit*

Because of the complexity and networking of the municipal separate storm sewer system and drainage facilities within and tributary to the County of Los Angeles, the Regional Board adopted a system-wide approach in permitting discharges from the MS4. As described in the main Fact Sheet, the permit requires Permittees to implement timely and comprehensive programs in the areas of public involvement and participation, industrial/commercial inspection, development planning, development construction, public agency activities in order to control urban runoff and stormwater discharges from the MS4 to waters of the U.S. In addition, it states that discharges from the MS4 to waters of the U.S., including Los Angeles River and its tributaries, may not cause or contribute to exceedances of water quality objectives.

*Regulatory Scheme for Control of Trash Discharges*

Consistent with U.S. EPA expectations at the time, the trash control requirements in the first LA County MS4 Permit issued in 1990 were general and included documenting existing best management practices (BMPs), designing a stormwater monitoring program, and developing plans to optimize existing BMPs and implement additional BMPs. With each subsequent permit, there has been an increasing level of specificity in requirements to control trash, as shown in Table 2.

Table 2. Evolution of Permit Requirements for Control of Trash Discharges

<b>Requirements</b>	<b>Early Permits (Pre-TMDL)</b>	<b>2<sup>nd</sup> Generation Permits (Pre-TMDL)</b>	<b>3<sup>rd</sup> Generation Permits</b>
Catch Basin (CB) Prioritization	None	None	Based on trash generation
CB Cleanout Frequency	1x during summer season	1x prior to storm season	1-4x per year based on prioritization
Additional CB Cleanouts	As necessary	When 40% full	When 25% full
Other CB Requirements	None	None	Trash excluders or equivalent at high priority CBs
Street Sweeping Prioritization	None	None	Based on trash generation
Street Sweeping Frequency	1x per month; where feasible, more frequently in high trash areas	Based on traffic volume	Based on trash generation
Open Channel Maintenance	1x per year prior to storm season	1x per year prior to storm season	1x per year prior to storm season
Parking Lot	1x per month	1x per month	2x per month

Sweeping			
TMDL requirements for impaired waterbodies	None	None	Yes

This evolution in requirements is linked to the identification of waterbodies as impaired due to trash. The “second generation” MS4 permits, which were developed around the same time as the first determination of trash impairments, reflected an increase in specificity beyond what was done in the earlier permits. Those developed later, in conjunction with the first trash TMDLs, have been further refined in terms of their requirements to control discharges of trash.

The tentative permit, as with the previous LA County MS4 Permit, contains standard provisions for controlling trash discharges from the storm drain system, including but not limited to:

- Public Information and Participation Program (PIPP) in Part 4.B;
- Industrial/Commercial Facilities Control Program in Part 4.C, including requirements for permittees to (i) inspect critical sources and (ii) require operators to implement additional controls to reduce pollutants in runoff to CWA section 303(d) impaired waters; and
- Public Agency Activities Program in Part 4.F, including requirements for storm drain operation and management, street and road maintenance, and parking facilities management.

In drainage areas subject to the Los Angeles River Trash TMDL, the previous (2001) permit, prior to the 2009 re-opener, required permittees to continue the implementation of specified catch basin inspections and cleaning until trash TMDL implementation measures were adopted. Additionally, for any special event that can be reasonably expected to generate substantial quantities of trash and litter, permittees are still required to properly manage trash and litter generated, as a condition of the special use permit issued for that event. At a minimum, the municipality who issues the permit for the special event shall arrange for either temporary screens to be placed on catch basins or for catch basins in that area to be cleaned out subsequent to the event and prior to any rain event.

Permittees were required to place trash receptacles at all transit stops within their jurisdiction that have shelters by August 1, 2002, and at all other transit stops within their jurisdiction by February 3, 2003. Permittees are required to maintain all trash receptacles as necessary. The Principal Permittee, in cooperation with Permittees, is also required to continue coordinating outreach programs that focus on trash in the Los Angeles River.

### **Current Status and Basis for Action**

While the Los Angeles County Department of Public Works reported a "30% decrease in roadway trash on unincorporated County roads and a 50% decrease in trash entering catchbasins since adoption of the current National Pollutant Discharge Elimination System (NPDES) Permit"<sup>7</sup>, these standard provisions described above have not adequately controlled trash discharges to the Los Angeles River. As a result, trash in the Los Angeles River continues to be a serious problem, causing continued impairments to recreational and aquatic life beneficial uses of the river.

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<sup>7</sup>Comment letter from County of Los Angeles, Department of Public Works, May 15, 2000, p. 1.

Twenty-one years have passed since adoption of the first MS4 permit for Los Angeles County, while ten years have passed since adoption of the 2001 LA County MS4 permit. There has been ample time for Permittees to implement the standard provisions of the permit to control trash discharges to the Los Angeles River and to apply the iterative approach set forth in the Part I.B. of the 2001 Permit in order to address the trash impairments in the Los Angeles River watershed. Yet, water quality impairments due to trash discharges from the MS4 to the Los Angeles River and its tributaries remain a serious public health and environmental problem.

Additionally, over the last 21 years, much has been learned about the nature of urban runoff and stormwater and BMP performance, both nationally and regionally. During the early years of the stormwater regulatory program, the State Board recognized that a prudent approach was one that implemented BMPs to reduce sources and control pollutants from MS4 and continued to collect monitoring data on the characteristics of urban runoff and stormwater (Order WQ 91-03). However, with extensive data on the characteristics of stormwater and BMP performance, numeric effluent limitations for discharges of trash have become feasible since it is possible to determine a BMP equivalent of the numeric target.<sup>8</sup>

As noted above, the TMDL requires progressive annual reductions in the amount of trash that may be discharged from a jurisdiction in the watershed. Section 122.44(d)(1)(vii)(B) requires that NPDES permits include conditions that are “consistent with the assumptions and requirements” of available waste load allocations. Therefore, Staff reviewed the structure of the WLAs and the requirements of the Trash TMDL before crafting the proposal for incorporation. Based on the TMDL and the manner in which the waste load allocations are expressed, staff concluded that the most obvious and logical manner of incorporating the Trash WLAs would involve the adoption of conditions in the permit that require annual reductions in the amount of trash that may be discharged by each jurisdiction. By definition the specification of a limit on the quantity of a pollutant that may be discharged from a specific location is in fact a numerically expressed “effluent limitation”, as that term is defined in Water Code section 13385.1. While a variety of mechanisms might be considered to maneuver around the result, staff considers that the effect of any of those efforts would be to essentially water down the salient provisions of the TMDL to render them less- or unenforceable, beyond the current receiving water limitations and iterative approach that has not achieved compliance with water quality standards. Staff also considers the vast resources the Regional Board has devoted to this particular TMDL over the last decade with the intent of finally signaling the start to the end of the significant trash water quality problems that have been unresolved since the 1998 placement of the Los Angeles River on the 303(d) list.

In view of the above, Regional Board staff concludes that it is necessary and feasible to include the interim and final WLAs contained in the Los Angeles River Watershed Trash TMDL into the permit as numeric effluent limitations to ensure timely and measurable reductions in trash discharges to eliminate the existing water quality impairment. This is consistent with the recent USEPA memorandum, which states “[n]umeric WQBELs in stormwater permits can clarify permit requirements and improve accountability and enforceability” (USEPA 2010). This memorandum further states that TMDL WLAs “should, where feasible, be translated into numeric WQBELs in the applicable stormwater permits” (USEPA 2010).

### *Options for Trash WLA Compliance*

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<sup>8</sup> For example, installation of full capture BMPs in forty percent of a responsible jurisdiction's drainage area translates to a forty-percent reduction in the pre-assigned baseline waste load allocations. Since the waste load allocations are assigned as percent reductions, they can be directly translated from BMP implementation.

The Regional Board has determined that these WLAs may be achieved in several ways. Compliance approaches for the trash TMDLs can be broadly classified into the “full capture” approach, “institutional controls,” and the “partial capture” approach. These approaches can be applied individually or in combination throughout the watershed to meet TMDL requirements.

The full capture approach involves the installation of “full-capture<sup>9</sup>” trash control systems in drainage areas of the affected watershed. All drainage areas where such an approach is employed are considered to be in compliance with the zero numeric target. This means that no further implementation actions are necessary, provided the system or device is appropriately sized for the subwatershed in which it is implemented and that it is properly maintained. This approach is consistent with the traditional storm water approach where dischargers are authorized to rely upon the use of best management practices. Full capture systems are specific structural best management practices that have been determined to meet the requirements of the TMDL. The use of such systems obviates the obligation on the part of the permittee to determine the actual amount of trash loading that the permittee may be causing, as compliance with the effluent limitations is determined by the fact of the installation and maintenance of the systems, not by the actual effluent quality.

Institutional controls are trash control measures taken by jurisdictional agencies that do not require any construction or installations. These are more typically referred to as “non-structural best management practices.” Examples include street sweeping, public education, and clean out of catch basins that discharge to storm drains. Since the efficacy of institutional controls cannot be accurately assessed with a measure of certainty, where compliance with the effluent limitations relies upon institutional controls it must be determined by a method that assesses the trash discharges and reductions that are actually occurring in the watershed. The TMDL specifies that this may be achieved by comparing the allowable discharge against the total estimated discharge of trash from storm events, using a mass-based equation.<sup>10</sup> Compliance is deemed to have been attained when the estimated discharge is equal to or less than the allowable load.

The partial capture approach involves the use of other structural trash control devices (best management practices) that do not meet the “full-capture” performance requirements. For the partial capture approach, the degree of compliance with the zero target is determined by the demonstrated performance of the devices in question.<sup>11</sup> Alternatively, where a device’s performance is not known, compliance can be determined in the same manner as that used for institutional controls.

### **Recommended Action**

During the 2009 re-opener of the previous permit (Order No. 01-182), Regional Board staff considered several alternatives for making enforceable the Los Angeles River Trash TMDL WLAs.

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<sup>9</sup> For the purpose of the trash TMDLs, a full capture device is defined as “*any single device or series of devices that traps all particles retained by a 5mm mesh screen with a design treatment capacity of  $\geq$  the peak flow rate resulting from a one-year, one-hour storm in the sub-drainage area.*”

<sup>10</sup> The discharge is estimated using a mass balance equation. Discharge = [DGR x Days since last street sweeping] - [trash obtained from catch basin cleanouts]. The DGR (daily generation rate) is the average amount of trash deposited within a specified drainage area over a 24-hour period. Annual re-calculation of the DGR is intended to serve as a measure of the effectiveness of institutional controls or source reduction measures.

<sup>11</sup> Performance must be demonstrated under different conditions (e.g. low to high trash loading).

The Regional Board chose to incorporate the TMDL WLAs as numeric effluent limitations with alternative compliance approaches for the reasons described in this Attachment. In summary, federal regulation requires that NPDES permits must contain effluent limitations and other conditions that are consistent with the assumptions and requirements of any available waste load allocation (40 CFR 122.44(d)(1)(vii)(B)). State law requires both that the Regional Board implement its Basin Plan when adopting waste discharge requirements (WDRs) and that NPDES permits apply “any more stringent effluent standards or limitations necessary to implement water quality control plans...” (Wat. Code §§ 13263, 13377). The Ninth Circuit Court of Appeals in *Defenders of Wildlife v. Browner* ruled that the Clean Water Act grants the permitting agency discretion either to require “strict compliance” with water quality standards through the imposition of numeric effluent limitations, or to employ an iterative approach toward compliance with water quality standards, by requiring improved BMPs over time (*Defenders of Wildlife v. Browner* (9<sup>th</sup> Cir. 1999) 191 F.3d 1159). In a precedential decision, the State Board acknowledged that the holding in *Browner* allows the issuance of MS4 permits that limit their provisions to BMPs that control pollutants to the MEP, and which do not require compliance with water quality standards. However, the State Board has concluded and the Regional Board agrees that “where urban runoff is causing or contributing to exceedances of water quality standards, it is appropriate to require improvements to BMPs that address those exceedances” (Order WQ 2001-15, p. 8). In a recent memorandum to states, the USEPA concluded that “[n]umeric WQBELs in stormwater permits can clarify permit requirements and improve accountability and enforceability”, and that TMDL WLAs “should, where feasible, be translated into numeric WQBELs in the applicable stormwater permits” (USEPA 2010).

Regional Board staff concludes that in the case of the Trash TMDL, given its history, the resources devoted to its establishment, the continuing nature of the impairment, and the structure of the TMDL’s waste load allocations, it is appropriate to establish numeric effluent limitations that will result in measurable reductions in the pollutants discharged from the MS4 to receiving waters within a specified time frame, consistent with the TMDL’s WLAs and implementation schedule.

Staff recommends re-adoption of the permit conditions and supporting findings from the 2009 permit amendments, including the provisions in Part 7 Total Maximum Daily Load Provisions that incorporate the Los Angeles River Trash WLAs, and 2009 revisions to Parts 4.F.5(b) (Standard Provisions) and 5 (Definitions). These previous permit amendments included the addition of effluent limitations for LA County MS4 Permittees identified as responsible jurisdictions in the Los Angeles River Watershed Trash TMDL, to achieve a progressive reduction in trash discharges from the MS4 to the Los Angeles River and its tributaries. Compliance with these effluent limitations will address the impairment of beneficial uses that occurs as a result of these discharges.

The permit conditions contain more specific requirements in the form of measurable interim and final effluent limitations to eliminate discharges of trash from the MS4 to the Los Angeles River and its tributaries in order to achieve water quality standards. This Order incorporates effluent limitations equivalent to applicable WLAs that have been adopted by the Regional Board and have been approved by the State Board, Office of Administrative Law and the U.S. EPA. The conditions that implement the TMDL WLAs in the Order are expressed as effluent limitations in a manner consistent with the assumptions and requirements of the TMDL from which they are derived.

**Opportunity for Public Comment**

Regional Board staff previously held a workshop on July 29, 2009, to inform Permittees and other interested persons regarding how the Los Angeles River Trash TMDL WLAs would be incorporated into the LA County MS4 Permit. Comments were solicited during this workshop and up to two weeks following. These comments were considered by staff in formulating the 2009 draft permit modifications. Responses to these comments and comments received on the draft provisions, findings and fact sheet were prepared prior to the December 10, 2009 hearing to consider adoption of Order No. R4-2009-0130. In addition, the notice of the proposed Regional Board's proceedings to incorporate the Los Angeles River Watershed Trash TMDL's WLAs into the Los Angeles County MS4 Permit, which was circulated on October 8, 2009, provided a 30-day comment period for interested parties. The Regional Board hearing where Order No. R4-2009-0130 was adopted, which was held on December 10, 2009, provided further opportunity for stakeholders to comment.

**Table 3: Los Angeles River Watershed Trash TMDL Waste Load Allocations per Storm Year, expressed as allowable discharge relative to baseline Waste Load Allocations (gallons of uncompressed volume)**

Permittee	End of Storm Year – September 30				
	2010 (40%)	2011 (30%)	2012 (20%)	2013 (10%)	2014 (0%)
Alhambra	15961	11971	7981	3990	0
Arcadia	20043	15032	10022	5011	0
Bell	6410	4808	3205	1603	0
Bell Gardens	5400	4050	2700	1350	0
Bradbury	1711	1283	855	428	0
Burbank	37036	27777	18518	9259	0
Calabasas	9002	6752	4501	2251	0
Carson	2733	2050	1366	683	0
Commerce	23493	17620	11747	5873	0
Compton	21276	15957	10638	5319	0
Cudahy	2374	1781	1187	594	0
Downey	15625	11719	7813	3906	0
Duarte	4884	3663	2442	1221	0
El Monte	16883	12662	8442	4221	0
Glendale	56126	42094	28063	14031	0
Hidden Hills	1465	1099	733	366	0
Huntington Park	7664	5748	3832	1916	0
Irwindale	4941	3706	2470	1235	0
La Cañada Flintridge	13398	10049	6699	3350	0
Los Angeles	549938	412454	274969	137485	0
Los Angeles County	124089	93067	62045	31022	0
Lynwood	11280	8460	5640	2820	0
Maywood	2452	1839	1226	613	0
Monrovia	18675	14006	9337	4669	0
Montebello	20148	15111	10074	5037	0
Monterey Park	15560	11670	7780	3890	0
Paramount	10981	8236	5490	2745	0
Pasadena	44799	33599	22400	11200	0
Pico Rivera	5581	4186	2791	1395	0
Rosemead	10922	8192	5461	2731	0
San Fernando	5579	4184	2789	1395	0
San Gabriel	8137	6103	4069	2034	0
San Marino	5756	4317	2878	1439	0
Santa Clarita	360	270	180	90	0
Sierra Madre	4644	3483	2322	1161	0
Signal Hill	3774	2830	1887	943	0
South El Monte	6400	4800	3200	1600	0
South Gate	17562	13171	8781	4390	0
South Pasadena	5963	4472	2981	1491	0
Temple City	7029	5272	3514	1757	0
Vernon	18881	14161	9441	4720	0

**Table 4: Los Angeles River Watershed Trash TMDL Waste Load Allocations per Storm Year, expressed as allowable discharge relative to baseline Waste Load Allocations (pounds of drip-dry weight)**

Permittee	End of Storm Year – September 30				
	2010 (40%)	2011 (30%)	2012 (20%)	2013 (10%)	2014 (0%)
Alhambra	27504	20628	13752	6876	0
Arcadia	37214	27911	18607	9304	0
Bell	10135	7601	5067	2534	0
Bell Gardens	9348	7011	4674	2337	0
Bradbury	4864	3648	2432	1216	0
Burbank	68156	51117	34078	17039	0
Calabasas	20892	15669	10446	5223	0
Carson	4083	3062	2042	1021	0
Commerce	34192	25644	17096	8548	0
Compton	34542	25907	17271	8636	0
Cudahy	4024	3018	2012	1006	0
Downey	27403	20552	13701	6851	0
Duarte	9475	7106	4737	2369	0
El Monte	27307	20480	13653	6827	0
Glendale	117399	88049	58700	29350	0
Hidden Hills	4328	3246	2164	1082	0
Huntington Park	12372	9279	6186	3093	0
Irwindale	7164	5373	3582	1791	0
La Cañada Flintridge	29499	22124	14749	7375	0
Los Angeles	1029000	771750	514500	257250	0
Los Angeles County	260722	195542	130361	65181	0
Lynwood	18587	13940	9293	4647	0
Maywood	4220	3165	2110	1055	0
Monrovia	40395	30296	20198	10099	0
Montebello	33483	25112	16741	8371	0
Monterey Park	28182	21137	14091	7046	0
Paramount	17796	13347	8898	4449	0
Pasadena	83006	62254	41503	20751	0
Pico Rivera	9020	6765	4510	2255	0
Rosemead	18951	14213	9476	4738	0
San Fernando	9231	6923	4615	2308	0
San Gabriel	14575	10931	7287	3644	0
San Marino	11659	8744	5829	2915	0
Santa Clarita	930	698	465	233	0
Sierra Madre	10077	7558	5038	2519	0
Signal Hill	5688	4266	2844	1422	0
South El Monte	9728	7296	4864	2432	0
South Gate	28933	21700	14467	7233	0
South Pasadena	11343	8507	5671	2836	0
Temple City	12728	9546	6364	3182	0
Vernon	26726	20044	13363	6681	0